

## *Introduction*

Weinschel Associates has at its foundation a 50 year legacy as a supplier of high performance, high quality Broadband Passive Components to the RF and Microwave communities. WA builds on this foundation through the application of modern process and product technologies to continuously drive our product, price, and service performance.

At the core of our business are our proven Engineering and Manufacturing techniques. Refined methods of resistor manufacture produce better yields at higher accuracies with improved typical performance. This applies both to attenuation and VSWR versus frequency as well as low power and temperature coefficients. The process of deposition and ruggedness of our resistive films provide bilateral match for all units and bilateral high power input in many of our models.

Wrapped around this core is an aggressive and customer-focused business model. WA understands modern consumers of RF and Microwave Passive Components are less likely to be Microwave experts than in decades past and we are dedicated to helping our customers identify and acquire the optimum products.

Our goal is to serve you, the customer, with an ever increasing usefulness of product line. This catalogue provides a snapshot of our product offerings. We hope you will find what you require.

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Please keep in mind new products are always in development and we would be delighted to discuss your requirements to help you find the best product for your application.

## *Mission Statement*

Weinschel Associates designs and manufactures high-quality RF and Microwave products for commercial and military markets both domestic and international. Core technologies originated by founder Bruno Weinschel are leveraged using modern design, production, delivery, and service techniques to provide the best product at the best price to our customers. Our path to success hinges upon a continuous focus on product quality, price performance, and service.



# *A Tradition of Quality A Commitment to Service*

## *Quality Policy*

The Quality Policy of Weinschel Associates is as follows:

- To meet or exceed all requirements agreed to with our customers.
- To strive for continuous improvement in Product Quality, Price Performance, and Customer Service.

## *Quality Control*

Our products are designed and tested to meet MIL-I-45208, MIL-Q-9858, MIL-C-45662 as they apply. Connector interface dimensions comply with MIL-PRF-39012, MIL-STD-348, and IEEE-STD-287. Attenuators are designed to meet MIL-DTL-3933. Terminations are designed to comply with MIL-DTL-39030.

## *RoHS Compliance*

The RoHS directive (EU Directive 2002/95/EC) became valid on 1 July 2006 in the member states of the European Union. Its aim is to reduce a total of six substances from Electrical and Electronic Equipment (EEE), thereby contributing to the protection of human health and the environment.

Although RoHS is a European Union (EU) Directive, manufacturers of EEE outside Europe must also abide by this legislation if the equipment they produce is ultimately imported into an EU member state.

The RoHS directive restricts the use of certain hazardous substances commonly used in the manufacturing of electronic equipment and requires producers of electronic equipment to reduce the concentration of these hazardous materials, by July, 2006, to proscribed levels by weight.

Weinschel Associates aims to minimize environmental impacts due to our products and processes by systematically considering environmental issues during product design.

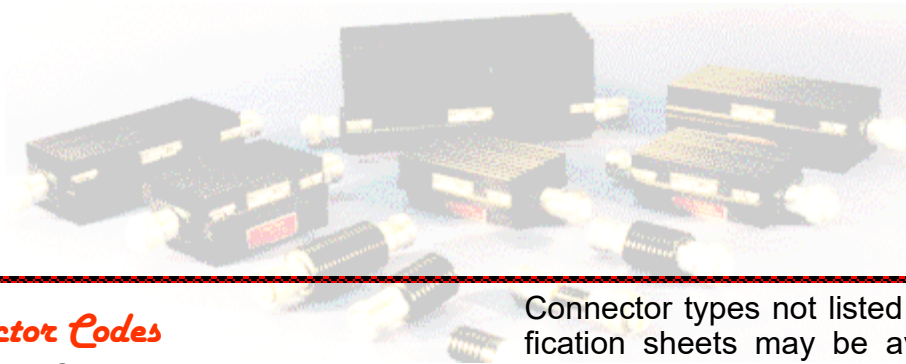
To the best of our knowledge, the products presented in this catalogue comply with the hazardous substance restrictions imposed by the RoHS directive and are suitable for use in RoHS-compliant systems and assemblies.

## *How to Order*

When placing an order, please provide the model number, attenuation in decibels (dB) for an attenuator, and the desired connector configuration.

\* Connector Code

| Examples            |        |   |    |   |      |
|---------------------|--------|---|----|---|------|
| <b>Attenuator:</b>  | WA48   | - | 30 | - | 0403 |
|                     | Model  |   | dB |   | *    |
| <b>Termination:</b> | WA1424 | - | 05 |   |      |
|                     | Model  |   | *  |   |      |



## Connector Codes

Connector Code: Each digit represents a connector type per the following table:

| Code | Connector Type | Gender |
|------|----------------|--------|
| 01   | SMA Jack       | F      |
| 02   | SMA Plug       | M      |
| 03   | N-Type Jack    | F      |
| 04   | N-Type Plug    | M      |
| 05   | TNC Jack       | F      |
| 06   | TNC Plug       | M      |
| 07   | DIN 7/16 Jack  | F      |
| 08   | DIN 7/16 Plug  | M      |
| 09   | 7 mm           | N/A    |
| 10   |                |        |
| 11   | 3.5 mm         | F      |
| 12   | 3.5 mm         | M      |
| 13   | 2.92 mm        | F      |
| 14   | 2.92 mm        | M      |
| 15   | 2.4 mm         | F      |
| 16   | 2.4 mm         | M      |
| 17   | 1.85 mm        | F      |
| 18   | 1.85 mm        | M      |
| 19   | BNC            | F      |
| 20   | BNC            | M      |
| 21   | 4.3-10         | F      |
| 22   | 4.3-10         | M      |

Connector codes may vary depending on model type as listed on the associated specification sheet. In the case of Uni-directional attenuators, the first digit of the connector code identifies the input connector (N-type Plug (m) in the example) and the second digit identifies the

Connector types not listed on the specification sheets may be available. We will make every effort to accommodate your request.

## Power Ratings

Unless otherwise specified, all of our products will operate at their full power rating without the need for forced air cooling.

All of our products are dry and achieve their rated power handling without oils or other coolants.

## Warranty

Weinschel Associates warrants each product it manufactures to be free from defects in material and workmanship. Defective product will be repaired or replaced at the discretion of WA at no charge to the customer for a period of two years after shipment to the original purchaser.

The above warranty is Weinschel Associates sole warranty and the extent of its liabilities and obligations with respect to its products unless otherwise explicitly agreed to in writing. WA makes no other warranty of any kind, express or implied, and disclaims any warranty of merchantability or fitness for a particular purpose. In no event shall WA be liable for any incidental, consequential, or special loss or damages, or for any sum greater than the purchase price of the product.

Weinschel Associates reserves the right to make changes in the design of its products at any time without incurring any obligation to make those changes on products it has previously sold.

# FIXED COAXIAL ATTENUATORS

DC – 50.0 GHz

1 – 2000 WATTS

## Low Power Fixed Attenuators: 1 Watt to 10 Watts

| Model Number | Average Power (W) | Frequency Range DC - (GHz) | Peak Power (kW) | Standard* Attenuation Values (dB) | Connectors and Mounting Notes | Page No. |
|--------------|-------------------|----------------------------|-----------------|-----------------------------------|-------------------------------|----------|
| WA6          | 1                 | 50                         | 0.25            | 1 to 30                           | 2.4 mm                        | 13       |
| WA50         | 2                 | 3                          | 1               | 1 to 50                           | N                             | 46       |
| WA1W/6       | 2                 | 6                          | 1               | 1 to 60                           | N                             | 6        |
| WA3/6        | 2                 | 6                          | 0.5             | 1 to 60                           | SMA                           | 7        |
| WA3C/6       | 2                 | 6                          | 0.25            | 1 to 30                           | SMA                           | 8        |
| WA3CH/6      | 2                 | 6                          | 0.25            | 1 to 30                           | SMA                           | 9        |
| WA3H/6       | 2                 | 6                          | 0.5             | 1 to 60                           | SMA                           | 10       |
| WA3M/6       | 2                 | 6                          | 0.5             | 1 to 60                           | SMA                           | 11       |
| WA3T/6       | 2                 | 6                          | 0.5             | 1 to 60                           | SMA                           | 12       |
| WA18         | 2                 | 6                          | 1               | 1 to 30                           | BNC                           | 19       |
| WA1W         | 2                 | 12.4                       | 1               | 1 to 60                           | N                             | 6        |
| WA3          | 2                 | 12.4                       | 0.5             | 1 to 60                           | SMA                           | 7        |
| WA3C         | 2                 | 12.4                       | 0.25            | 1 to 30                           | SMA                           | 8        |
| WA3CH        | 2                 | 12.4                       | 0.25            | 1 to 30                           | SMA                           | 9        |
| WA3H         | 2                 | 12.4                       | 0.5             | 1 to 60                           | SMA                           | 10       |
| WA3M         | 2                 | 12.4                       | 0.5             | 1 to 60                           | SMA                           | 11       |
| WA3T         | 2                 | 12.4                       | 0.5             | 1 to 60                           | SMA                           | 12       |
| WA2W         | 2                 | 18                         | 1               | 1 to 60                           | N                             | 6        |
| WA32         | 2                 | 18                         | 0.5             | 1 to 60                           | SMA                           | 27       |
| WA4          | 2                 | 18                         | 0.5             | 1 to 60                           | SMA                           | 7        |
| WA4C         | 2                 | 18                         | 0.25            | 1 to 30                           | SMA                           | 8        |
| WA4CH        | 2                 | 18                         | 0.25            | 1 to 30                           | SMA                           | 9        |
| WA4H         | 2                 | 18                         | 0.5             | 1 to 60                           | SMA                           | 10       |
| WA4M         | 2                 | 18                         | 0.5             | 1 to 60                           | SMA                           | 11       |
| WA4T         | 2                 | 18                         | 0.5             | 1 to 60                           | SMA                           | 12       |
| WA9          | 2                 | 26.5                       | 0.5             | 1 to 60                           | SMA                           | 17       |
| WA56         | 2                 | 32                         | 0.2             | 1 to 30                           | 3.5mm                         | 52       |
| WA54         | 2                 | 40                         | 0.2             | 1 to 30                           | 2.92 mm                       | 49       |
| WA54CH       | 2                 | 40                         | 0.2             | 1 to 30                           | 2.92 mm                       | 50       |
| WA6A         | 2                 | 50                         | 0.25            | 1 to 30                           | 2.4 mm                        | 13       |
| WA1/6        | 5                 | 6                          | 1               | 1 to 60                           | N                             | 5        |
| WA7/6        | 5                 | 6                          | 1               | 1 to 60                           | SMA                           | 14       |
| WA7A         | 5                 | 18                         | 0.5             | 1 to 60                           | SMA                           | 15       |
| WA7A/12      | 5                 | 12.4                       | 0.5             | 1 to 60                           | SMA                           | 15       |
| WA7A/6       | 5                 | 6                          | 0.5             | 1 to 60                           | SMA                           | 15       |
| WA17         | 5                 | 18                         | 1               | 1 to 60                           | 7mm                           | 18       |
| WA19         | 5                 | 6                          | 1               | 1 to 30                           | BNC                           | 20       |
| WA55/6       | 5                 | 6                          | 1               | 1 to 30                           | TNC                           | 51       |
| WA1          | 5                 | 12.4                       | 1               | 1 to 60                           | N                             | 5        |
| WA7/12       | 5                 | 12.4                       | 1               | 1 to 60                           | SMA                           | 14       |
| WA2          | 5                 | 18                         | 1               | 1 to 60                           | N                             | 5        |
| WA44         | 5                 | 18                         | 1               | 1 to 60                           | N                             | 40       |

## WEINSCHEL ASSOCIATES

TEL: 877.948.8342 / 301.963.4630 ♦ Fax: 301.963.8640

WEB: <http://www.WeinschelAssociates.com>

EMAIL: [sales@WeinschelAssociates.com](mailto:sales@WeinschelAssociates.com)



# FIXED COAXIAL ATTENUATORS

DC – 50.0 GHz

1 — 2000 WATTS

## Low Power Fixed Attenuators: 1 Watt to 10 Watts - Continued

| Model Number | Average Power (W) | Frequency Range DC - (GHz) | Peak Power (kW) | Standard* Attenuation Values (dB) | Connectors and Mounting Notes | Page No. |
|--------------|-------------------|----------------------------|-----------------|-----------------------------------|-------------------------------|----------|
| WA7          | 5                 | 18                         | 1               | 1 to 60                           | SMA                           | 14       |
| WA55         | 5                 | 18                         | 1               | 1 to 30                           | TNC                           | 51       |
| WA77         | 5                 | 32                         | 0.2             | 1 to 30                           | 3.5 mm                        | 69       |
| WA75         | 5                 | 40                         | 0.2             | 1 to 30                           | 2.92 mm                       | 66       |
| WA41/6       | 10                | 6                          | 1               | 1 to 60                           | SMA                           | 37       |
| WA41T/6      | 10                | 6                          | 1               | 1 to 60                           | TNC                           | 38       |
| WA8/6        | 10                | 6                          | 1               | 1 to 60                           | N                             | 16       |
| WA20         | 10                | 6                          | 1               | 1 to 30                           | BNC                           | 21       |
| WA37         | 10                | 8.5                        | 1               | 1 to 60                           | N                             | 33       |
| WA41/12      | 10                | 12.4                       | 1               | 1 to 60                           | SMA                           | 37       |
| WA41T/12     | 10                | 12.4                       | 1               | 1 to 60                           | TNC                           | 38       |
| WA8/12       | 10                | 12.4                       | 1               | 1 to 60                           | N                             | 16       |
| WA41         | 10                | 18                         | 1               | 1 to 60                           | SMA                           | 37       |
| WA41T        | 10                | 18                         | 1               | 1 to 60                           | TNC                           | 38       |
| WA8          | 10                | 18                         | 1               | 1 to 60                           | N                             | 16       |
| WA76         | 10                | 40                         | 0.2             | 6 to 30                           | 2.92 mm                       | 67       |
| WA76B        | 10                | 40                         | 0.2             | 3 to 30                           | 2.92 mm, Flatpack             | 68       |
| WA78         | 10                | 26.5                       | 0.2             | 6 to 30                           | 3.5                           | 70       |

## Medium Power Fixed Attenuators: 20 Watts to 100 Watts

| Model Number | Average Power (W) | Frequency Range DC - (GHz) | Peak Power (kW) | Standard* Attenuation Values (dB) | Connectors and Mounting Notes       | Page No. |
|--------------|-------------------|----------------------------|-----------------|-----------------------------------|-------------------------------------|----------|
| WA33L        | 20                | 4                          | 5               | 1 to 30                           | N, SMA, TNC, 7/16 DIN               | 30       |
| WA34L        | 20                | 8.5                        | 5               | 1 to 30, 40                       | N, SMA, TNC, 7/16 DIN               | 30       |
| WA89         | 20                | 40                         | 0.20            | 10 to 30                          | 2.92 mm                             | 75       |
| WA21         | 25                | 4                          | 5               | 1 to 40                           | N, SMA, TNC, Low-Profile, Mountable | 22       |
| WA34         | 25                | 4                          | 5               | 1 to 40                           | N, SMA, 7/16 DIN                    | 28       |
| WA34B        | 25                | 4                          | 5               | 1 to 40                           | N, SMA, TNC, Square Body Mount      | 29       |
| WA22         | 25                | 8.5                        | 5               | 1 to 30                           | N, SMA, TNC, Low-Profile, Mountable | 22       |
| WA33         | 25                | 8.5                        | 5               | 1 to 30                           | N, SMA, 7/16 DIN                    | 28       |
| WA33B        | 25                | 8.5                        | 5               | 1 to 30                           | N, SMA, TNC, Square Body Mount      | 29       |
| WA46/12      | 25                | 12.4                       | 1               | 3 to 40                           | N, SMA, TNC                         | 42       |
| WA46         | 25                | 18                         | 1               | 3 to 40                           | N, SMA, TNC                         | 42       |
| WA74         | 25                | 28                         | 0.50            | 3 to 30                           | 3.5 mm                              | 65       |

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WEB: <http://www.WeinschelAssociates.com>

EMAIL: [sales@WeinschelAssociates.com](mailto:sales@WeinschelAssociates.com)



# FIXED COAXIAL ATTENUATORS

DC – 50.0 GHz

1 — 2000 WATTS

## Medium Power Fixed Attenuators: 20 Watts to 100 Watts - Continued

| Model Number | Average Power (W) | Frequency Range DC - (GHz) | Peak Power (kW) | Standard* Attenuation Values (dB) | Connectors and Mounting Notes       | Page No. |
|--------------|-------------------|----------------------------|-----------------|-----------------------------------|-------------------------------------|----------|
| WA23         | 50                | 4                          | 5               | 1 to 40                           | N, SMA, TNC, 7/16 DIN               | 23       |
| WA23B        | 50                | 4                          | 5               | 3 to 40                           | N, SMA, TNC Square Body Mount       | 24       |
| WA71         | 50                | 4                          | 5               | 1 to 40                           | N, SMA, TNC Low-Profile, Mountable  | 63       |
| WA24         | 50                | 8.5                        | 5               | 3 to 40                           | N, SMA, TNC, 7/16 DIN               | 23       |
| WA24B        | 50                | 8.5                        | 5               | 3 to 40                           | N, SMA, TNC, Square Body Mount      | 24       |
| WA72         | 50                | 8.5                        | 5               | 1 to 40                           | N, SMA, TNC, Low-Profile, Mountable | 63       |
| WA47/12      | 50                | 12.4                       | 1               | 6 to 40                           | N, SMA, TNC                         | 43       |
| WA90/12      | 50                | 12.4                       | 1               | 3 to 40, 50, 60                   | N, SMA, TNC                         | 76       |
| WA47         | 50                | 18                         | 1               | 6 to 40                           | N, SMA, TNC                         | 43       |
| WA90         | 50                | 18                         | 1               | 3 to 40                           | N, SMA, TNC                         | 76       |
| WA90B        | 50                | 18                         | 1               | 3 to 40                           | N, SMA, TNC                         | 77       |
| WA73         | 50                | 26                         | 0.5             | 6 to 40                           | 3.5 mm                              | 64       |
| WA86         | 50                | 22                         | 1               | 3 to 40                           | SMA                                 | 73       |
| WA88         | 50                | 40                         | 0.2             | 20, 30, 40                        | 2.92 mm                             | 74       |
| WA29/4       | 75                | 4                          | 5               | 3 to 49                           | N, SMA, TNC, 7/16 DIN               | 26       |
| WA29         | 75                | 8.5                        | 5               | 3 to 40                           | N, SMA, TNC, 7/16 DIN               | 26       |
| WA59         | 100               | 3.0                        | 10              | 3 to 40                           | N, SMA, TNC, Low-Profile, Mountable | 55       |
| WA26         | 100               | 4                          | 5               | 3 to 40                           | N, SMA, TNC, 7/16 DIN               | 25       |
| WA30         | 100               | 4                          | 5               | 3 to 30                           | N, SMA, TNC, 7/16 DIN               | 27       |
| WA68         | 100               | 6                          | 5               | 1 to 30                           | N, SMA, 7/16 DIN                    | 61       |
| WA27         | 100               | 8.5                        | 5               | 3 to 40                           | N, SMA, TNC, 7/16 DIN               | 25       |
| WA31         | 100               | 8.5                        | 5               | 3 to 30                           | N, SMA, TNC, 7/16 DIN               | 27       |
| WA48/12      | 100               | 12.4                       | 1               | 10 to 30                          | N, SMA, TNC                         | 44       |
| WA91/12      | 100               | 12.4                       | 1               | 3 to 40                           | N, SMA, TNC                         | 78       |
| WA48         | 100               | 18                         | 1               | 10 to 40                          | N, SMA, TNC                         | 44       |
| WA91         | 100               | 18                         | 1               | 3 to 40                           | N, SMA, TNC                         | 78       |
| WA93         | 100               | 18                         | 1               | 10 to 30                          | N, SMA, TNC                         | 80       |

\* Other attenuation values and connector configurations are available

**Custom solutions at “off-the-shelf” prices**



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WEB: <http://www.WeinschelAssociates.com>

EMAIL: [sales@WeinschelAssociates.com](mailto:sales@WeinschelAssociates.com)

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Rev -

Specification  
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without notice

# FIXED COAXIAL ATTENUATORS

DC – 50.0 GHz

1 — 2000 WATTS

## High Power Fixed Attenuators: 150 Watts to 2000 Watts

| Model Number | Average Power (W) | Frequency Range DC - (GHz) | Peak Power (kW) | Standard* Attenuation Values (dB) | Connectors and Mounting Notes                   | Page No. |
|--------------|-------------------|----------------------------|-----------------|-----------------------------------|---|----------|
| WA40         | 150               | 3                          | 10              | 3 to 40                           | N, SMA, TNC, 7/16 DIN                           | 36       |
| WA42         | 150               | 3                          | 10              | 3 to 40                           | N, SMA, TNC, 7/16 DIN<br>Low-Profile, Mountable | 39       |
| WA65         | 150               | 3                          | 10              | 3 to 30                           | N, SMA, 7/16 DIN                                | 58       |
| WA39         | 150               | 4                          | 5               | 3 to 40                           | N, SMA, TNC, 7/16 DIN                           | 35       |
| WA61         | 150               | 4                          | 5               | 3 to 40                           | N, 7/16 DIN<br>Low-Profile, Mountable           | 57       |
| WA57         | 150               | 5                          | 10              | 3 to 40                           | N, SMA, TNC, 7/16 DIN                           | 53       |
| WA49         | 150               | 8.5                        | 5               | 3 to 40                           | N, SMA, TNC, 7/16 DIN                           | 45       |
| WA62         | 150               | 8.5                        | 5               | 3 to 40                           | N, 7/16 DIN<br>Low-Profile, Mountable           | 57       |
| WA66/12      | 150               | 12.4                       | 1               | 10 to 40                          | N, SMA  | 59       |
| WA92/12      | 150               | 12.4                       | 1               | 10 to 40                          | N, SMA, TNC                                     | 79       |
| WA66         | 150               | 18                         | 1               | 10 to 40                          | N, SMA  | 59       |
| WA92         | 150               | 18                         | 1               | 10 to 40                          | N, SMA, TNC                                     | 79       |
| WA95/12      | 200               | 12.4                       | 1               | 10 to 40                          | N-type  | 81       |
| WA95         | 200               | 18                         | 1               | 10 to 40                          | N-type  | 81       |
| WA45         | 250               | 2.5                        | 10              | 10 to 40                          | N, 7/16 DIN                                     | 41       |
| WA45/3       | 250               | 3                          | 10              | 10 to 40                          | N, 7/16 DIN                                     | 41       |
| WA58         | 250               | 5                          | 10              | 3 to 40                           | N, 7/16 DIN                                     | 54       |
| WA35         | 250               | 8.5                        | 5               | 10 to 40                          | N, 7/16 DIN                                     | 31       |
| WA96         | 250               | 18                         | 1               | 10 to 40                          | N-type  | 82       |
| WA38         | 300               | 5                          | 10              | 10 to 40                          | N, 7/16 DIN                                     | 34       |
| WA36         | 300               | 8.5                        | 5               | 10 to 40                          | N, 7/16 DIN                                     | 32       |
| WA67         | 350               | 12                         | 5               | 10 to 40                          | N-type  | 60       |
| WA53         | 500               | 3                          | 10              | 3 to 40                           | N, 7/16 DIN                                     | 48       |
| WA60         | 500               | 5                          | 5               | 10 to 40                          | N, 7/16 DIN                                     | 56       |
| WA51         | 500               | 8.5                        | 5               | 10 to 40                          | N, 7/16 DIN                                     | 47       |
| WA81         | 500               | 10                         | 5               | 10 to 40                          | N, 7/16 DIN                                     | 72       |
| WA70         | 1000              | 3                          | 10              | 20, 30, 40                        | N, 7/16 DIN                                     | 62       |
| WA80         | 2000              | 3                          | 10              | 20, 30, 40                        | N, 7/16 DIN                                     | 71       |

\* Other attenuation values and connector configurations are available

**Custom solutions at “off-the-shelf” prices**



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WEB: <http://www.WeinschelAssociates.com>

EMAIL: [sales@WeinschelAssociates.com](mailto:sales@WeinschelAssociates.com)

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Rev -

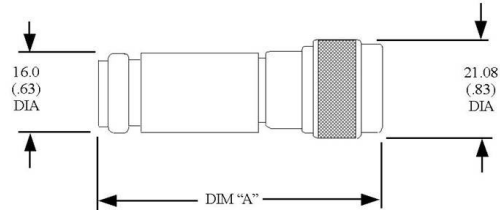
Specification  
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without notice

# Fixed Coaxial Attenuator

# WA1 & WA2

WA1/6:DC – 6 GHz  
WA1: DC – 12.4 GHz  
WA2: DC – 18.0 GHz

5 WATTS



## Features

Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1/6: DC - 6 GHz.  
WA1: DC - 12.4 GHz.  
WA2: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** <0.005 dB/dB/W. Bidirectional in power.

**Power Rating:** 5 W average. Maximum rated average power to 25°C ambient temperature, de-rated linearly to 0.5 W at 125°C. 1 kW peak (5 µsec pulse width; 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors, gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost. Model WA2 is also available in a calibrated attenuator set WAS -6 (3, 6, 10 and 20dB) with certificate of calibration.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |      |
|------------------|---------------|------|------|
|                  | WA1(/6)       | WA1  | WA2  |
| 1 to 2           | 0.4           | 0.4  | 0.5  |
| 3 to 9           | 0.3           | 0.3  | 0.3  |
| 10 to 20         | 0.5           | 0.5  | 0.5  |
| 21 to 40         | 0.75          | 0.75 | 1.0  |
| 41 to 50         | 0.75          | 0.75 | 1.25 |
| 51 to 60         | 1.0           | 1.0  | 1.5  |

## Maximum VSWR

| Frequency (GHz) | VSWR    |      |      |
|-----------------|---------|------|------|
|                 | WA1(/6) | WA1  | WA2  |
| DC - 4.0        | 1.15    | 1.15 | 1.15 |
| 4.0 - 8.0       | 1.2     | 1.2  | 1.2  |
| 8.0 - 12.4      | N/A     | 1.25 | 1.25 |
| 12.4 - 18.0     | N/A     | N/A  | 1.4  |

## Weight (All Models):

|          |           |
|----------|-----------|
| 01-30 dB | 70 (2.6)  |
| 31-60 dB | 100 (3.6) |

## Dimensions:

| Attenuation (dB) | Dim "A"     |
|------------------|-------------|
| 1 – 30           | 57.2 (2.25) |
| 31 – 60          | 67.4 (2.65) |

**Diameter:** 16.0 (0.63).

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

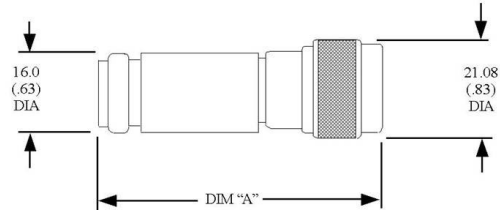


# Fixed Coaxial Attenuator

# WA1W & WA2W

WA1W/6: DC – 6.0 GHz  
 WA1W: DC – 12.4 GHz  
 WA2W: DC – 18.0 GHz

**2 WATTS**



## Features

Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1W/6: DC - 6 GHz.  
 WA1W: DC - 12.4 GHz.  
 WA2W: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** <0.005 dB/dB/W. Bidirectional in power.

**Power Rating:** 2 W average. Maximum rated average power to 25°C ambient temperature, de-rated linearly to 0.5 W at 125°C. 1 kW peak (5 µsec pulse width; 0.1% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors, gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |      |
|------------------|---------------|------|------|
|                  | WA1W/6        | WA1W | WA2W |
| 1 to 2           | 0.4           | 0.4  | 0.5  |
| 3 to 9           | 0.3           | 0.3  | 0.3  |
| 10 to 20         | 0.5           | 0.75 | 0.5  |
| 21 to 40         | 0.75          | 1.0  | 1.0  |
| 41 to 50         | 0.75          | 1.0  | 1.25 |
| 51 to 60         | 1.0           | N/A  | 1.5  |

## Maximum VSWR:

| Frequency (GHz) | VSWR   |      |      |
|-----------------|--------|------|------|
|                 | WA1W/6 | WA1W | WA2W |
| DC - 4.0        | 1.15   | 1.15 | 1.15 |
| 4.0 - 8.0       | 1.2    | 1.2  | 1.2  |
| 8.0 - 12.4      | N/A    | 1.25 | 1.25 |
| 12.4 - 18.0     | N/A    | N/A  | 1.4  |

## Weight (All Models):

01-30 dB      70 (2.6)  
 31-60 dB      100 (3.6)

## Dimensions:

| Attenuation (dB) | Dim "A"     |
|------------------|-------------|
| 1 – 30           | 57.2 (2.25) |
| 31 – 60          | 67.4 (2.65) |

**Diameter:** 16.0 (0.63).

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA3 & WA4

**WA3/6:** DC – 6 GHz

**WA3:** DC – 12.4 GHz

**WA4:** DC – 18.0 GHz

**2 WATTS**



## Features

Type SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA3/6: DC - 6 GHz.  
WA3: DC - 12.4 GHz.  
WA4: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

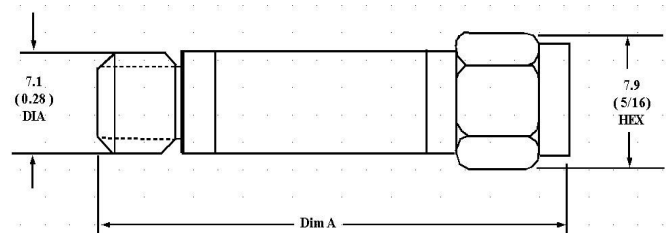
**Power Rating:** **2 W** average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at 125°C, **500 W** peak (5 µsec pulse width, 0.2% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors, gold plated beryllium copper female and male contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.



Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |     |
|------------------|---------------|-----|
|                  | WA3(/6)       | WA4 |
| 1 - 6            | 0.3           | 0.3 |
| 7 - 12           | 0.3           | 0.5 |
| 13 - 20          | 0.5           | 0.7 |
| 21 - 40          | 0.75          | 1.0 |
| 41 - 60          | 1.0           | 1.5 |

Maximum VSWR:

| Frequency (GHz) | VSWR    |      |
|-----------------|---------|------|
|                 | WA3(/6) | WA4  |
| DC - 4.0        | 1.15    | 1.15 |
| 4.0 - 6.0       | 1.2     | 1.2  |
| 8.0 - 12.4      | 1.25    | 1.25 |
| 12.4 - 18.0     | N/A     | 1.35 |

Dimensions:

| Attenuation (dB) | All Models       |           |
|------------------|------------------|-----------|
|                  | Length (Dim "A") | Weight    |
| 1 - 12           | 31.2 (1.23)      | 3.9 (.14) |
| 13 - 20          | 33.3 (1.31)      | 4.3 (.15) |
| 21 - 30          | 35.3 (1.41)      | 4.9 (.17) |
| 31 - 60          | 43.4 (1.71)      | 6.5 (.23) |

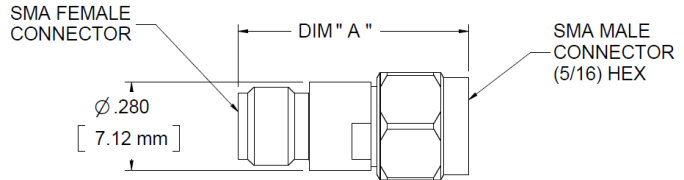
Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options

# Fixed Coaxial Attenuator

# WA3C & WA4C

**WA3C/6:** DC – 6 GHz  
**WA3C:** DC – 12.4 GHz  
**WA4C:** DC – 18.0 GHz

**2 WATTS**



## Features

SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

*Our most compact 2W model.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA3C/6: DC - 6 GHz.  
WA3C: DC - 12.4 GHz.  
WA4C: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** **2 W** average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at 125°C, **250 W** peak (5µsec pulse width, 0.4% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors, gold plated beryllium copper female and male contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA3C(/6)      | WA4C |
| 0 - 6            | 0.3           | 0.3  |
| 7 - 20           | 0.5           | 0.5  |
| 21 - 30          | 0.75          | 0.75 |

## Maximum VSWR:

| Frequency (GHz) | VSWR     |      |
|-----------------|----------|------|
|                 | WA3C(/6) | WA4C |
| DC - 4.0        | 1.15     | 1.15 |
| 4.0 - 8.0       | 1.2      | 1.2  |
| 8.0 - 12.4      | 1.25     | 1.25 |
| 12.4 - 18.0     | N/A      | 1.35 |

## Weight (Both Models):

|            |            |
|------------|------------|
| 1 - 12 dB  | 3.9 (0.14) |
| 13 - 30 dB | 4.3 (0.15) |

## Dimensions:

| Attenuation (dB) | Dim "A"     |
|------------------|-------------|
| 1 - 12           | 19.3 (0.76) |
| 13 - 30          | 22.6 (0.89) |

**Diameter:** 7.1 (0.28).

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

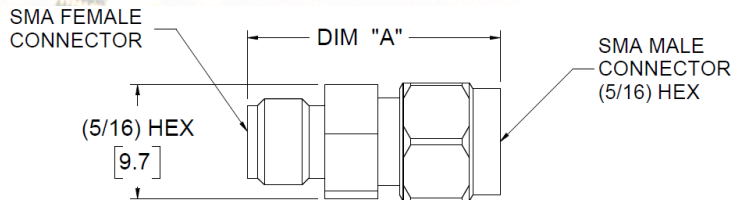
# WA3CH & WA4CH

**WA3CH/6:** DC – 6 GHz

**WA3CH:** DC – 12.4 GHz

**WA4CH:** DC – 18.0 GHz

**2 WATTS**



## Features

Hex body variant of our most compact 2W model.

Type SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA3CH/6: DC - 6 GHz.  
WA3CH: DC - 12.4 GHz.  
WA4CH: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 2 W average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at 125 °C, 250 W peak (5µsec pulse width, 0.4% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors, gold plated beryllium copper female and male contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |       |
|------------------|---------------|-------|
|                  | WA3CH(/6)     | WA4CH |
| 0 - 6            | 0.3           | 0.3   |
| 7 - 20           | 0.5           | 0.5   |
| 21 - 30          | 0.75          | 0.75  |

## Maximum VSWR:

| Frequency (GHz) | VSWR      |       |
|-----------------|-----------|-------|
|                 | WA3CH(/6) | WA4CH |
| DC - 4.0        | 1.15      | 1.15  |
| 4.0 - 8.0       | 1.2       | 1.2   |
| 8.0 - 12.4      | 1.25      | 1.25  |
| 12.4 - 18.0     | N/A       | 1.35  |

## Weight (Both Models):

1 - 12 dB      3.9 gm/ 0.14 oz.  
13 - 30 dB     4.3 gm/ 0.15 oz.

## Dimensions:

| Attenuation (dB) | Dim "A"     |
|------------------|-------------|
| 1 - 12           | 19.3 (0.76) |
| 13 - 30          | 22.6 (0.89) |

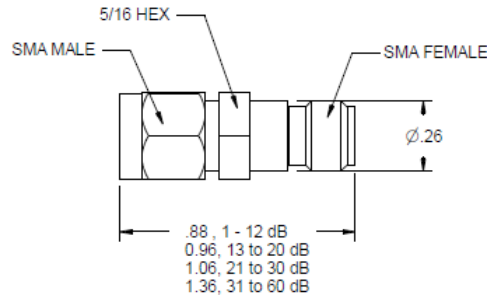
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA3H & WA4H

WA3H/6: DC – 6 GHz  
WA3H: DC – 12.4 GHz  
WA4H: DC – 18.0 GHz

2 WATTS



## Features

Hex body.

Type SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA3H/6: DC - 6 GHz.  
WA3H: DC - 12.4 GHz.  
WA4H: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 2 W average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at +125° C, 500 W peak (5 µsec pulse width, 0.2% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors, gold plated beryllium copper female and male contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA3H(/6)      | WA4H |
| 0 - 12           | 0.3           | 0.5  |
| 13 - 20          | 0.5           | 0.7  |
| 21 - 40          | 0.75          | 1.0  |
| 41 - 60          | 1.0           | 1.5  |

## Maximum VSWR:

| Frequency (GHz) | VSWR     |      |
|-----------------|----------|------|
|                 | WA3H(/6) | WA4H |
| DC - 4.0        | 1.15     | 1.15 |
| 4.0 - 8.0       | 1.2      | 1.2  |
| 8.0 - 12.4      | 1.25     | 1.25 |
| 12.4 - 18.0     | N/A      | 1.35 |

## Dimensions:

| Attenuation (dB) | All Models  |           |
|------------------|-------------|-----------|
|                  | Length      | Weight    |
| 1 - 12           | 22.4 (.88)  | 3.9 (.14) |
| 13 - 20          | 24.4 (.96)  | 4.3 (.15) |
| 21 - 30          | 27.0 (1.06) | 4.9 (.17) |
| 31 - 60          | 34.6 (1.36) | 6.5 (.23) |

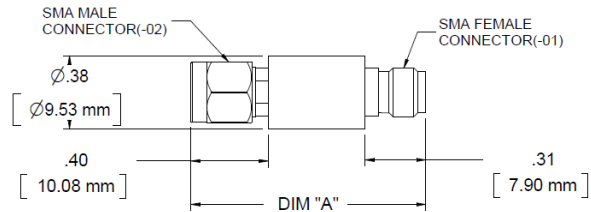
Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Fixed Coaxial Attenuator

# WA3M & WA4M

WA3M/6: DC – 6 GHz  
 WA3M: DC – 12.4 GHz  
 WA4M: DC – 18.0 GHz

**2 WATTS**



## Features

Type SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA3M/6: DC - 6 GHz.  
 WA3M: DC - 12.4 GHz.  
 WA4M: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
 Bidirectional in power.

**Power Rating:** 2 W average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at 125° C, 500 W peak (5µsec pulse width, 0.2% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts, stainless steel male contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA3M(/6)      | WA4M |
| 0 - 12           | 0.3           | 0.5  |
| 13 - 20          | 0.5           | 0.7  |
| 21 - 40          | 0.75          | 1.0  |
| 41 - 60          | 1.0           | 1.5  |

## Maximum VSWR:

| Frequency (GHz) | VSWR     |      |
|-----------------|----------|------|
|                 | WA3M(/6) | WA4M |
| DC - 4.0        | 1.15     | 1.15 |
| 4.0 - 8.0       | 1.2      | 1.2  |
| 8.0 - 12.4      | 1.25     | 1.25 |
| 12.4 - 18.0     | N/A      | 1.35 |

## Dimensions and Weight:

| Attenuation (dB) | All Models       |           |            |
|------------------|------------------|-----------|------------|
|                  | Length (Dim "A") | Diameter  | Weight     |
| 1 - 30           | 30.5 (1.2)       | 9.1 (.36) | 5.3 (0.19) |
| 31 - 60          | 38.1 (1.5)       | 9.1 (.36) | 6.5 (0.23) |

Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Fixed Coaxial Attenuator

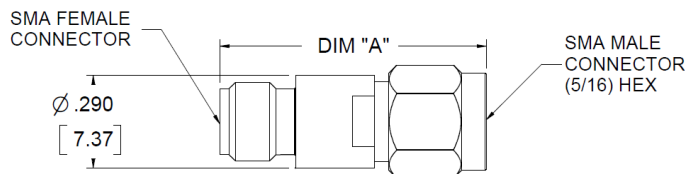
# WA3T & WA4T

WA3T/6: DC – 6 GHz

WA3T: DC – 12.4 GHz

WA4T: DC – 18.0 GHz

**2 WATTS**



## Features

Type SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA3T/6: DC - 6 GHz.  
WA3T: DC - 12.4 GHz.  
WA4T: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** **2 W** average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at 125° C, **500 W** peak (5µsec pulse width, 0.2% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors, gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA3T(/6)      | WA4T |
| 0 - 12           | 0.3           | 0.5  |
| 13 - 20          | 0.5           | 0.7  |
| 21 - 40          | 0.75          | 1.0  |
| 41 - 60          | 1.0           | 1.5  |

## Maximum VSWR:

| Frequency (GHz) | VSWR     |      |
|-----------------|----------|------|
|                 | WA3T(/6) | WA4T |
| DC - 4.0        | 1.15     | 1.15 |
| 4.0 - 8.0       | 1.2      | 1.2  |
| 8.0 - 12.4      | 1.25     | 1.25 |
| 12.4 - 18.0     | N/A      | 1.35 |

## Dimensions:

| Attenuation (dB) | All Models       |           |
|------------------|------------------|-----------|
|                  | Length (Dim "A") | Weight    |
| 1 - 12           | 22.4 (.88)       | 4.0 (.14) |
| 13 - 20          | 24.4 (.96)       | 4.5 (.16) |
| 21 - 30          | 26.9 (1.06)      | 5.0 (.18) |
| 31 - 60          | 34.5 (1.36)      | 6.5 (.23) |

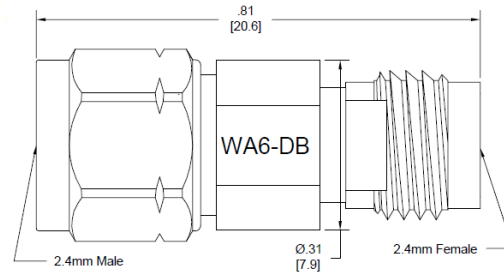
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

WA5, WA6 & WA6A

WA5 - DC - 50 GHz  
WA6 - DC - 50 GHz  
WA6A - DC - 50 GHz

0.5 WATT  
1 WATT  
2 WATTS



## Features

2.4 mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 50 GHz.

**Nominal dB Values:** 0 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W:  
Bidirectional in power.

**Power Rating:** 0.5 W (WA5), 1 W (WA6) or 2 W (WA6A) average to 25°C ambient temperature, de-rated linearly to 0.1W at 125° C, 175 W peak (2 µsec pulse width, 0.2% duty cycle).

**Temperature Range:** -65°C to +125°C.

**Temperature Coefficient:** <0.0006 dB/dB/°C

**Construction:** Passivated stainless steel body and connectors, gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |               |             |
|------------------|---------------|---------------|-------------|
|                  | DC - 26.5 GHz | 26.5 - 40 GHz | 40 - 50 GHz |
| 3, 6, 10         | 0.5           | 1.0           | 1.5         |
| 20               | 0.8           | 1.25          | 2.0         |
| 30               | 1.0           | 1.5           | 2.0         |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 26.5       | 1.35 |
| 26.5 - 40       | 1.6  |
| 40 - 50         | 1.75 |

## Dimensions:

Body Diameter: 7.9 (0.31)  
Weight: 4.5 (0.16)  
Length: 20.6 (0.81)

## \* Space Qualified Version Available \*

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

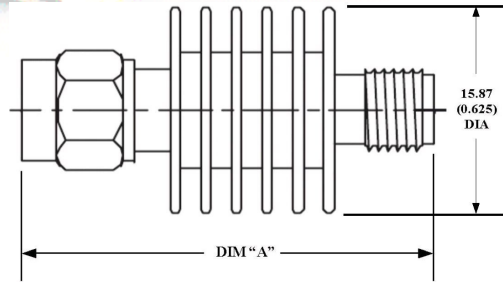


# Fixed Coaxial Attenuator

# WA7

**WA7/6:** DC – 6 GHz  
**WA7/12:** DC – 12.4 GHz  
**WA7:** DC – 18.0 GHz

**5 WATTS**



## Features

Type SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

*Our compact design allows for one of the lowest size to power ratios available.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA7/6: DC - 6 GHz.  
WA7/12: DC - 12.4 GHz.  
WA7: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 5 W average to 25°C ambient temperature, de-rated linearly to 0.5W at 125°C, 500 W peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | All models    |
| 1 - 2            | 0.5           |
| 3 - 9            | 0.3           |
| 10 - 20          | 0.5           |
| 21 - 40          | 1.0           |
| 50               | 1.25          |
| 60               | 1.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR  |        |      |
|-----------------|-------|--------|------|
|                 | WA7/6 | WA7/12 | WA7  |
| DC - 4.0        | 1.15  | 1.15   | 1.15 |
| 4.0 - 6.0       | 1.2   | 1.2    | 1.2  |
| 6.0 - 8.0       | N/A   | 1.2    | 1.2  |
| 8.0 - 12.4      | N/A   | 1.25   | 1.25 |
| 12.4 - 18.0     | N/A   | N/A    | 1.4  |

## Dimensions:

| Attenuation (dB) | WA7              |           |
|------------------|------------------|-----------|
|                  | Length (Dim "A") | Weight    |
| 1 - 30           | 30.5 (1.2)       | 9.3 (.33) |
| 31 - 60          | 38.6 (1.52)      | 13 (.46)  |

**Diameter:** 15.87 (0.625)

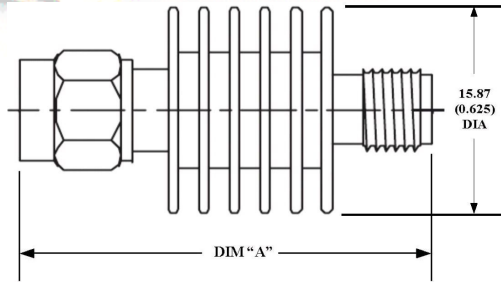
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA7A

WA7A/6: DC – 6 GHz  
 WA7A/12: DC – 12.4 GHz  
 WA7A: DC – 18.0 GHz

**5 WATTS**



## Features

Type SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

*Our compact design allows for one of the lowest size to power ratios available.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA7A/6: DC - 6 GHz.  
 WA7A/12: DC - 12.4 GHz.  
 WA7A: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
 Bidirectional in power.

**Power Rating:** 5 W average to 25°C ambient temperature, de-rated linearly to 0.5W at 125° C, 500 W peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | All models    |
| 1 - 6            | 0.3           |
| 7 - 30           | 0.5           |
| 40               | 1.0           |
| 50               | 1.25          |
| 60               | 1.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR   |         |      |
|-----------------|--------|---------|------|
|                 | WA7A/6 | WA7A/12 | WA7a |
| DC - 6.0        | 1.15   | 1.15    | 1.15 |
| 6.0 - 8.0       | N/A    | 1.15    | 1.15 |
| 8.0 - 12.4      | N/A    | 1.25    | 1.25 |
| 12.4 - 18.0     | N/A    | N/A     | 1.25 |

## Dimensions:

| Attenuation (dB) | WA7              |           |
|------------------|------------------|-----------|
|                  | Length (Dim "A") | Weight    |
| 1 - 30           | 30.5 (1.2)       | 9.3 (.33) |
| 31 - 60          | 38.6 (1.52)      | 13 (.46)  |

**Diameter:** 15.87 (0.625)

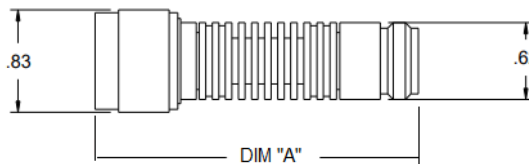
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA8

**WA8/6:** DC – 6 GHz  
**WA8/12:** DC – 12.4 GHz  
**WA8:** DC – 18.0 GHz

**10 WATTS**



## Features

Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA8/6: DC - 6 GHz.  
WA8/12: DC - 12.4 GHz.  
WA8: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 10 W average to 25°C ambient temperature, 0W at +125° C, 1 kW peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA8           |
| 1 - 2            | 0.5           |
| 3 - 9            | 0.3           |
| 10 - 20          | 0.5           |
| 21 - 40          | 1.0           |
| 50               | 1.25          |
| 60               | 1.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR  |        |      |
|-----------------|-------|--------|------|
|                 | WA8/6 | WA8/12 | WA8  |
| DC - 6.0        | 1.2   | 1.2    | 1.2  |
| 6.0 - 8.0       | N/A   | 1.2    | 1.2  |
| 8.0 - 12.4      | N/A   | 1.3    | 1.3  |
| 12.4 - 18.0     | N/A   | N/A    | 1.35 |

**Length (Dim "A"):** 67.30 (2.62)

**Weight:** 2.6 (0.074)

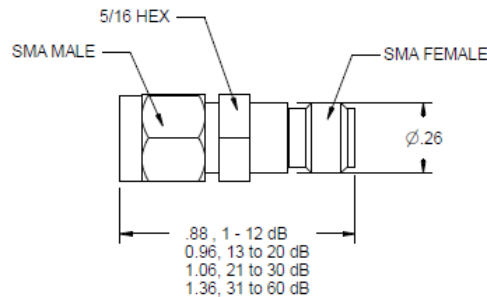
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA9

DC - 26.5 GHz

2 WATTS



## Features

Type SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

Usable to 30 GHz.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 26.5 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 2 W average to 25°C ambient temperature, de-rated linearly to 0.5W at 125°C, 500 W peak (5 μsec pulse width, 0.2% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors, gold plated beryllium copper female and male contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

**Calibrated Attenuator Set (WAS-19):** Model WA9 is also available in a Calibrated Attenuator Set (3, 6, 10, and 20 dB). Refer to Attenuator Set data sheets for specifications.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
| 1 - 3            | 0.5           |
| 4 - 6            | 0.6           |
| 7 - 10           | 0.8           |
| 11 - 30          | 1.0           |
| 40, 50, 60       | 2.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 4.0        | 1.15 |
| 4.0 - 8.0       | 1.2  |
| 8.0 - 12.4      | 1.25 |
| 12.4 - 18.0     | 1.35 |
| 18.0 - 26.5     | 1.5  |

## Dimensions:

| Attenuation (dB) | All Models  |           |
|------------------|-------------|-----------|
|                  | Length      | Weight    |
| 1 - 12           | 22.4 (.88)  | 3.9 (.14) |
| 13 - 20          | 24.4 (.96)  | 4.3 (.15) |
| 21 - 30          | 27.0 (1.06) | 4.9 (.17) |
| 31 - 60          | 34.6 (1.36) | 6.5 (.23) |

Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Fixed Coaxial Attenuator

# WA17

DC - 18.0 GHz

5 WATTS



## Features

Precision 7mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Meets or exceeds requirements of IEEE STD 287 and mates with all conforming connectors

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 5 W maximum rated average power to 25°C ambient temperature, de-rated linearly to 0.5 W at 125°C. , 1 kW peak (5 µsec pulse width, 0.25% duty cycle)

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHs Compliant.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
| 1 - 9            | 0.3           |
| 10 - 20          | 0.5           |
| 21 - 50          | 0.75          |
| 51 - 60          | 1.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 4.0        | 1.10 |
| 4.0 - 12.4      | 1.15 |
| 12.4 - 18.0     | 1.2  |

## Dimensions:

| Attenuation (dB) | All Models  |           |
|------------------|-------------|-----------|
|                  | Length      | Weight    |
| 1 - 30           | 51.0 (2)    | 3.9 (.14) |
| 30 - 60          | 58.0 (2.28) | 4.3 (.15) |

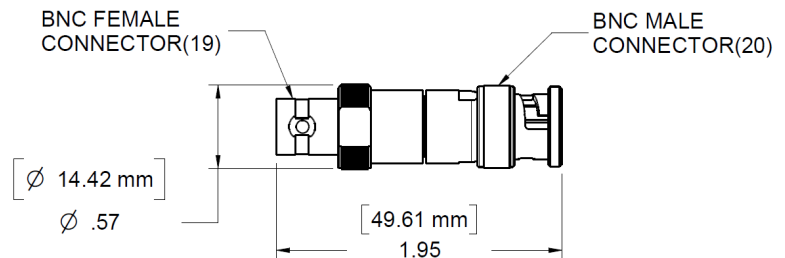
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA18

DC - 6.0 GHz

2 WATTS



## Features

BNC connectors mate non-destructively with MIL-PRF-39012. Broad frequency range, optimized for wireless applications.  
*Usable to 12 GHz.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 6.0 GHz  
(Usable to 12.0 GHz)

**Nominal dB Values:** 0 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 2 W average to 25°C ambient temperature, de-rated linearly to 0 W at 125° C, 1 kW peak (5 µsec pulse width, 0.1% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body with nickel plated brass connectors. Gold plated beryllium copper female and stainless steel male contacts. RoHs Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
| 1 - 6            | 0.4           |
| 7 - 30           | 0.9           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 4.0        | 1.25 |
| 4.0 - 6.0       | 1.3  |

## Dimensions:

Diameter: 14.2 (0.57)  
Weight: 32.3 (1.14)  
Length: 49.6 (1.95)

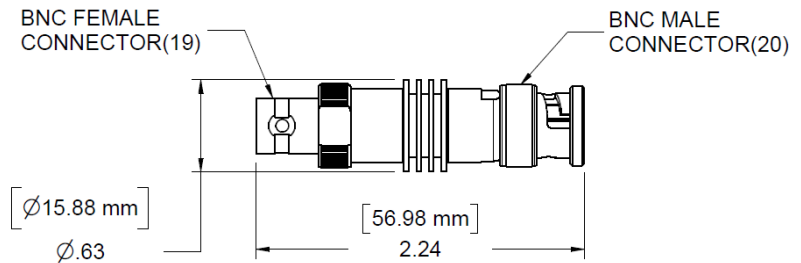
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA19

DC - 6.0 GHz

5 WATTS



## Features

BNC connectors mate non-destructively with MIL-PRF-39012. Broad frequency range, optimized for wireless applications.  
*Usable to 12 GHz.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 6.0 GHz  
(Usable to 12.0 GHz)

**Nominal dB Values:** 0 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 5 W average to 25°C ambient temperature, de-rated linearly to 0.5W at 125°C, 1 kW peak (5  $\mu$ sec pulse width, 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black anodized aluminum body with nickel plated brass connectors. Gold plated beryllium copper female, stainless steel male contacts. RoHs Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy $\pm$ dB |
|------------------|-------------------|
| 1 - 6            | 0.4               |
| 7 - 30           | 0.9               |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 4.0        | 1.25 |
| 4.0 - 6.0       | 1.3  |

## Dimensions and Weight:

Diameter: 15.88 (0.63)  
Weight: 34.0 (1.2)  
Length: 56.98 (2.24)

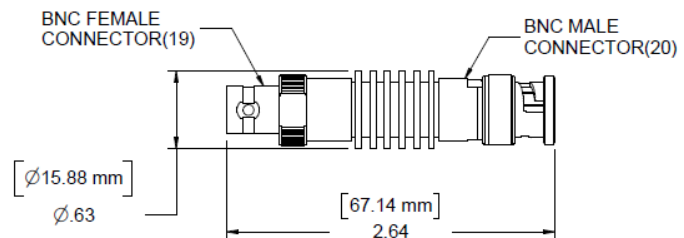
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA20

DC - 6.0 GHz

10 WATTS



## Features

BNC connectors mate non-destructively with MIL-PRF-39012. Broad frequency range, optimized for wireless applications.  
*Usable to 12 GHz.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 6.0 GHz  
(Usable to 12.0 GHz)

**Nominal dB Values:** 0 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 10 W average to 25°C ambient temperature, de-rated linearly to 0.5W at 125°C, 1 kW peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black anodized aluminum body with nickel plated brass connectors. Gold plated beryllium copper female and stainless steel male contacts.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
| 1 - 6            | 0.4           |
| 7 - 30           | 0.9           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 4.0        | 1.25 |
| 4.0 - 6.0       | 1.3  |

## Dimensions:

Diameter: 15.88 (0.63)  
Weight: 39.7 (1.4)  
Length: 67.14 (2.64)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

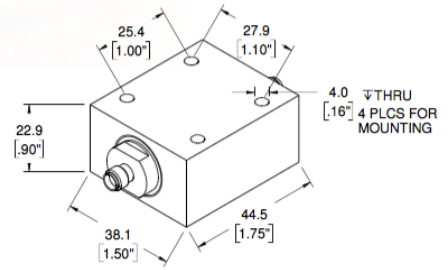
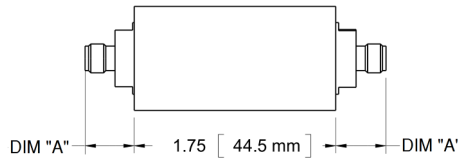


# Fixed Coaxial Attenuator

# WA21 & WA22

**WA21: DC – 4 GHz**  
**WA22: DC – 8.5 GHz**

**25 WATTS**



## Features

Low-profile, mountable attenuator. Type N, TNC and SMA stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA21: DC - 4 GHz.  
 WA22: DC - 8.5 GHz.

**Nominal dB Values:** WA21: 1 - 40 dB  
 WA22: 1 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
 Bidirectional in power.

**Power Rating:** 25 W average with case temperature held to 100°C using conductive heat sink. 5 kW peak (5 µsec pulse width, 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA21          | WA22 |
| 1 - 2            | 0.4           | 0.8  |
| 3 - 20           | 0.3           | 0.6  |
| 21 - 30          | 0.6           | 1.0  |
| 31 - 40          | 0.8           | 1.5  |

## Maximum VSWR:

| Frequency (GHz) | VSWR |      |
|-----------------|------|------|
|                 | WA21 | WA22 |
| DC - 4.0        | 1.2  | 1.2  |
| 4.0 - 8.5       | N/A  | 1.3  |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | SMA F -01            |
| SMA M -02               | 10.9 (.43)           |
| N-Type F -03            | 14.9 (.59)           |
| N-Type M -04            | 22.7 (.89)           |
| TNC F -05               | 14.4 (.57)           |
| TNC M -06               | 17.7 (.70)           |

**Weight:** 170 (6.0)  
**Height:** 22.9 (0.9)  
**Width:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration.*

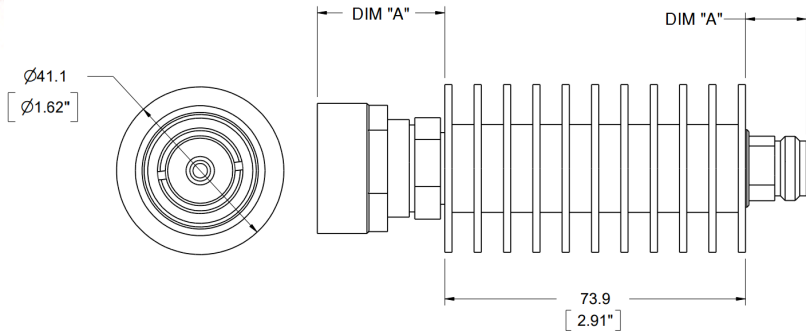
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation attribute.

# Fixed Coaxial Attenuator

# WA23 & WA24

**WA 23: DC - 4 GHz**  
**WA 24: DC - 8.5 GHz**

**50 WATTS**



## Features

Type N, SMA, TNC or DIN 7/16 stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA23: DC - 4 GHz  
 WA24: DC - 8.5 GHz

**Nominal dB Values:** 1 - 40 dB  
 (50 dB available in a unidirectional variant)

**Power Coefficient:** < 0.0005 dB/dB/W;  
 Bidirectional in power.

**Power Rating:** 50 W average to 25°C ambient temperature, de-rated linearly to 5 watts at 125°C. 5 kW peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA23          | WA24 |
| 1 - 2            | 0.5           | 0.75 |
| 3 - 20           | 0.4           | 0.75 |
| 21 - 30          | 0.6           | 1.0  |
| 31 - 40          | 0.8           | 1.2  |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 4.0        | 1.2  |
| 4.0 - 8.5       | 1.3  |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 280 (9.88)  
**Diameter:** 41.1 (1.62)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

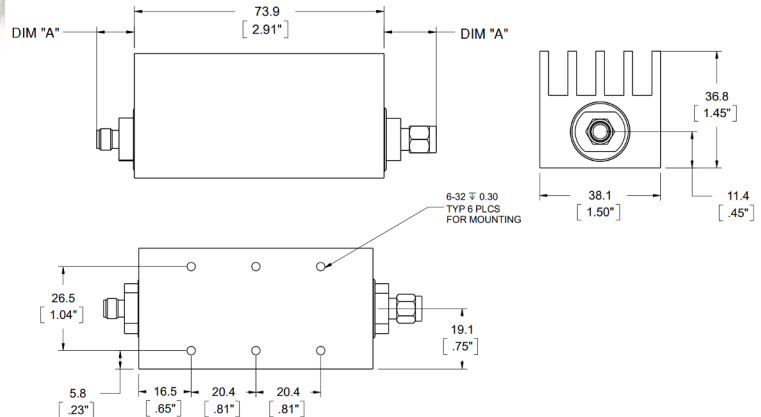
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

# Fixed Coaxial Attenuator

# WA23B & WA24B

**WA23B: DC - 4 GHz**  
**WA24B: DC - 8.5 GHz**

**50 WATTS**



## Features

Type N, SMA, or TNC stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Passive convection cooling, flat base with mounting holes.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA 23B: DC - 4GHz  
 WA 24B: DC - 8.5GHz

**Nominal dB Values:** 3 - 40 dB  
 (50 dB available in a unidirectional variant)

**Power Coefficient:** < 0.0005 dB/dB/W;  
 Bidirectional in power.

**Power Rating:** 50 W average to 25°C ambient temperature, de-rated linearly to 2.5 watts at 125° C. 5 kW peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |       |
|------------------|---------------|-------|
|                  | WA23B         | WA24B |
| 1 - 2            | 0.5           | 0.75  |
| 3 - 20           | 0.4           | 0.75  |
| 21 - 30          | 0.6           | 1.0   |
| 31 - 40          | 0.8           | 1.2   |

## Maximum VSWR:

| Frequency (GHz) | VSWR  |       |
|-----------------|-------|-------|
|                 | WA23B | WA24B |
| DC - 4.0        | 1.2   | 1.2   |
| 4.0 - 8.5       | N/A   | 1.3   |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

**Weight:** 280 (9.88)  
**Height:** 36.8 (1.45)  
**Width:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation attribute.

# Fixed Coaxial Attenuator

# WA26 & WA27

WA 26: DC - 4.0 GHz  
WA 27: DC - 8.5 GHz

100 WATTS



## Features

Type N, SMA, TNC, or 7/16 DIN stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA26: DC - 4.0 GHz  
WA27: DC - 8.5 GHz

**Nominal dB Values:** 3 - 40 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power. (40 dB unidirectional in power)

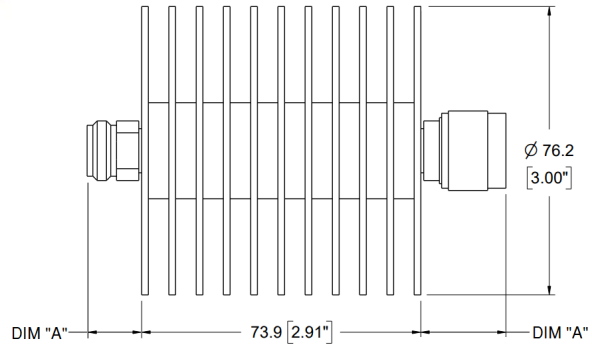
**Power Rating:** 100 W average to 25°C ambient temperature, de-rated linearly to 2.5 watts at 125° C, 5 KW peak (5µsec pulse width, 1% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.



## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
| 3 - 20           | 0.75          |
| 21 - 30          | 1.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 4.0        | 1.25 |
| 4.0 - 8.5       | 1.35 |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** .55kg (19.2)  
**Diameter:** 76.2 (3.0)

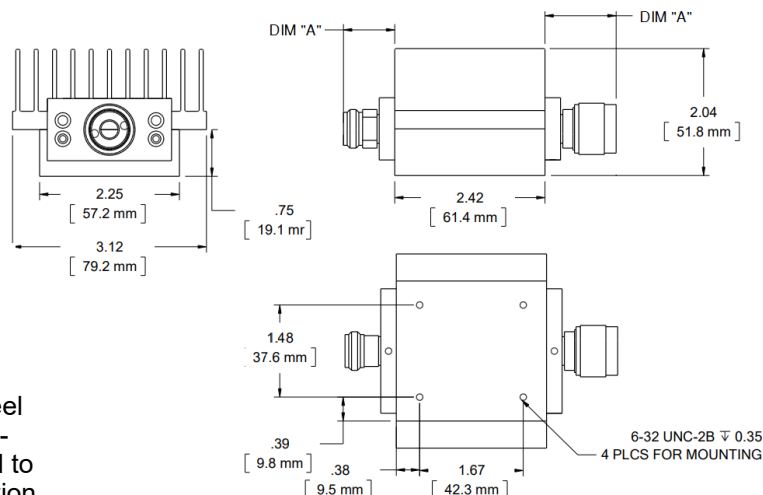
Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Fixed Coaxial Attenuator

# WA29

**WA 29/4: DC - 4.0 GHz**  
**WA 29: DC - 8.5 GHz**

**75 WATTS**



## Features

Type N, SMA, TNC, or 7/16 DIN stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Passive cooling, flat base with mounting holes.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA29/4: DC - 4.0 GHz  
 WA29: DC - 8.5 GHz

**Nominal dB Values:** 3 - 40 dB  
 (50 dB available in a unidirectional variant)

**Power Coefficient:** < 0.005 dB/dB/W;  
 Bidirectional in power.

**Power Rating:** 75 W average to 25°C ambient temperature, de-rated linearly to 5 W at +125°C, 5 KW peak (5µsec pulse width, 0.75% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy $\pm$ dB |      |
|------------------|-------------------|------|
|                  | WA29/4            | WA29 |
| 1 - 2            | 0.5               | 0.75 |
| 3 - 20           | 0.4               | 0.75 |
| 21 - 30          | 0.6               | 1.0  |
| 31 - 40          | 0.8               | 1.2  |

## Maximum VSWR:

| Frequency (GHz) | VSWR   |      |
|-----------------|--------|------|
|                 | WA29/4 | WA29 |
| DC - 4.0        | 1.2    | 1.2  |
| 4.0 - 8.5       | N/A    | 1.3  |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 17.7 (.70)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 19.2 (.55)  
**Height:** 51.8  
 (2.04)  
**Width:** 79.2 (3.12)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# WEINSCHEL ASSOCIATES

TEL: 877.948.8342 / 301.963.4630 ♦ Fax: 301.963.8640

WEB: <http://www.WeinschelAssociates.com>

EMAIL: [sales@WeinschelAssociates.com](mailto:sales@WeinschelAssociates.com)

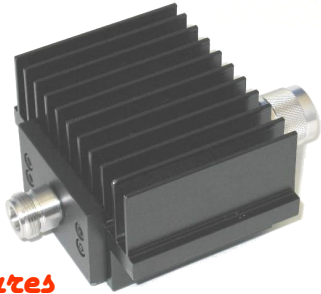


# Fixed Coaxial Attenuator

# WA30 & WA31

**WA 30: DC - 4.0 GHz**  
**WA 31: DC - 8.5 GHz**

**100 WATTS**



## Features

Type N, SMA, or 7/16 DIN stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Passive cooling, flat base with mounting holes.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA30: DC - 4.0 GHz  
 WA31: DC - 8.5 GHz

**Nominal dB Values:** 3 - 30 dB  
 (40 dB and 50 dB WA30 available in a unidirectional variant)

**Power Coefficient:** < 0.005 dB/dB/W;  
 Bidirectional in power.

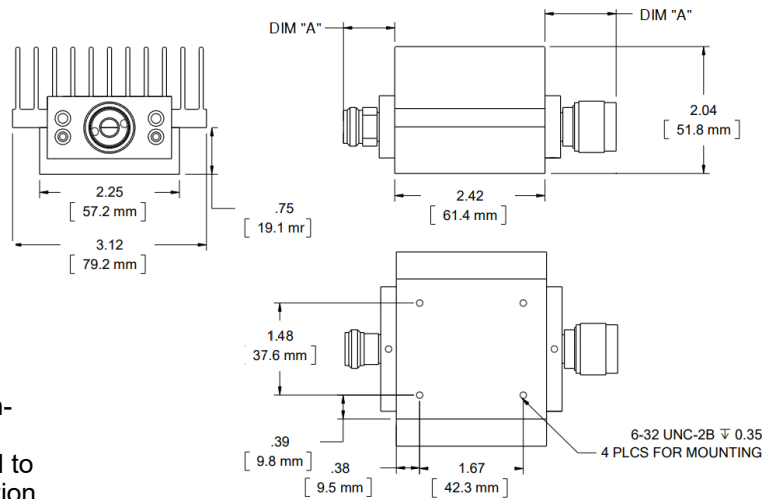
**Power Rating:** 100 W average to 25°C ambient temperature, de-rated linearly to 5 W at +125°C, 5 KW peak (5 µsec pulse width, 1.0% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.



## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA30          | WA31 |
| 1 - 2            | 0.5           | 0.75 |
| 3 - 20           | 0.4           | 0.75 |
| 21 - 30          | 0.6           | 1.0  |
| 31 - 40          | 0.8           | 1.2  |

## Maximum VSWR:

| Frequency (GHz) | VSWR |      |
|-----------------|------|------|
|                 | WA30 | WA31 |
| DC - 4.0        | 1.2  | 1.2  |
| 4.0 - 8.5       | N/A  | 1.3  |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.4 (.57)    |
| N-Type M -04            | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 19.2 (.55)  
**Height:** 51.8 (2.04)  
**Width:** 79.2 (3.12)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

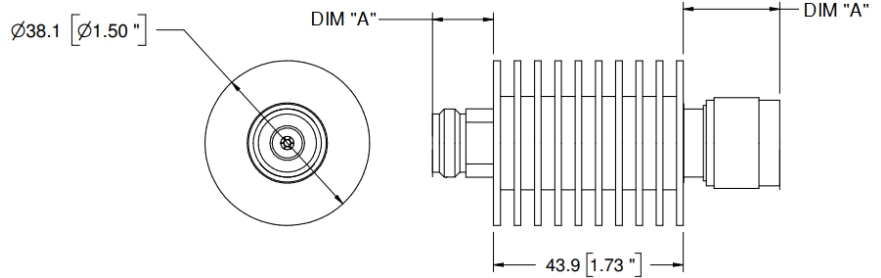
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

# Fixed Coaxial Attenuator

# WA33 & WA34

**WA 34: DC - 4.0 GHz**  
**WA 33: DC - 8.5 GHz**

**25 WATTS**



## Features

Type N, SMA, or 7/16 DIN stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA34: DC - 4.0 GHz  
 WA33: DC - 8.5 GHz

**Nominal dB Values:** 1 - 30, 40 dB (WA34)

**Power Coefficient:** < 0.005 dB/dB/W;  
 Bidirectional in power.

**Power Rating:** **Power Rating: 25 W** average to 25°C ambient temperature, de-rated linearly to 2.5 watts 125° C, **5 KW** peak (5 µsec pulse width, 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA33          | WA34 |
| 1 - 2            | 0.8           | 0.4  |
| 3 - 20           | 0.6           | 0.3  |
| 21 - 30          | 1.0           | 0.6  |
| 40               | 1.0           | 1.3  |

## Maximum VSWR:

| Frequency (GHz) | VSWR |      |
|-----------------|------|------|
|                 | WA33 | WA34 |
| DC - 4.0        | 1.2  | 1.2  |
| 4.0 - 8.5       | 1.3  | N/A  |

## Dimensions:

| Connector Type (- code) | Length        |  |
|-------------------------|---------------|--|
|                         | Dimension 'A' |  |
| SMA F -01               | 9.8 (0.39)    |  |
| SMA M -02               | 10.9 (.43)    |  |
| N-Type F -03            | 14.9 (.59)    |  |
| N-Type M -04            | 22.7 (.89)    |  |
| DIN 7/16 F -07          | 30.5 (1.2)    |  |
| DIN 7/16 M -08          | 31.8 (1.25)   |  |

**Weight:** .17 (6.0)  
**Diameter:** 22.9 (0.90)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation attribute.

# Fixed Coaxial Attenuator

# WA33B & WA34B

**WA 34B: DC - 4.0 GHz**  
**WA 33B: DC - 8.5 GHz**

**25 WATTS**



## Features

Type N, SMA, or TNC stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Passive cooling, flat base with mounting holes.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA34B: DC - 4.0 GHz  
 WA33B: DC - 8.5 GHz

**Nominal dB Values:** 1 - 30, 40 dB (WA34)

**Power Coefficient:** < 0.005 dB/dB/W;  
 Bidirectional in power.

**Power Rating:** 25 W average to 25°C ambient temperature, de-rated linearly to 2.5 watts 125° C, 5 KW peak (5 µsec pulse width, 0.25% duty cycle).

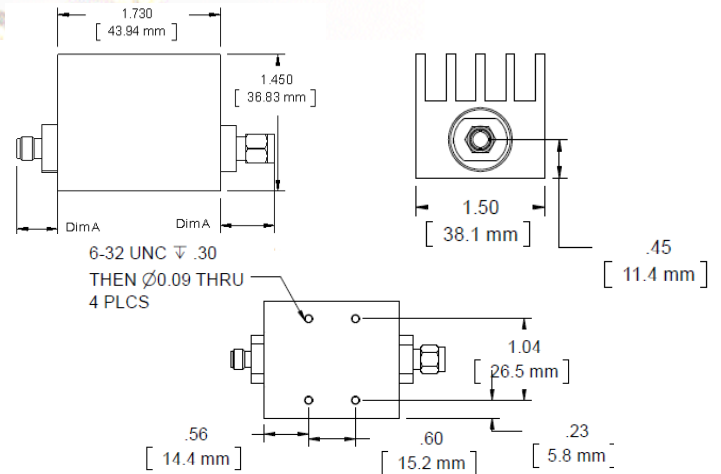
**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.



## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |       |
|------------------|---------------|-------|
|                  | WA33B         | WA34B |
| 1 - 2            | 0.8           | 0.4   |
| 3 - 20           | 0.6           | 0.3   |
| 21 - 30          | 1.0           | 0.6   |
| 40               | 1.0           | 1.3   |

## Maximum VSWR:

| Frequency (GHz) | VSWR  |       |
|-----------------|-------|-------|
|                 | WA33B | WA34B |
| DC - 4.0        | 1.2   | 1.2   |
| 4.0 - 8.5       | 1.3   | N/A   |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | SMA F -01            |
| SMA M -02               | 10.9 (.43)           |
| N-Type F -03            | 14.9 (.59)           |
| N-Type M -04            | 22.7 (.89)           |
| TNC F -05               | 14.4 (.57)           |
| TNC M -06               | 17.7 (.70)           |

**Weight:** .17 (6.06)  
**Height:** 36.8 (1.45)  
**Width:** 38.1 (1.50)  
**Mounting:** 4x 6-32 UNC, 0.09 Thru

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

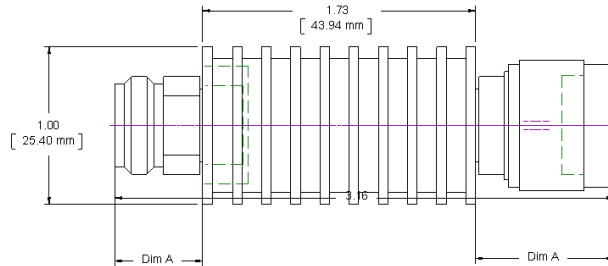


# Fixed Coaxial Attenuator

# WA33L & WA34L

**WA 34L: DC - 4.0 GHz**  
**WA 33L: DC - 8.5 GHz**

**20 WATTS**



## Features

Type N, SMA, TNC, or 7/16 DIN stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA34L: DC - 4.0 GHz  
 WA33L: DC - 8.5 GHz

**Nominal dB Values:** 1 - 30, 40 dB (WA34L)

**Power Coefficient:** < 0.005 dB/dB/W;  
 Bidirectional in power.

**Power Rating:** 20 W average to 25°C ambient temperature, de-rated linearly to 2 watts 125° C, 5 KW peak (5 µsec pulse width, 0.2% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |       |
|------------------|---------------|-------|
|                  | WA33L         | WA34L |
| 1 - 2            | 0.8           | 0.4   |
| 3 - 30           | 1.0           | 0.6   |
| 40               | 1.3           | 1.0   |

## Maximum VSWR:

| Frequency (GHz) | VSWR  |       |
|-----------------|-------|-------|
|                 | WA34L | WA33L |
| DC - 4.0        | 1.2   | 1.2   |
| 4.0 - 8.5       | 1.3   | N/A   |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 17.3 (.68)    |
| TNC M -06               | 14.1 (.56)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** .12 (4.2)  
**Diameter:** 25.4 (1.0)

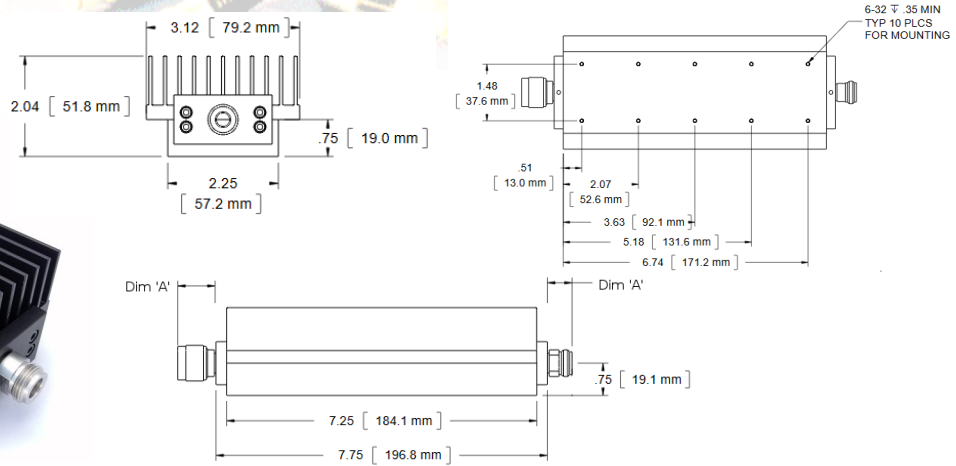
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA35

## WA 35: DC - 8.5 GHz

## 250 WATTS



### Features

Type N or 7/16 DIN stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Passive cooling, flat base with mounting holes.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 8.5 GHz

**Nominal dB Values:** 10 - 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 250 W average to 25°C ambient temperature, de-rated linearly to 25 watts at 125° C, 5 KW peak (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

### Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |               |
|------------------|---------------|---------------|
|                  | DC - 4.0 GHz  | 4.0 - 8.5 GHz |
| 3 - 9            | 1.0           | 1.75          |
| 10 - 30          | 0.75          | 0.75          |
| 40               | 1.0           | 1.0           |

### Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA35 |
| DC - 4.0        | 1.3  |
| 4.0 - 8.5       | 1.45 |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 10.9 (.43)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 1.3 (45.9)  
**Height:** 51.8 (2.04)  
**Width:** 79.2 (3.12)  
**Mounting Holes:** 6-32 TYP 10 PLCS

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

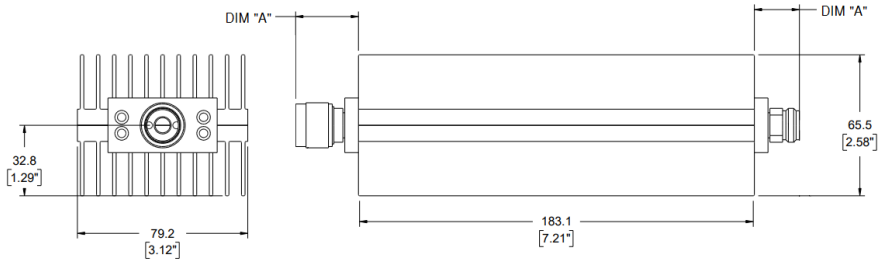
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation

# Fixed Coaxial Attenuator

# WA36

DC - 8.5 GHz

300 WATTS



## Features

Type N or 7/16 DIN stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 8.5 GHz

**Nominal dB Values:** 10 - 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 300 W average to 25°C ambient temperature, de-rated linearly to 25 watts at 125° C, 5 KW peak (5µsec pulse width, 3% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA36          |
| 10 - 30          | 0.75          |
| 40               | 1.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA36 |
| DC - 4.0        | 1.3  |
| 4.0 - 8.5       | 1.45 |

## Dimensions:

| Connector Type (- code) | Length        | Weight: 1.3 (45.9)<br>Height: 51.8 (2.04)<br>Width: 79.2 (3.12) |
|-------------------------|---------------|---|
|                         | Dimension 'A' |   |
| N-Type F -03            | 14.9 (.59)    |   |
| N-Type M -04            | 22.7 (.89)    |   |
| DIN 7/16 F -07          | 30.5 (1.2)    |   |
| DIN 7/16 M -08          | 31.8 (1.25)   |   |

Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

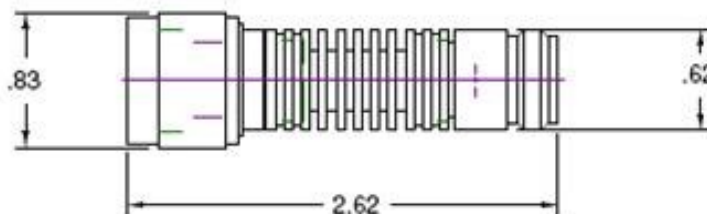
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

# Fixed Coaxial Attenuator

# WA37

DC - 8.5 GHz

10 WATTS



## Features

Type N stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 8.5 GHz

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 10 W average to 25°C ambient temperature, de-rated linearly to 1 watt 125°C, 1 KW peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA37          |
| 1 - 2            | 0.5           |
| 3 dB             | 0.3           |
| 4 - 5            | 0.5           |
| 6 dB             | 0.3           |
| 7 - 19           | 0.5           |
| 20 - 25          | 0.7           |
| 26 - 30          | 0.8           |
| 31 - 60          | 1.2           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA37 |
| DC - 4.0        | 1.15 |
| 4.0 - 8.5       | 1.25 |

## Dimensions and Weight:

Diameter (max): 21.08 (.83)  
Length: 66.55 (2.62)  
Weight (nominal): 90 (3.17)

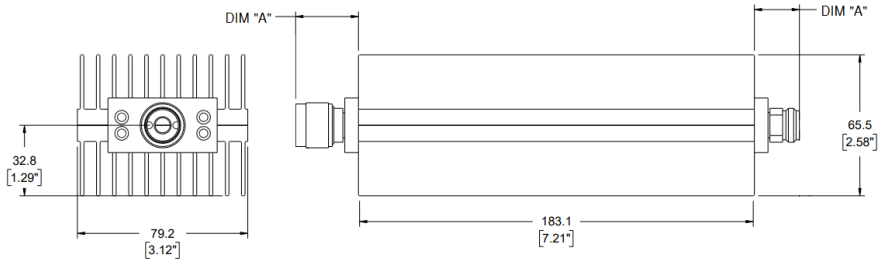
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA38

DC - 5.0 GHz

300 WATTS



## Features

Type N or 7/16 DIN stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 5.0 GHz

**Nominal dB Values:** 10 - 40 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Unidirectional in power.

**Power Rating:** **300 W** average to 25°C ambient temperature, de-rated linearly to 25 watts at 125° C, **10 KW** peak (5µsec pulse width, 1.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA38          |
| 10 - 30          | 0.75          |
| 40               | 1.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA38 |
| DC - 2.0        | 1.25 |
| 2.0 - 5.0       | 1.45 |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 1.3 (45.9)  
**Height:** 51.8 (2.04)  
**Width:** 79.2 (3.12)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

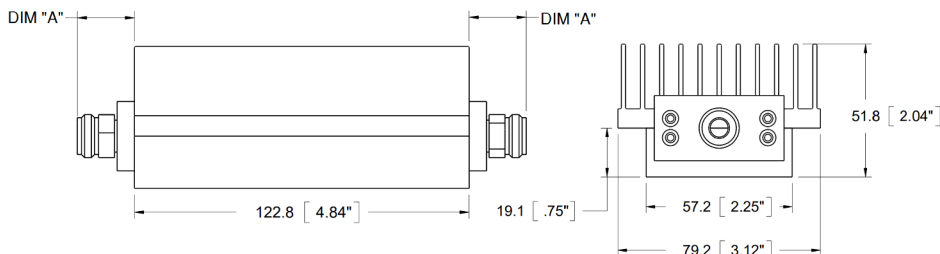
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

# Fixed Coaxial Attenuator

# WA39

## DC – 4.0 GHz

## 150 WATTS



### Features

Type N, DIN 7/16, SMA or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 4.0 GHz.

**Nominal dB Values:** 3 – 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 150 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 15 W at 125° C. 5 kW peak power (5 µsec pulse width, 1.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

### Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA39          |
| 3 - 30           | 0.4           |
| 40               | 0.5           |

**Maximum VSWR:** 1.25

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 0.9 (31.7)  
**Height:** 51.8 (2.04)  
**Width:** 79.2 (3.12)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

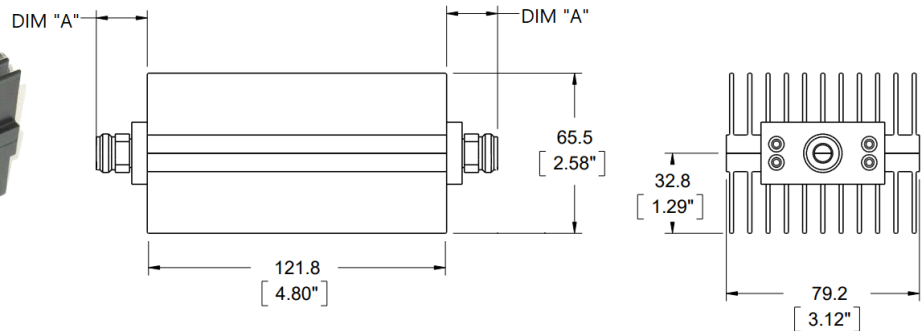
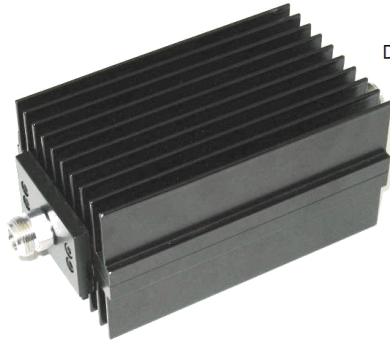
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

# Fixed Coaxial Attenuator

# WA40

DC – 3.0 GHz

150 WATTS



## Features

Type N, 7/16 DIN, SMA or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 3.0 GHz.

**Nominal dB Values:** 3 - 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** **150 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 15 W at 125°C. **10 kW** peak power (5 µsec pulse width, 0.75% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA40          |
| 3 - 40           | 0.5           |

**Maximum VSWR:** 1.1

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 1.0 (35.3)  
**Height:** 65.5 (2.58)  
**Width:** 79.2 (3.12)

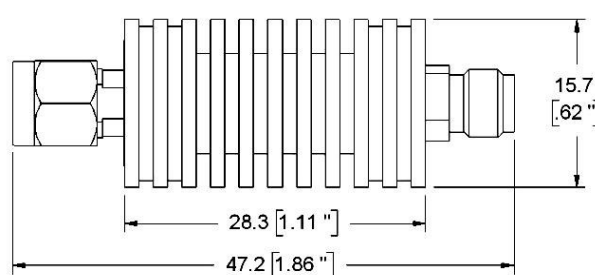
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA41

WA41/6: DC – 6 GHz  
WA41/12: DC – 12.4 GHz  
WA41: DC – 18.0 GHz

10 WATTS



## Features

Type SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA41/6: DC - 6 GHz.  
WA41/12: DC - 12.4 GHz.  
WA41: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 10 W average to 25°C ambient temperature, de-rated linearly to 0W at 125° C, 1 kW peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB  |
|------------------|----------------|
|                  | WA41 (/6, /12) |
| 1 - 2            | 0.5            |
| 3 dB             | 0.3            |
| 4 - 5            | 0.5            |
| 6 dB             | 0.3            |
| 7 - 19 dB        | 0.5            |
| 20 - 25          | 0.7            |
| 26 - 30          | 1.0            |
| 31 - 60          | 1.5            |

## Maximum VSWR:

| Frequency (GHz) | VSWR           |
|-----------------|----------------|
|                 | WA41 (/6, /12) |
| DC - 6.0        | 1.2            |
| 6.0 - 12.4      | 1.3            |
| 12.4 - 18       | 1.35           |

## Dimensions and Weight:

| Attenuation (dB) | WA41 (/6, /12) |            |            |
|------------------|----------------|------------|------------|
|                  | Length         | Diameter   | Weight     |
| 1 - 60           | 47.2 (1.86)    | 15.7 (.62) | .03 (1.06) |

Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

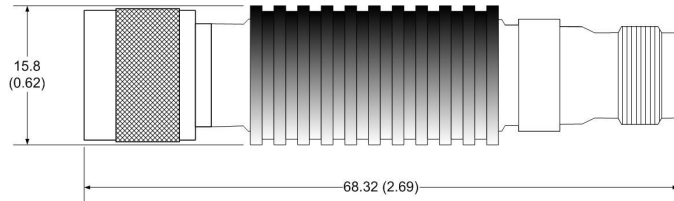


# Fixed Coaxial Attenuator

# WA41T

WA41T/6: DC – 6 GHz  
WA41T/12: DC – 12.4 GHz  
WA41T: DC – 18.0 GHz

10 WATTS



## Features

TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA41T/6: DC - 6 GHz.  
WA41T/12: DC - 12.4 GHz.  
WA41T: DC - 18.0 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 10 W average to 25°C ambient temperature, de-rated linearly to 0W at 125°C, 1 kW peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB   |
|------------------|-----------------|
|                  | WA41T (/6, /12) |
| 1 - 2            | 0.5             |
| 3                | 0.3             |
| 4 - 5            | 0.5             |
| 6                | 0.3             |
| 7 - 19           | 0.5             |
| 20 - 25          | 0.7             |
| 26 - 30          | 1.0             |
| 31 - 60          | 1.5             |

## Maximum VSWR:

| Frequency (GHz) | VSWR            |
|-----------------|-----------------|
|                 | WA41T (/6, /12) |
| DC - 6.0        | 1.2             |
| 6.0 - 12.4      | 1.4             |
| 12.4 - 18       | 1.5             |

## Dimensions:

| Attenuation (dB) | WA41T (/6, /12) |            |             |
|------------------|-----------------|------------|-------------|
|                  | Length          | Diameter   | Weight      |
| 1 - 60           | 59.7 (2.35)     | 15.8 (.62) | 40.3 (1.42) |

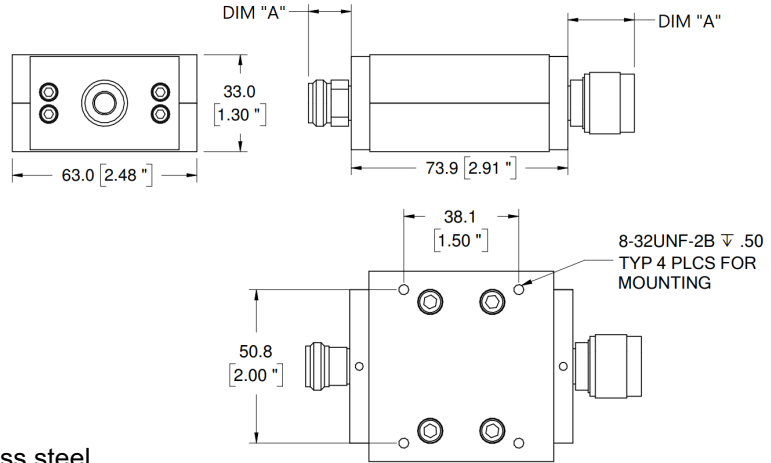
Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Fixed Coaxial Attenuator

# WA42

DC – 3.0 GHz

150 WATTS



## Features

Type N, DIN 7/16, SMA or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. *Low profile, mountable housing.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 3.0 GHz.

**Nominal dB Values:** 3 – 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** **150 W** maximum average rated power with case temperature held to 100°C using conductive heat sink. **10 kW** peak power (5 µsec pulse width, .75% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA42          |
| 3 - 40           | 0.5           |

**Maximum VSWR:** 1.1

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 0.5 (17.6)  
**Height:** 33.0 (1.3)  
**Width:** 63.0 (2.48)  
**Mounting:** 4x 8-32, .5" deep

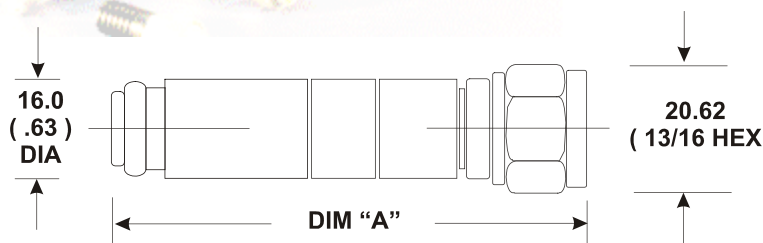
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA44

DC – 18 GHz

5 WATTS



## Features

Type N-type stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

*Precision N-type hex connector design.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 5 W average to 25°C ambient temperature, de-rated linearly to 0W at 125°C, 1 kW peak (5 µsec pulse width, 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper or stainless steel contacts.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA44          |
| 1 - 9            | 0.3           |
| 10 - 20          | 0.5           |
| 21 - 40          | 1.0           |
| 41 - 60          | 1.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA44 |
| DC - 4.0        | 1.15 |
| 4.0 - 12.4      | 1.2  |
| 12.4 - 18.0     | 1.25 |

## Dimensions:

| Attenuation (dB) | WA44             |            |           |
|------------------|------------------|------------|-----------|
|                  | Length (Dim "A") | Diameter   | Weight    |
| 1 - 30           | 74.4 (2.93)      | 16.0 (.63) | .10 (3.5) |
| 31 - 60          | 84.6 (3.33)      | 16.0 (.63) | .13 (4.5) |

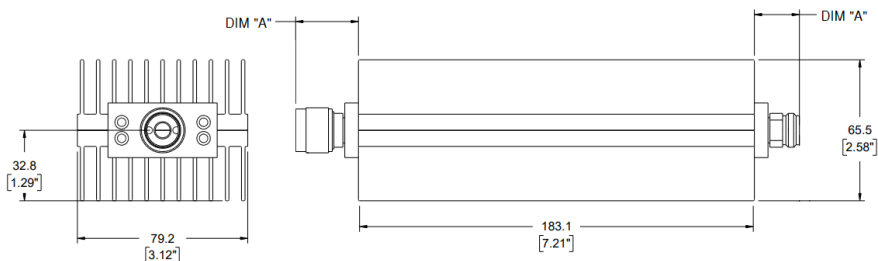
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA45

**WA45: DC – 2.5 GHz**  
**WA45/3: DC – 3 GHz**

**250 WATTS**



## Features

Type N or 7/16 DIN stainless steel connectors per MIL-STD-348A, interface non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA45: DC - 2.5 GHz.  
WA45/3: DC - 3.0 GHz.

**Nominal dB Values:** 3 - 40 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Unidirectional in power.

**Power Rating:** **250 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 25 W at 125°C. **10 kW** peak power (5 usec pulse width, 1.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |        |
|------------------|---------------|--------|
|                  | WA45          | WA45/3 |
| 3 - 40           | 0.5           | 0.7    |

## Maximum VSWR:

| Frequency (GHz) | VSWR |        |
|-----------------|------|--------|
|                 | WA45 | WA45/3 |
| DC - 3.0        | 1.1  | 1.15   |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 10.9 (.43)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 1.3 (45.9)  
**Height:** 51.8 (2.04)  
**Width:** 79.2 (3.12)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

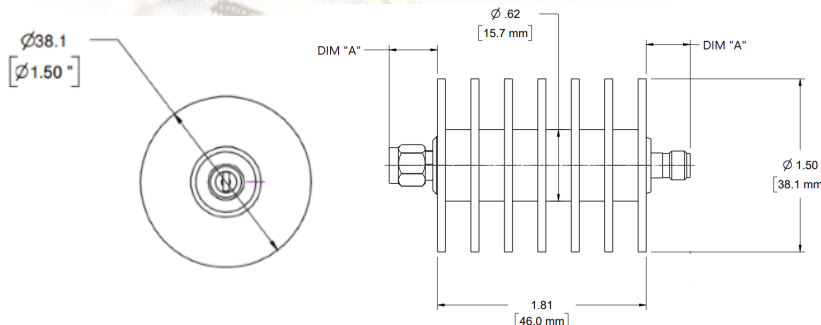
# Fixed Coaxial Attenuator

# WA46

**WA46/12: DC – 12.4 GHz**

**WA46: DC – 18 GHz**

**25 WATTS**



## Features

Type N, SMA, or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA46/12: DC - 12.4 GHz.  
WA46: DC - 18 GHz.

**Nominal dB Values:** 3 - 40 dB

**Power Coefficient:** < 0.0006 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 25 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 2.5 W at 125°C. 1 kW peak power (5 µsec pulse width, 1.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA46/12       | WA46 |
| 3 - 10           | 0.5           | 0.5  |
| 11 - 20          | 0.75          | 0.75 |
| 21 - 40          | 1.0           | 1.0  |

## Maximum VSWR:

| Frequency (GHz) | VSWR    |      |
|-----------------|---------|------|
|                 | WA46/12 | WA46 |
| DC - 8.0        | 1.2     | 1.2  |
| 8.0 - 12.4      | 1.25    | 1.25 |
| 12.4 - 18       | N/A     | 1.35 |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | SMA F -01            |
| SMA M -02               | 10.9 (.43)           |
| N-Type F -03            | 14.9 (.59)           |
| N-Type M -04            | 22.7 (.89)           |
| TNC F -05               | 14.4 (.57)           |
| TNC M -06               | 17.7 (.70)           |

**Weight:** 0.11 (3.9)  
**Diameter:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

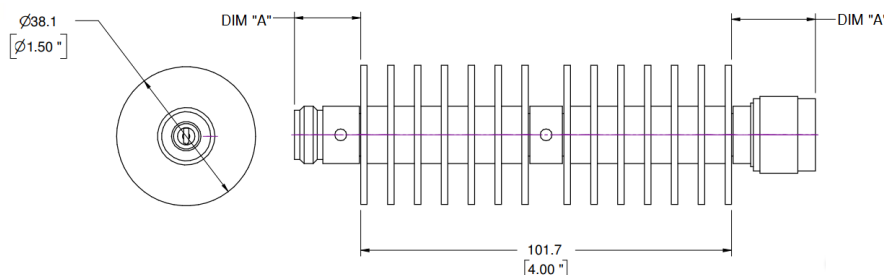
# Fixed Coaxial Attenuator

# WA47

WA47/12: DC – 12.4 GHz

WA47: DC – 18 GHz

50 WATTS



## Features

Type N, SMA, or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA47/12: DC - 12.4 GHz.  
WA47: DC - 18 GHz.

**Nominal dB Values:** 6 - 40 dB

**Power Coefficient:** < 0.0003 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 50 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 5 W at 125°C. 1 kW peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA47/12       | WA47 |
| 6 - 9            | 0.75          | 0.75 |
| 10               | 0.5           | 0.5  |
| 11 - 20          | 0.75          | 0.75 |
| 21 - 40          | 1.0           | 1.0  |

## Maximum VSWR:

| Frequency (GHz) | VSWR            |                     |              |                  |
|-----------------|-----------------|---------------------|--------------|------------------|
|                 | WA47/12<br>6 dB | WA47/12<br>10-40 dB | WA47<br>6 dB | WA47<br>10-40 dB |
| DC - 8.0        | 1.25            | 1.2                 | 1.25         | 1.2              |
| 8.0 - 12.4      | 1.35            | 1.25                | 1.35         | 1.25             |
| 12.4 - 18       | N/A             | N/A                 | 1.45         | 1.35             |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | SMA F -01            |
| SMA M -02               | 10.9 (.43)           |
| N-Type F -03            | 14.9 (.59)           |
| N-Type M -04            | 22.7 (.89)           |
| TNC F -05               | 14.4 (.57)           |
| TNC M -06               | 17.7 (.70)           |

**Weight:** 0.21 (7.4)  
**Diameter:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

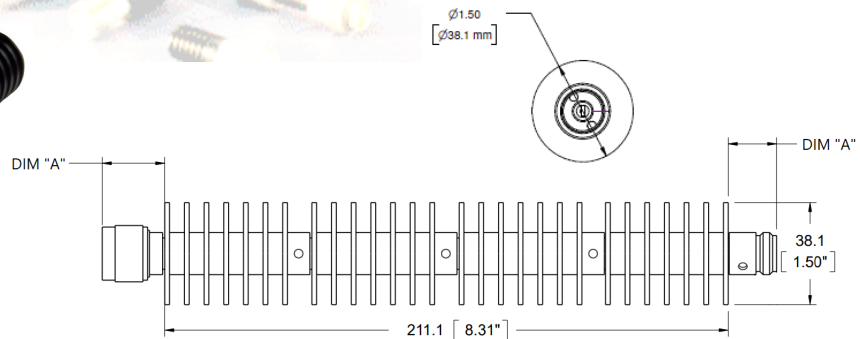
# Fixed Coaxial Attenuator

# WA48

**WA48/12: DC – 12.4 GHz**

**WA48: DC – 18 GHz**

**100 WATTS**



## Features

Type N, SMA, or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA48/12: DC - 12.4 GHz.  
WA48: DC - 18 GHz.

**Nominal dB Values:** 10 - 40 dB

**Power Coefficient:** < 0.00015 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 100 W maximum average rated power to 25°C ambient temperature, derated linearly to 10 W at 125°C. 1 kW peak power (5 µsec pulse width, 10% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA48/12       | WA48 |
| 10 - 19          | 1.25          | 1.25 |
| 20               | 0.75          | 0.75 |
| 21 - 40          | 1.0           | 1.0  |

## Maximum VSWR:

| Frequency (GHz) | VSWR          |                  |            |               |
|-----------------|---------------|------------------|------------|---------------|
|                 | WA48/12 10 dB | WA48/12 20-40 dB | WA48 10 dB | WA48 20-40 dB |
| DC - 8.0        | 1.4           | 1.25             | 1.4        | 1.25          |
| 8.0 - 12.4      | 1.4           | 1.35             | 1.4        | 1.35          |
| 12.4 - 18       | N/A           | N/A              | 1.55       | 1.45          |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | SMA F -01            |
| SMA M -02               | 10.9 (.43)           |
| N-Type F -03            | 14.9 (.59)           |
| N-Type M -04            | 22.7 (.89)           |
| TNC F -05               | 14.4 (.57)           |
| TNC M -06               | 17.7 (.70)           |

**Weight:** 0.21 (7.4)  
**Diameter:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

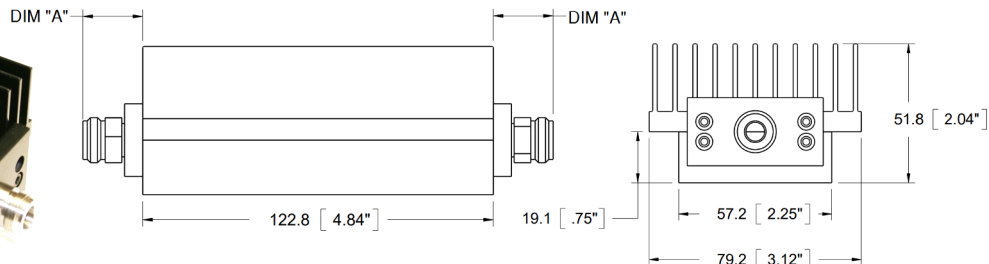
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

# Fixed Coaxial Attenuator

# WA49

DC – 8.5 GHz

150 WATTS



## Features

Type N, DIN 7/16, SMA or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 8.5 GHz.

**Nominal dB Values:** 3 – 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 150 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 15 W at 125° C. 5 kW peak power (5 µsec pulse width, 1.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA49          |
| 3 - 30           | 0.75          |
| 40               | 1.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA49 |
| DC - 4.0        | 1.2  |
| 4.0 - 8.5       | 1.35 |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 0.90 (31.8)  
**Height:** 51.8 (2.04)  
**Width:** 79.2 (3.12)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

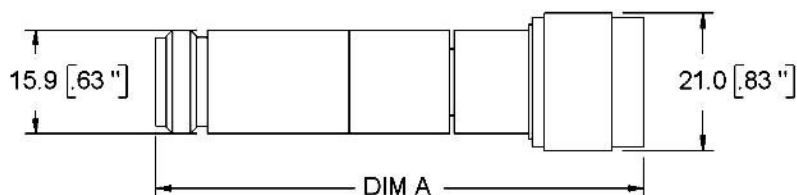


# Fixed Coaxial Attenuator

# WA50

WA50: DC – 3.0 GHz

2.0 WATTS



## Features

Type N-type stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 3 GHz.

**Nominal dB Values:** 1 - 50 dB

**Bidirectional in power.**

**Power Rating:** 2 W average to 25°C ambient temperature, derated linearly to 0 W at 125°C. 1 kW peak (5 µsec pulse width, 0.1% duty cycle).

**Temperature Range:** -30°C to 70°C

**Construction:** Stainless steel barrel with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

*Model WA50 is also available in a calibrated attenuator set WAS1 (3, 6, 10 and 20dB) with certificate of calibration.*

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA50          |
| 0 - 12           | 0.5           |
| 13 - 20          | 0.7           |
| 21 - 40          | 1.0           |
| 41 - 60          | 1.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA50 |
| DC - 1.0        | 1.15 |
| 1.0 - 3.0       | 1.2  |

## Dimensions and Weight:

| Attenuation (dB) | WA50             |            |           |
|------------------|------------------|------------|-----------|
|                  | Length (Dim "A") | Diameter   | Weight    |
| 1 - 30           | 74.4 (2.93)      | 16.0 (.63) | .10 (3.5) |
| 31 - 60          | 84.6 (3.33)      | 16.0 (.63) | .13 (4.5) |

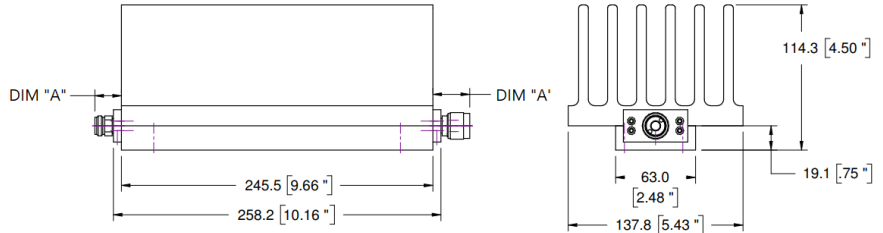
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA51

DC – 8.5 GHz

500 WATTS



## Features

Type N or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 8.5 GHz

**Nominal dB Values:** 10 – 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** **500 W** maximum average rated power to 25°C ambient temperature, derated linearly to 25 W at 125°C. **5 kW** peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA51          |
| 10, 20, 30, 40   | 2.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA51 |
| DC - 4          | 1.25 |
| 4 - 8.5         | 1.45 |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.57)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 4.1 (144.6)  
**Height:** 114.3 (4.5)  
**Width:** 137.8 (5.43)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

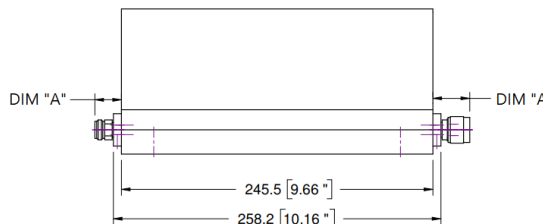
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

# Fixed Coaxial Attenuator

# WA53

DC – 3.0 GHz

500 WATTS



## Features

Type N or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 3.0 GHz

**Nominal dB Values:** 3 – 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** **500 W** maximum average rated power to 25°C ambient temperature, derated linearly to 50 W at 125°C. **10 kW** peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA53          |
| 3 - 10           | 1.0           |
| 20 - 40          | 0.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA53 |
| DC - 3.0        | 1.1  |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.57)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 4.1 (144.6)  
**Height:** 114.3 (4.5)  
**Width:** 137.8 (5.43)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

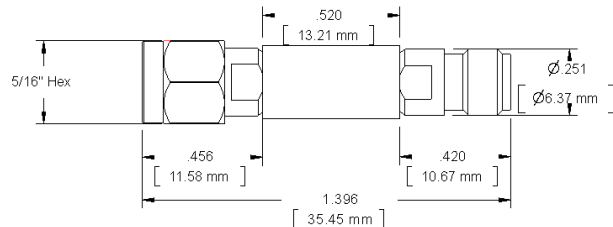
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

# Fixed Coaxial Attenuator

# WA54

DC - 40 GHz

2 WATTS



## Features

Precision 2.92mm stainless steel M/F connectors per MIS-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40 GHz.

**Nominal dB Values:** 1 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 2 W average to 25°C ambient temperature, de-rated linearly to 0.1W at 100°C, 200 W peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHs Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost. Model WA54 is also available in a calibrated attenuator set WAS54 (3, 6, 10 and 20 dB) with certificate of calibration.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |               |
|------------------|---------------|---------------|
|                  | DC - 26.5 GHz | 26.5 - 40 GHz |
| 3 - 6            | 0.5           | 1.0           |
| 10 - 20          | 1.0           | 1.0           |
| 30               | 2.0           | 2.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 26.5       | 1.25 |
| 26.5 - 40.0     | 1.45 |

## Dimensions:

|                |            |
|----------------|------------|
| <b>WA54</b>    |            |
| Length:        | 35.5 (1.4) |
| Body Diameter: | 6.4 (.25)  |
| Weight:        | .008 (.28) |

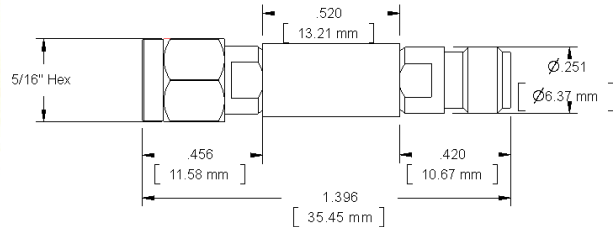
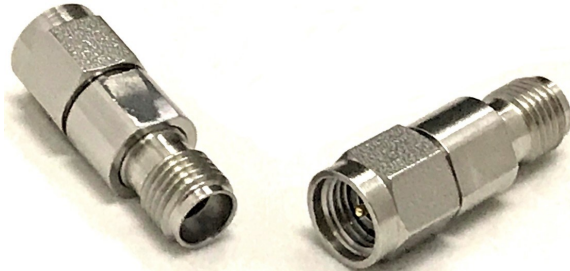
Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Fixed Coaxial Attenuator

# WA54CH

DC - 40 GHz

2 WATTS



## Features

Precision 2.92mm stainless steel M/F connectors per MIS-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

Model WA54CH combines the performance of the WA54 with a more compact package.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40 GHz.

**Nominal dB Values:** 1 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** **2 W** average to 25°C ambient temperature, de-rated linearly from 100% at 25°C to 10% at 125°C, **200 W** peak (2 µsec pulse width, 0.1% duty cycle).

**Temperature Range:** -65°C to +125°C.

**Temperature Coefficient:** < 0.0005 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHs Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |               |
|------------------|---------------|---------------|
|                  | DC - 26.5 GHz | 26.5 - 40 GHz |
| 0 - 6            | 0.5           | 1.0           |
| 7 - 20           | 0.75          | 1.0           |
| 25 and 30        | 0.8           | 1.25          |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 26.5       | 1.3  |
| 26.5 - 40.0     | 1.4  |

## Dimensions:

### WA54CH

|                |             |
|----------------|-------------|
| Length:        | 22.1 (0.87) |
| Body Diameter: | 8 (.315)    |
| Weight:        | .005 (.167) |

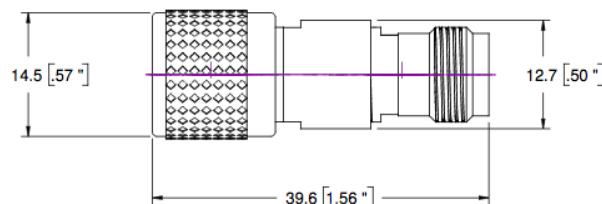
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA55

**WA55/6:** DC – 6.0 GHz  
**WA55:** DC – 18 GHz

**5 WATTS**



## Features

TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA55/6: DC - 6.0 GHz.  
WA55: DC - 18 GHz.

**Nominal dB Values:** 1 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 5 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.5 W at 125°C. 1 kW peak power (5 µsec pulse width, 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA55/6        | WA55 |
| 1 - 6            | 0.3           | 0.4  |
| 7 - 20           | 0.4           | 0.5  |
| 21 - 30          | 0.8           | 0.9  |

## Maximum VSWR:

| Frequency (GHz) | VSWR   |      |
|-----------------|--------|------|
|                 | WA55/6 | WA55 |
| DC - 4.0        | 1.15   | 1.15 |
| 4.0 - 6.0       | 1.2    | 1.2  |
| 6.0 - 8.0       | N/A    | 1.2  |
| 8.0 - 12.4      | N/A    | 1.25 |
| 12.4 - 18.0     | N/A    | 1.45 |

## Dimensions and Weight (both models):

Diameter: 12.7 (.50)  
Length: 39.8 (1.56)  
Weight: .03 (1.06)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

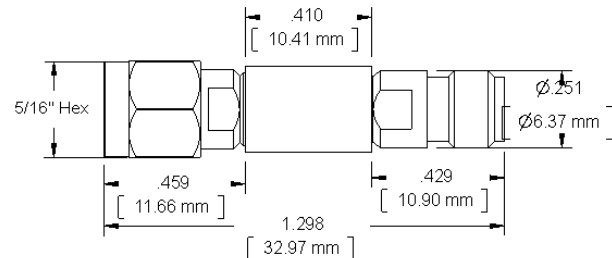
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

# Fixed Coaxial Attenuator

# WA56

DC - 32 GHz

2 WATTS



## Features

3.5mm stainless steel M/F connectors per MIS-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 32 GHz.

**Nominal dB Values:** 0 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 2 W average to 25°C ambient temperature, de-rated linearly to 0.1W at 100°C, 200 W peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHs Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |               |
|------------------|---------------|---------------|
|                  | DC - 26.5 GHz | 26.5 - 32 GHz |
| 1, 2             | 0.6           | 0.8           |
| 3, 6             | 0.5           | 0.8           |
| 10               | 0.6           | 0.8           |
| 11 -30           | 0.75          | 1.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 26.5       | 1.25 |
| 26.5 - 32.0     | 1.35 |

## Dimensions:

|                |            |
|----------------|------------|
| Length:        | 33.0 (1.3) |
| Body Diameter: | 7.1 (.23)  |
| Weight:        | .008 (.28) |

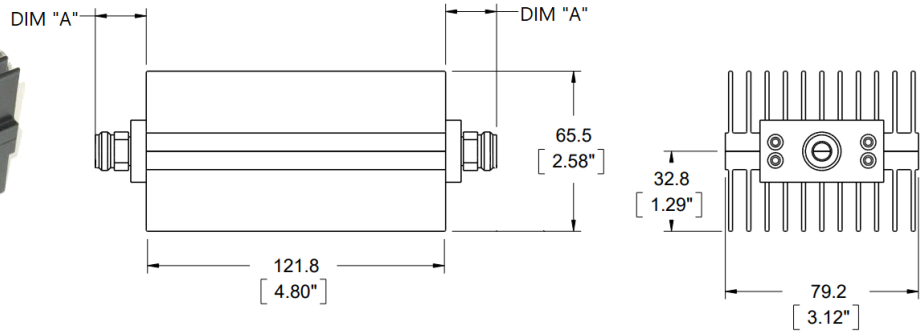
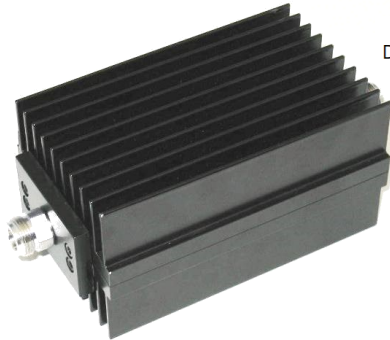
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA57

**DC – 5.0 GHz**

**150 WATTS**



## Features

Type N, 7/16 DIN, SMA or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 5.0 GHz.

**Nominal dB Values:** 3 - 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** **150 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 15 W at 125°C. **10 kW** peak power (5 µsec pulse width, 0.75% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA57          |
| 3 - 20           | 1.25          |
| 21 - 40          | 1.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR  |        |
|-----------------|-------|--------|
|                 | WA57  |        |
|                 | Input | Output |
| DC - 2.0        | 1.1   | 1.2    |
| 2.0 - 5.0       | 1.15  | 1.2    |

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

## Dimensions:

**Weight:** 1.0 (35.3)  
**Height:** 65.5 (2.58)  
**Width:** 79.2 (3.12)

Note: Dimensions are given in mm (in), or kg (oz). Weight figure is

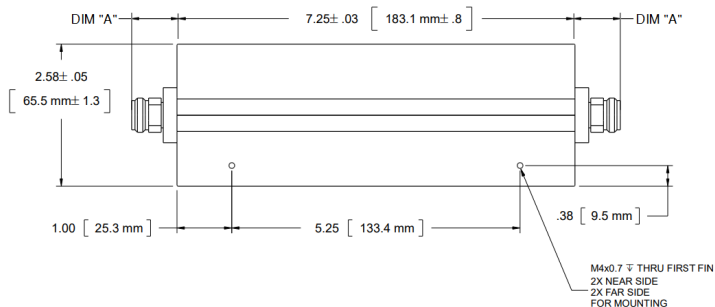
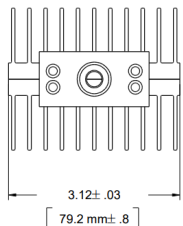
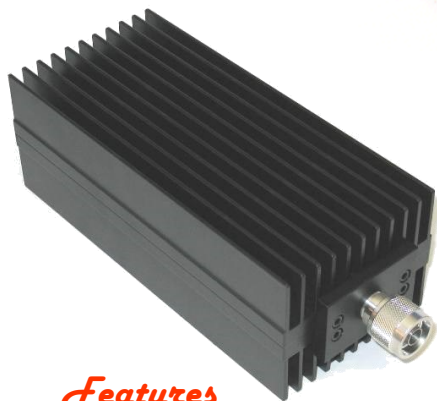


# Fixed Coaxial Attenuator

# WA58

DC – 5.0 GHz

250 WATTS



## Features

Type N or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 5.0 GHz

**Nominal dB Values:** 3 - 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 250 W maximum average rated power to 25°C ambient temperature, derated linearly to 25 W at 125°C. 10 kW peak power (5 µsec pulse width, 1.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA58          |
| 3 - 20           | 1.5           |
| 21 - 40          | 1.75          |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA58 |
| DC - 2.0        | 1.2  |
| 2.0 - 5.0       | 1.25 |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.57)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 1.3 (45.9)  
**Height:** 65.5 (2.58)  
**Width:** 79.2 (3.12)

Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

# Fixed Coaxial Attenuator

# WA59

DC – 2.5 GHz (Useable to 3.0 GHz)

100 WATTS



## Features

Type N, SMA or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. *Flat body with 6-32 mounting holes for conductive cooling.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 2.5 GHz

**Nominal dB Values:** 3 - 40 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 100 W maximum average rated power with case temperature held to 100°C using conductive heat sink. 10 kW peak power (5 µsec pulse width, 0.5% duty cycle).

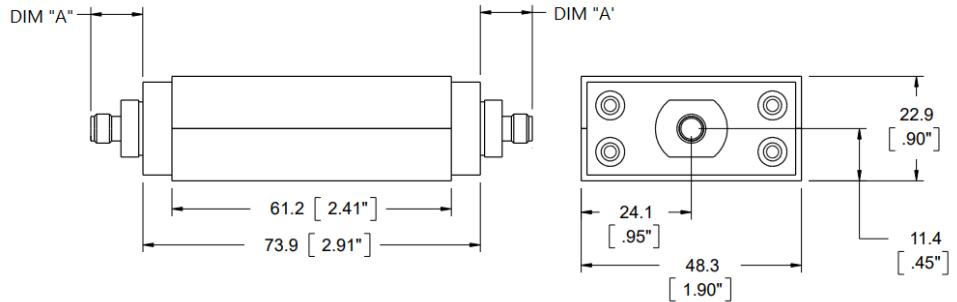
**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.



## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA59          |
| 3 - 40           | 0.7           |

## Maximum VSWR:

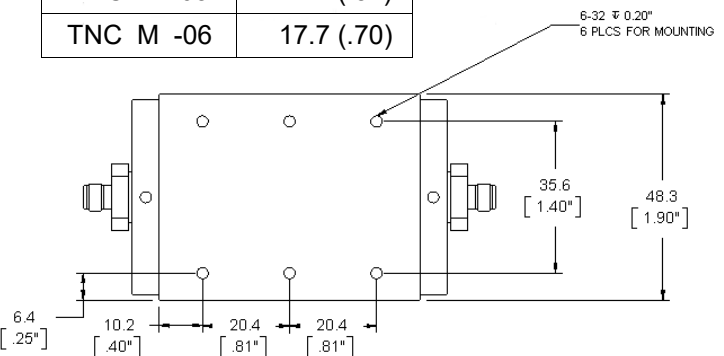
| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA59 |
| DC - 2.5        | 1.2  |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
| SMA F -01               | 9.8 (.39)            |
| SMA M -02               | 10.9 (.43)           |
| N-Type F -03            | 14.9 (.59)           |
| N-Type M -04            | 22.7 (.89)           |
| TNC F -05               | 14.4 (.57)           |
| TNC M -06               | 17.7 (.70)           |

**Weight:** 0.14 (4.9)  
**Height:** 22.9 (0.9)  
**Width:** 48.3 (1.9)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# WEINSCHEL ASSOCIATES

TEL: 877.948.8342 / 301.963.4630 ♦ Fax: 301.963.8640

WEB: <http://www.WeinschelAssociates.com>

EMAIL: [sales@WeinschelAssociates.com](mailto:sales@WeinschelAssociates.com)



55

Rev -

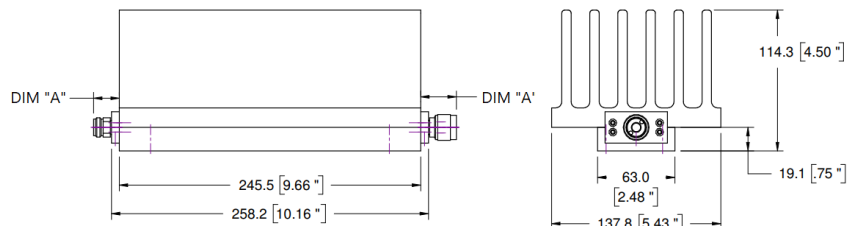
Specification  
Subject to change  
without notice

# Fixed Coaxial Attenuator

# WA60

DC – 5.0 GHz

500 WATTS



## Features

Type N or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 5.0 GHz

**Nominal dB Values:** 10 – 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** **500 W** maximum average rated power to 25°C ambient temperature, derated linearly to 25 W at 125°C. **5 kW** peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA60          |
| 10 - 30          | 0.75          |
| 31 - 40          | 1.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA60 |
| DC - 2.5        | 1.15 |
| 2.5 - 5.0       | 1.35 |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.57)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 4.1 (144.6)  
**Height:** 114.3 (4.5)  
**Width:** 137.8 (5.43)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

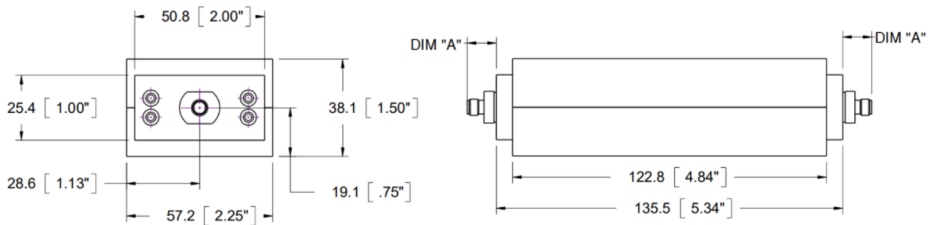
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

# Fixed Coaxial Attenuator

# WA61 & WA62

**WA61: DC – 4 GHz**  
**WA62: DC – 8.5 GHz**

**150 WATTS**



## Features

Type N or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. *Flat body with 6-32 mounting holes for conductive cooling.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA61: DC - 4 GHz.  
 WA62: DC - 8.5 GHz.

**Nominal dB Values:** 3 - 40 dB

**Power Coefficient:** < 0.0006 dB/dB/W;  
 Unidirectional in power.

**Power Rating:** **150 W** maximum rated average power with case temperature held to +100° C using conductive heat sink. **5 kW** peak power (5 µsec pulse width, 1.5% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |                  |                    |
|------------------|---------------|------------------|--------------------|
|                  | WA61          | WA62 (0 - 4 GHz) | WA62 (4 - 8.5 GHz) |
| 3 - 30           | 0.4           | 0.4              | 0.75               |
| 40               | 0.5           | 0.5              | 1.0                |

## Maximum VSWR:

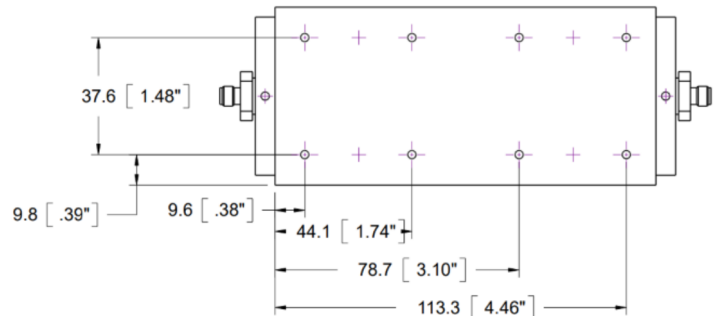
| Frequency (GHz) | VSWR |      |
|-----------------|------|------|
|                 | WA61 | WA62 |
| DC - 4.0        | 1.2  | 1.2  |
| 4.0 - 8.5       | N/A  | 1.35 |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.57)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 0.8 (28.2)  
**Height:** 38.1 (1.5)  
**Width:** 57.2 (2.25)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

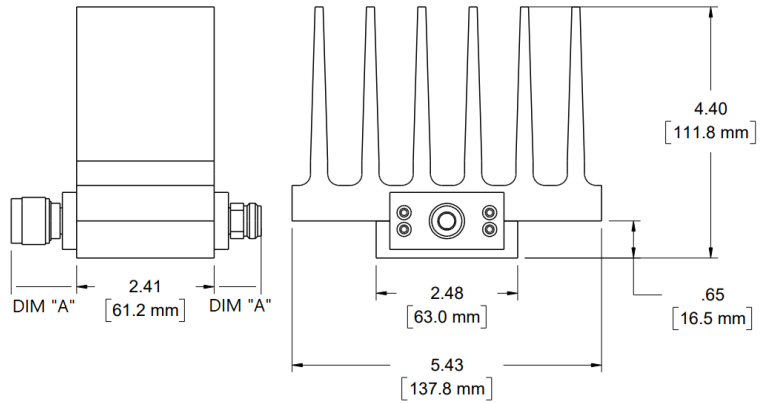


# Fixed Coaxial Attenuator

# WA65

**DC – 3.0 GHz**

**150 WATTS**



## Features

Type N, DIN 7/16, or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 3.0 GHz

**Nominal dB Values:** 3 - 30 dB

**Power Coefficient:** < 0.0003 dB/dB/W;  
Unidirectional in power.

**Power Rating:** **150 W** maximum average power to +25°C ambient temperature, de-rated linearly to 15 W at +125°C. **10 kW** peak (5 µsec pulse width; 0.75% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA65          |
| 3 - 30           | 1.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA65 |
| DC - 3.0        | 1.2  |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | SMA F -01            |
| SMA M -02               | 10.9 (.43)           |
| N-Type F -03            | 14.9 (.59)           |
| N-Type M -04            | 22.7 (.89)           |
| DIN 7/16 F -07          | 14.4 (.57)           |
| DIN 7/16 M -08          | 17.7 (.70)           |

**Weight:** 0.86 (30.3)  
**Height:** 111.8 (4.4)  
**Width:** 137.8 (5.43)

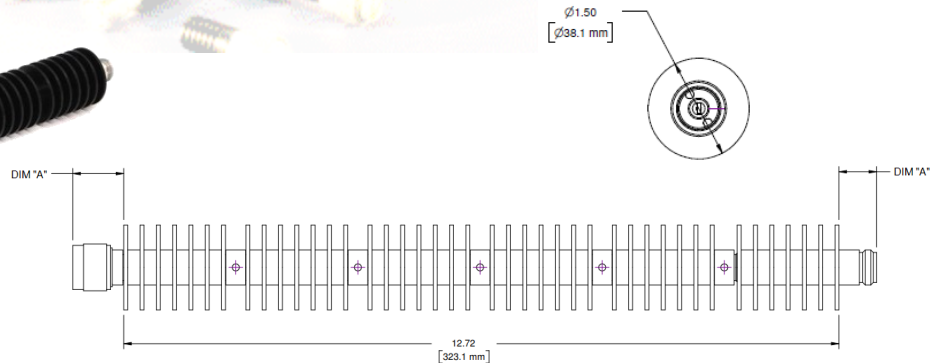
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA66

**WA66/12: DC - 12.4 GHz**  
**WA66: DC - 18.0 GHz**

**150 WATTS**



## Features

Type N or SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA66/12: DC to 12.4 GHz  
WA66: DC to 18 GHz

**Nominal dB Values:** 10 - 40 dB

**Power Coefficient:** < 0.00015 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 150 W maximum average power to +25°C ambient temperature, de-rated linearly to 10 W at +125°C. 1 kW peak (5 µsec pulse width; 7.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA66/12       | WA66 |
| 10               | 1.5           | 2.0  |
| 20 - 40          | 1.2           | 1.5  |

## Maximum VSWR

| Frequency (GHz) | VSWR             |                     |               |                     |
|-----------------|------------------|---------------------|---------------|---------------------|
|                 | WA66/12<br>10 Db | WA66/12<br>20-40 dB | WA66<br>10 dB | WA66<br>20-40<br>dB |
| DC - 12.4       | 1.9              | 1.5                 | 1.9           | 1.5                 |
| 12.4 - 18       | N/A              | N/A                 | 1.9           | 1.5                 |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |

**Weight:** 0.51 (18.0)  
**Diameter:** 38.1 (1.5)

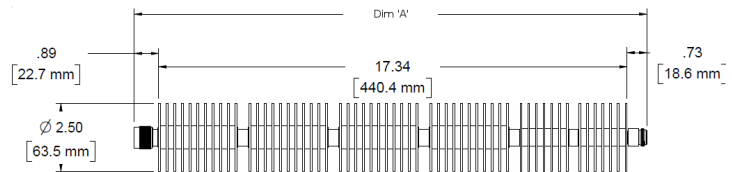
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA67

## WA67: DC – 12 GHz

## 350 WATTS



## Features

Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 12 GHz

**Nominal dB Values:** 10 - 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** **350 W** maximum average power to +25°C ambient temperature, de-rated linearly to 10 W at +100°C (Case temperature must be held to 100°C maximum). **5 kW** peak (5 µsec pulse width; 3.5% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |             |
|------------------|---------------|-------------|
|                  | DC to 8 GHz   | 8 to 12 GHz |
| 10               | 2.0           | +6.0/-0.0   |
| 20, 30           | 2.5           | 5.0/-0.0    |
| 40               | 2.5           | 6.0/-0.0    |

## Maximum VSWR

| Frequency (GHz) | VSWR WA67 |
|-----------------|-----------|
| DC - 8.0        | 1.3       |
| 8.0 - 12        | 1.6       |

## Dimensions:

| Attenuation (dB) | WA67             |             |
|------------------|------------------|-------------|
|                  | Length (Dim "A") | Weight      |
| 10               | 427 (16.79)      | 1.15 (40.5) |
| 20, 30, 40       | 482 (18.96)      | 1.3 (45.6)  |

**Diameter:** 64.77 (2.55)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

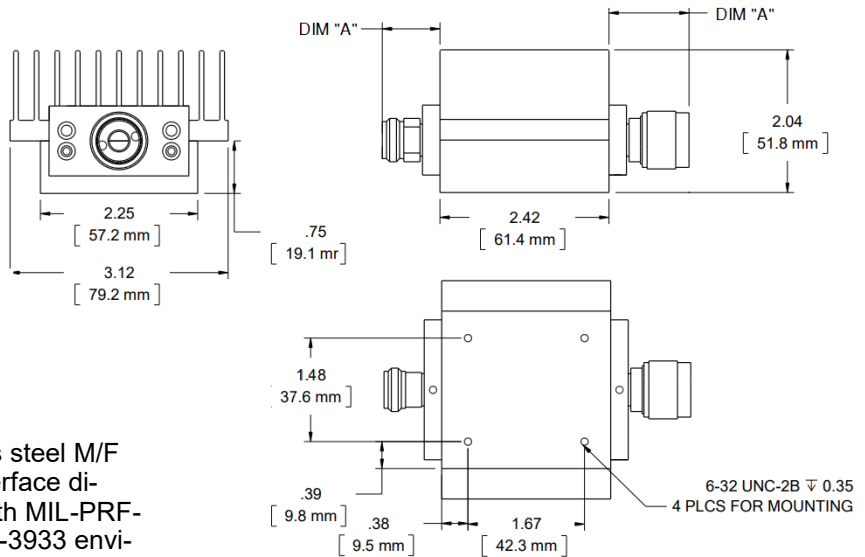
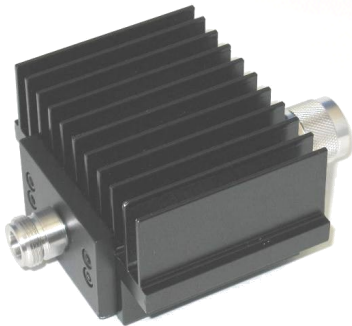
**Options:** Stands.

# Fixed Coaxial Attenuator

# WA68

**WA68: DC – 6.0 GHz**

**100 WATTS**



## Features

Type N, DIN 7/16, or SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. *Can be mounted in any position utilizing the 6-32 holes provided on the bottom of the unit.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 6.0 GHz

**Nominal dB Values:** 1 - 30 dB

**Power Coefficient:** < 0.0005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** **100 W** maximum average power to +25°C ambient temperature, de-rated linearly to 10 W at +125°C. **5 kW** peak (5  $\mu$ sec pulse width; 1% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

### Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy $\pm$ dB |
|------------------|-------------------|
|                  | WA68              |
| 1 - 2            | 1.2               |
| 3 - 30           | 1.25              |

**Maximum VSWR:** 1.3

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 0.55 (19.2)  
**Height:** 51.8 (2.04)  
**Width:** 79.2 (3.12)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

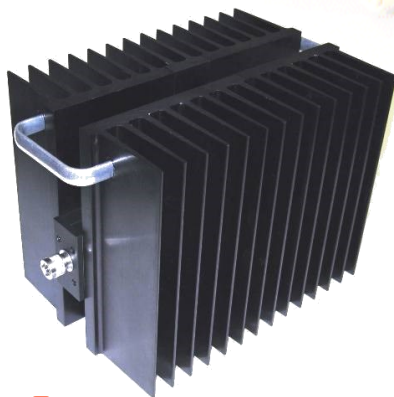


# Fixed Coaxial Attenuator

# WA70

DC – 2.5 GHz (Usable to 3 GHz)

1000 WATTS



## Features

Type N or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. DIN 7/16 connector, conforms to DIN 47223, IEC 169-4, VG 95250, CECC 22190.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 2.5 GHz (Usable to 3.0 GHz)

**Nominal dB Values:** 20, 30, 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

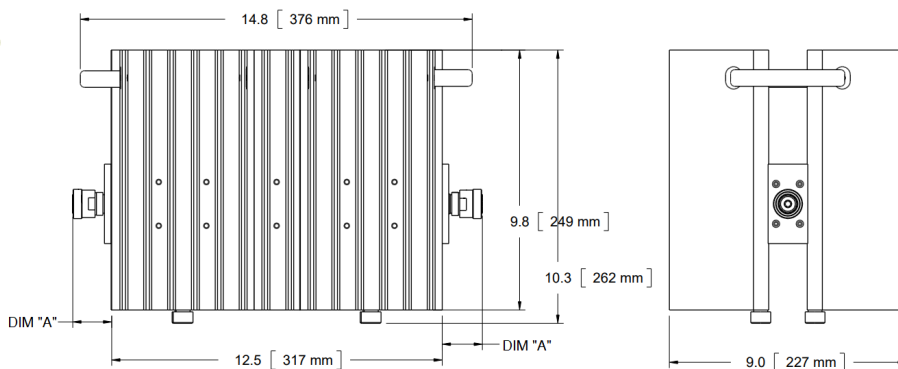
**Power Rating:** 1000 W maximum average power to +25°C ambient temperature, de-rated linearly to 100 W at +125°C. 10 kW peak (5 µsec pulse width; 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.



## Standard Nominal Values and Deviations:

**Attenuation Accuracy:** +/- 1.5 dB

**Maximum VSWR:** 1.35

## Dimensions:

| Connector Type<br>(- code) | Length<br>Dimension 'A' |
|----------------------------|-------------------------|
| N-Type F -03               | 14.9 (.59)              |
| N-Type M -04               | 22.7 (.89)              |
| DIN 7/16 F -07             | 30.5 (1.2)              |
| DIN 7/16 M -08             | 31.8 (1.25)             |

**Weight:** 18.2 (19.2)  
**Height:** 249 (9.8)  
**Width:** 227 (9.0)

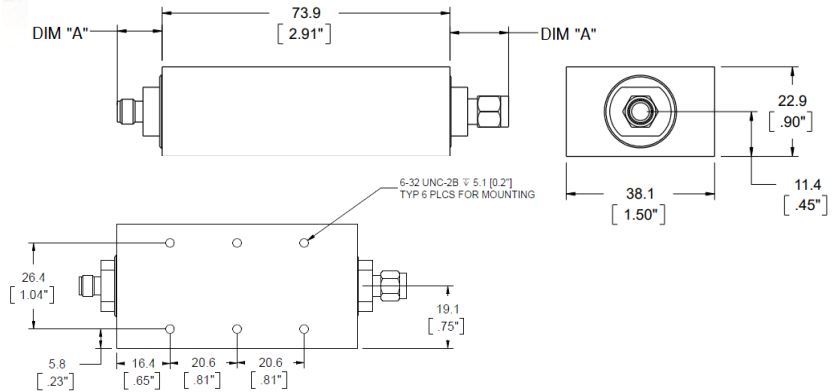
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA71 & WA72

**WA71: DC – 4 GHz**  
**WA72: DC – 8.5 GHz**

**50 WATTS**



## Features

Type N, SMA, or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Flat body with 6-32 mounting holes for conductive cooling.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA71: DC - 4 GHz.  
 WA72: DC - 8.5 GHz.

**Nominal dB Values:** 1 - 40 dB  
 (50 dB available in a unidirectional variant)

**Power Coefficient:** < 0.005 dB/dB/W;  
 Unidirectional in power.

**Power Rating:** 50 W maximum rated average power with case temperature held to +100°C using conductive heat sink. 5 kW peak power (5 µsec pulse width, .5% duty cycle).

**Temperature Range:** -25°C to +100°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |                  |                    |
|------------------|---------------|------------------|--------------------|
|                  | WA71          | WA72 (0 - 4 GHz) | WA72 (4 - 8.5 GHz) |
| 1 - 40           | 0.4           | 0.4              | 0.75               |

## Maximum VSWR:

| Frequency (GHz) | VSWR |      |
|-----------------|------|------|
|                 | WA71 | WA72 |
| DC - 4.0        | 1.2  | 1.2  |
| 4.0 - 8.5       | N/A  | 1.3  |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | SMA F -01            |
| SMA M -02               | 10.9 (.43)           |
| N-Type F -03            | 14.9 (.59)           |
| N-Type M -04            | 22.7 (.89)           |
| TNC F -05               | 14.4 (.57)           |
| TNC M -06               | 17.7 (.70)           |

**Weight:** .14 (4.94)  
**Height:** 22.9 (0.90)  
**Width:** 38.1 (1.50)

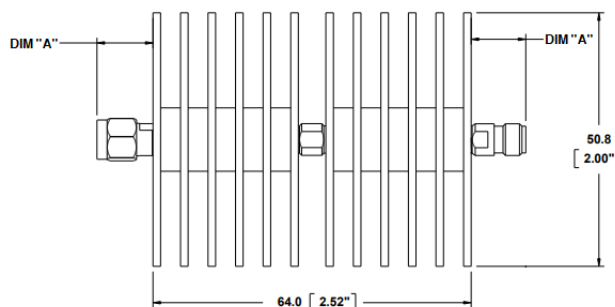
Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Fixed Coaxial Attenuator

# WA73

DC – 26.5 GHz

50 WATTS



## Features

3.5 mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Compact construction meets a wide range of design requirements.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 26.5 GHz.

**Nominal dB Values:** 6 – 40 dB

**Power Coefficient:** < 0.0015 dB/dB/W;  
Unidirectional in power.

**Power Rating:** **50 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 5 W at 125°C. **500 W** peak power (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA73          |
| 6, 10            | 1.25          |
| 20, 30           | 1.5           |
| 40               | 1.75          |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA73 |
| DC - 18         | 1.3  |
| 18 - 26.5       | 1.45 |

## Dimensions:

**Weight:** 0.2 (7.1)  
**Diameter:** 50.8 (2.0)

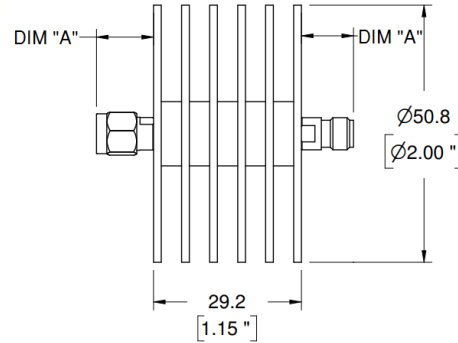
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA74

DC – 28 GHz

25 WATTS



## Features

3.5 mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Compact construction meets a wide range of design requirements.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 28 GHz.

**Nominal dB Values:** 3 - 30 dB

**Power Coefficient:** < 0.0006 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 25 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 2.5 W at 125°C. 500 W peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA74          |
| 3                | 0.7           |
| 6 - 10           | 1.0           |
| 20 - 30          | 1.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA74 |
| DC - 18         | 1.3  |
| 18 - 28         | 1.35 |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| 3.5mm F -11             | 10.7 (.42)    |
| 3.5mm M -12             | 11.6 (.46)    |

**Weight:** 0.1 (3.5)  
**Diameter:** 50.8 (2.0)

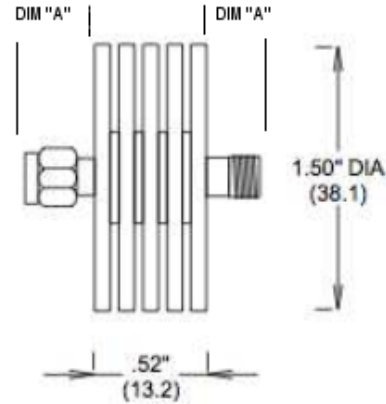
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA75

DC – 40 GHz

5 WATTS



## Features

Precision 2.92 mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Compact construction meets a wide range of design requirements.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 40.0 GHz.

**Nominal dB Values:** 1 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 5 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0 W at 125°C. 200 W peak power (5 µsec pulse width, 1.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |              |
|------------------|---------------|--------------|
|                  | DC to 18 GHz  | 18 to 40 GHz |
| 3                | 0.5           | 1.0          |
| 6, 10, 20, 30    | 0.8           | 1.5          |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA75 |
| DC - 18         | 1.25 |
| 18 - 40         | 1.45 |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | 2.92mm F -13         |
| 2.92mm M -14            | 11.5 (.45)           |

**Weight:** .06 (2.12)  
**Diameter:** 38.1 (1.5)

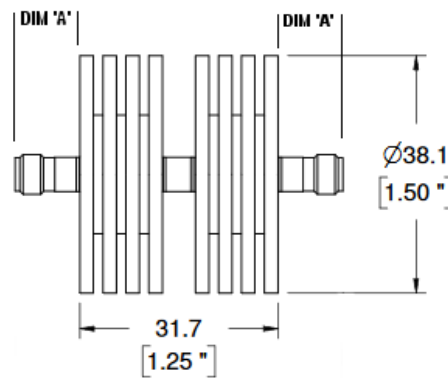
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA76

DC – 40 GHz

10 WATTS



## Features

Precision 2.92 mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Compact construction meets a wide range of design requirements.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 40.0 GHz.

**Nominal dB Values:** 6 - 30 dB  
(6 dB unit is bidirectional)

**Power Coefficient:** < 0.005 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 10 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0 W at 125°C. 200 W peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |              |
|------------------|---------------|--------------|
|                  | DC to 18 GHz  | 18 to 40 GHz |
| 6 - 30           | 1.0           | 1.75         |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA76 |
| DC - 18         | 1.25 |
| 18 - 40         | 1.4  |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| 2.92mm F -13            | 10.6 (.42)    |
| 2.92mm M -14            | 11.5 (.45)    |

**Weight:** .145 (5.11)  
**Diameter:** 38.1 (1.5)

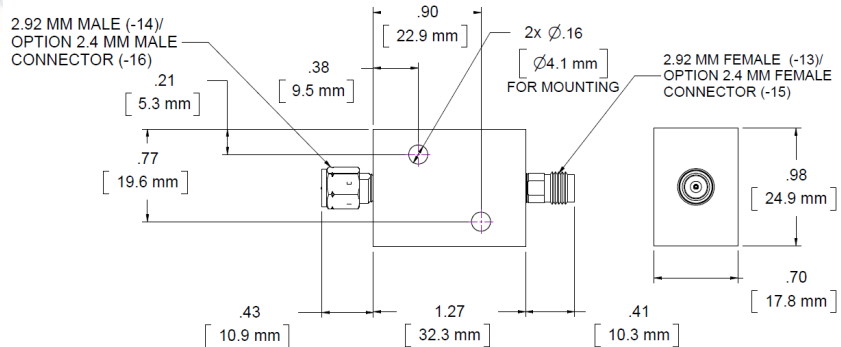
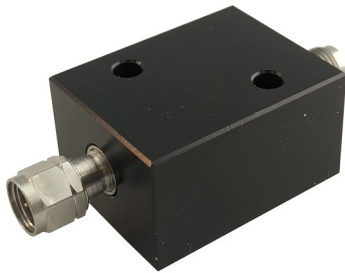
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA76B

DC – 40 GHz

10 WATTS



## Features

Precision 2.92 mm stainless steel M/F connectors per IEEE P287, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Compact construction meets a wide range of design requirements. Mountable design for convection cooling.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 40.0 GHz.

**Nominal dB Values:** 3 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 10 W maximum average rated power with case held to a maximum of +90°C. 200 W peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +90°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |              |
|------------------|---------------|--------------|
|                  | DC to 18 GHz  | 18 to 40 GHz |
| 3 - 30           | 1.0           | 1.75         |

## Maximum VSWR:

| Frequency (GHz) | VSWR  |
|-----------------|-------|
|                 | WA76B |
| DC - 18         | 1.25  |
| 18 - 40         | 1.4   |

## Dimensions:

**Weight:** 45.9 (1.62)  
**Height:** 24.9 (0.98)  
**Width:** 17.8 (.70)  
**Length:** 53.6 (2.11)  
**Mounting:** 2x 4.1 (0.16) thru holes.

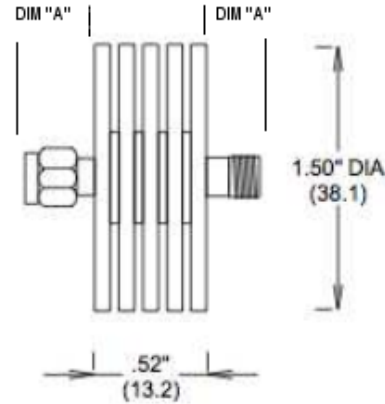
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA77

DC – 32 GHz

5 WATTS



## Features

3.5 mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Compact construction meets a wide range of design requirements.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 32.0 GHz.

**Nominal dB Values:** 0 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 5 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0 W at 125°C. 200 W peak power (5 µsec pulse width, 1.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB  |                |
|------------------|----------------|----------------|
|                  | DC to 26.5 GHz | 26.5 to 32 GHz |
| 1, 2             | 0.6            | 0.8            |
| 3, 6             | 0.5            | 0.8            |
| 10               | 0.6            | 0.8            |
| 11 - 30          | 0.75           | 1.5            |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA77 |
| DC - 26.5       | 1.25 |
| 26.5 - 32       | 1.35 |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
| 3.5mm F -11             | 10.6 (.42)           |
| 3.5mm M -12             | 11.5 (.45)           |

**Weight:** .06 (2.12)  
**Diameter:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

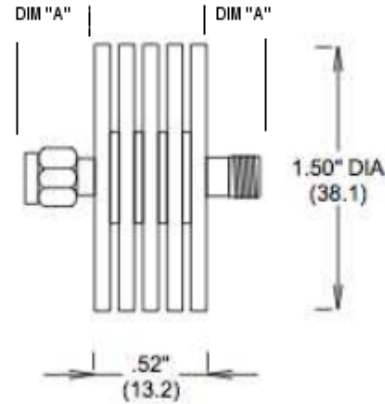


# Fixed Coaxial Attenuator

# WA78

DC – 26.5 GHz

10 WATTS



## Features

3.5 mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Compact construction meets a wide range of design requirements.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 26.5 GHz. (useable to 32 GHz)

**Nominal dB Values:** 6 - 30 dB (6 dB unit is bidirectional)

**Power Coefficient:** < 0.005 dB/dB/W; Unidirectional in power.

**Power Rating:** 10 W. Maximum rated average power to +25 C ambient temperature, derated linearly to 0 W at +125 . **200 W** peak power (5 usec pulse width, 1.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB  |                |
|------------------|----------------|----------------|
|                  | DC to 26.5 GHz | 26.5 to 32 GHz |
| 1, 2             | 0.6            | 0.8            |
| 3, 6             | 0.5            | 0.8            |
| 10               | 0.6            | 0.8            |
| 11 - 30          | 0.75           | 1.5            |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA77 |
| DC - 18.0       | 1.25 |
| 18.0 - 26.5     | 1.4  |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
| 3.5mm F -11             | 10.6 (.42)           |
| 3.5mm M -12             | 11.5 (.45)           |

**Weight:** .06 (2.12)  
**Diameter:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA80

DC – 2.5 GHz (Usable to 3 GHz)

2000 WATTS



## Features

Type N or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. DIN 7/16 connector, conforms to DIN 47223, IEC 169-4, VG 95250, CECC 22190. Forced air cooling.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 2.5 GHz (Usable to 3.0 GHz)

**Nominal dB Values:** 20, 30, 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

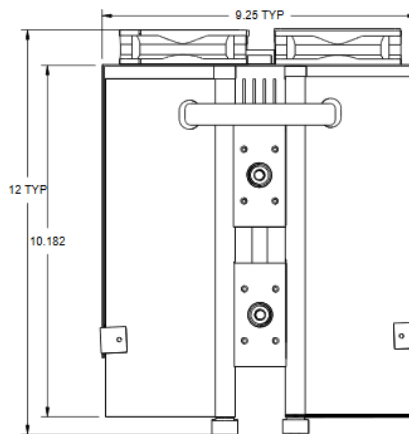
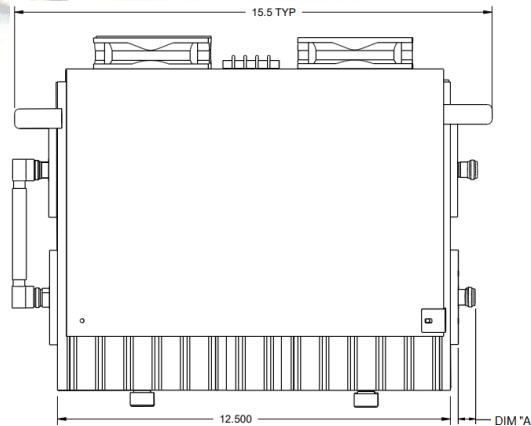
**Power Rating:** 2000 W maximum average power to +25°C ambient temperature, de-rated linearly to 100 W at +125°C. 10 kW peak (5 µsec pulse width; 10% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.



## Attenuation Accuracy:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA80          |
| 20               | +3.5/-3.0 dB  |
| 30, 40           | +/- 2.5 dB    |

**Maximum VSWR:** 1.35

## Dimensions:

|                |               |
|----------------|---------------|
| <b>Height:</b> | 295.0 (11.61) |
| <b>Width:</b>  | 234.0 (9.21)  |
| <b>Length:</b> | 394.0 (15.5)  |
| <b>Weight:</b> | 20.55 (724.8) |

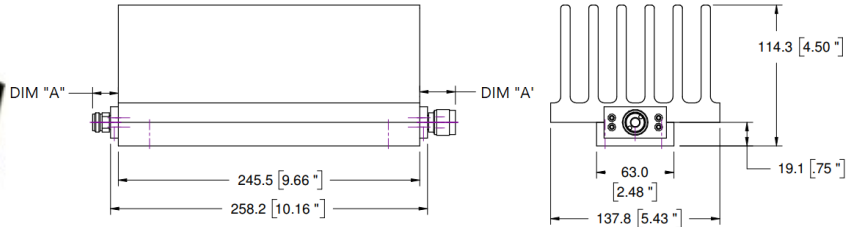
Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional con-

# Fixed Coaxial Attenuator

# WA81

DC – 10.0 GHz

500 WATTS



## Features

Type N or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 10.0 GHz

**Nominal dB Values:** 10 – 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 500 W maximum average rated power to 25°C ambient temperature, derated linearly to 25 W at 125°C. 5 kW peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |             |
|------------------|---------------|-------------|
|                  | DC - 7GHz     | 7 to 10 GHz |
| 10,20,30, 40     | 2.0           | +3.0/-0.5   |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA81 |
| DC - 4.0        | 1.25 |
| 4.0 - 8.0       | 1.45 |
| 8.0 - 10.0      | 1.7  |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 4.1 (144.6)  
**Height:** 114.3 (4.5)  
**Width:** 137.8 (5.43)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

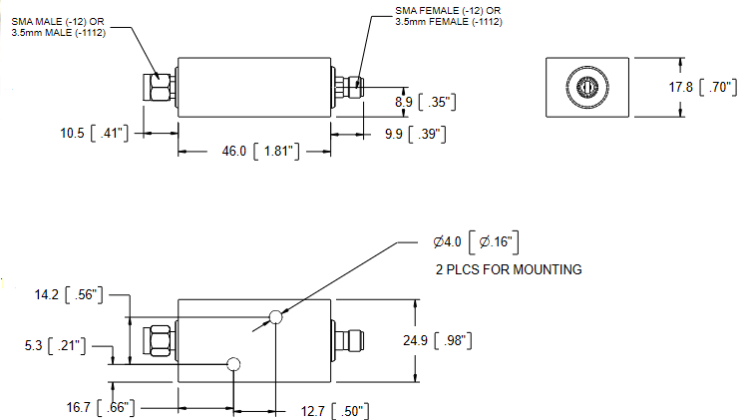
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

# Fixed Coaxial Attenuator

# WA86

DC – 22.0 GHz

50 WATTS



## Features

Type SMA and 3.5 mm connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specifications.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 22.0 GHz

**Nominal dB Values:** 3 – 40 dB

**Power Coefficient:** < 0.0006 dB/dB/W;  
Bidirectional in power.

**Power Rating:** **50 W** Maximum rated average power with case temperature held to a maximum of +90°C . **1 kW** peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +90°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black anodized aluminum housing. Passivated stainless steel connector body. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations: Maximum VSWR:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
| 3, 6, 10         | +/- 0.8       |
| 20, 30           | +/- 0.8       |
| 40               | +/- 1.0       |

## Dimensions:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA86 |
| DC - 8.0        | 1.20 |
| 8.0 - 12.4      | 1.25 |
| 12.4 - 22       | 1.35 |

**Weight:** 4.1 (144.6)

**Height:** 114.3 (4.5)

**Width:** 137.8 (5.43)

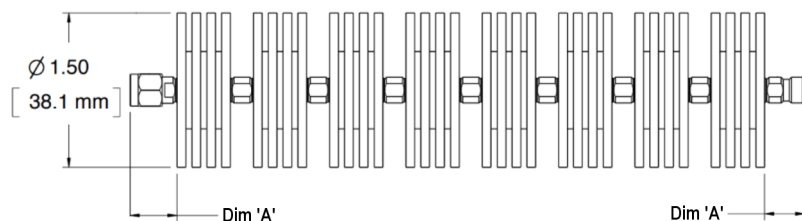
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA88

## DC – 40 GHz

## 50 WATTS



### Features

Precision 2.92 mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Compact construction meets a wide range of design requirements.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 40.0 GHz.

**Nominal dB Values:** 20, 30, 40 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Unidirectional in power.

**Power Rating:** **50 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 0 W at 100°C. **200 W** peak power (5 µsec pulse width, 10% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

### Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |              |
|------------------|---------------|--------------|
|                  | DC to 18 GHz  | 18 to 40 GHz |
| 20, 30, 40       | 2.5           | 3.5          |

### Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA88 |
| DC - 18.0       | 1.3  |
| 18.0 - 40.0     | 1.6  |

### Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | 2.92mm F -13         |
| 2.92mm M -14            | 11.5 (.45)           |

**Weight:** 0.26 (9.17)  
**Diameter:** 38.1 (1.5)

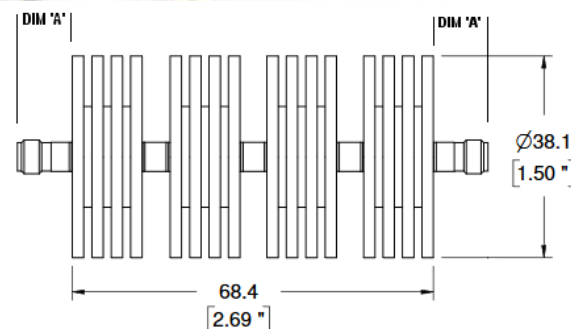
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA89

## DC – 40 GHz

## 20 WATTS



### Features

Precision 2.92 mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Compact construction meets a wide range of design requirements.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 40.0 GHz.

**Nominal dB Values:** 10 - 30 dB

**Power Coefficient:** < 0.005 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 20 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0 W at 125°C. 200 W peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

### Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |              |
|------------------|---------------|--------------|
|                  | DC to 18 GHz  | 18 to 40 GHz |
| 10 - 30          | 1.25          | +2.5/-0.0    |

### Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA88 |
| DC - 18.0       | 1.25 |
| 18.0 - 40.0     | 1.4  |

### Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | 2.92mm F -13         |
| 2.92mm M -14            | 11.5 (.45)           |

**Weight:** 0.2 (7.1)  
**Diameter:** 38.1 (1.5)

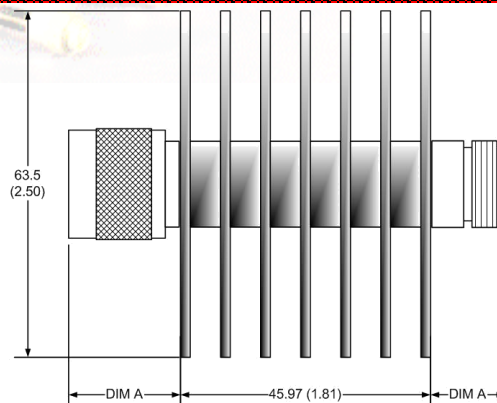
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Fixed Coaxial Attenuator

# WA90

**WA90/12: DC – 12.4 GHz**  
**WA90: DC – 18.0 GHz**

**50 WATTS**



## Features

Type N, TNC or SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA90/12: DC - 12.4 GHz.  
 WA90: DC - 18.0 GHz.

**Nominal dB Values:** 3 - 40 dB  
 (WA90/12 available in 50 and 60 dB variants)

**Power Coefficient:** < 0.0006 dB/dB/W;  
 Bidirectional in power.

**Power Rating:** 50 W maximum rated average power at 25°C, de-rated linearly to 5 W at 125°C. 1 kW peak power (5 μsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA90/12       | WA90 |
| 3                | 0.4           | 0.5  |
| 6                | 0.6           | 0.5  |
| 10               | 0.5           | 0.8  |
| 20               | 0.75          | 1.0  |
| 30               | 1.0           | 1.0  |
| 40 (50, 60)      | 1.0           | 2.0  |

## Maximum VSWR:

| Frequency (GHz) | VSWR    |      |
|-----------------|---------|------|
|                 | WA90/12 | WA90 |
| DC - 8.0        | 1.2     | 1.2  |
| 8.0 - 12.4      | 1.25    | 1.25 |
| 12.4 - 18.0     | N/A     | 1.35 |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | SMA F -01            |
| SMA M -02               | 10.9 (.43)           |
| N-Type F -03            | 14.9 (.59)           |
| N-Type M -04            | 22.7 (.89)           |
| TNC F -05               | 14.4 (.57)           |
| TNC M -06               | 17.7 (.70)           |

**Weight:** 0.2 (7.1) oz  
**Diameter:** 63.5 (2.5) mm

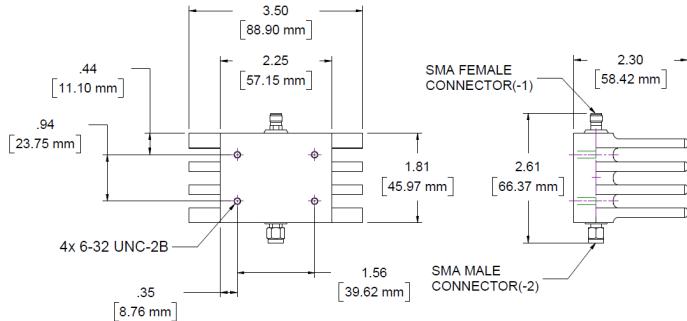
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Addition-*

# Fixed Coaxial Attenuator

# WA90B

## WA90B: DC – 18.0 GHz

## 50 WATTS



### Features

Type N, SMA, or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Nominal dB Values:** 3 - 40 dB

**Power Coefficient:** < 0.0006 dB/dB/W;  
Bidirectional in power.

**Power Rating:** **50 W** maximum rated average power at 25°C, de-rated linearly to 5 W at 125°C. **1 kW** peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

### Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA90B         |
| 3, 6, 10         | 0.5           |
| 20               | 0.75          |
| 30, 40           | 1.0           |

### Maximum VSWR:

| Frequency (GHz) | VSWR  |
|-----------------|-------|
|                 | WA90B |
| DC - 8.0        | 1.2   |
| 8.0 - 12.4      | 1.25  |
| 12.4 - 18.0     | 1.35  |

### Dimensions:

| Connector Type (- code) | Length     |
|-------------------------|------------|
|                         | Dim 'A'    |
| SMA F -01               | 9.8 (.39)  |
| SMA M -02               | 10.9 (.43) |
| N-Type F -03            | 14.9 (.59) |
| N-Type M -04            | 22.7 (.89) |
| TNC F -05               | 14.4 (.57) |
| TNC M -06               | 17.7 (.70) |

**Weight:** .41 (14.4)  
**Height:** 58.5 (2.3)  
**Width:** 89 (5.43)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

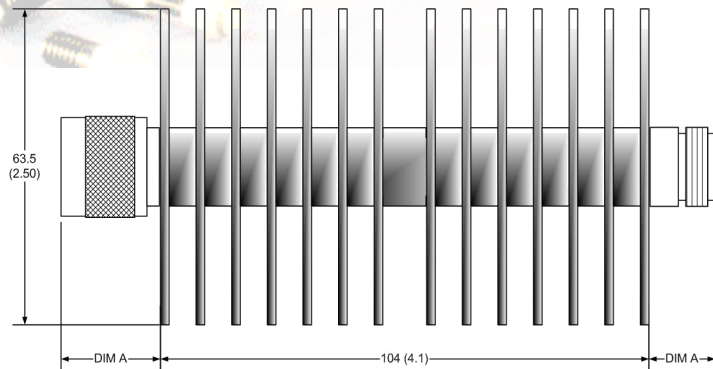


# Fixed Coaxial Attenuator

# WA91

WA91/12: DC – 12.4 GHz  
WA91: DC – 18.0 GHz

100 WATTS



## Features

Type N, SMA, or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA91/12: DC - 12.4 GHz.  
WA91: DC - 18.0 GHz.

**Nominal dB Values:** 3 - 40 dB

**Power Coefficient:** < 0.0005 dB/dB/W;  
Unidirectional in power. (3 and 6 dB units are bidirectional)

**Power Rating:** 100 W maximum rated average power at 25°C, de-rated linearly to 10 W at 125°C. 1 kW peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA91/12       | WA91 |
| 3, 6             | 1.0           | 1.0  |
| 10               | 0.75          | 0.75 |
| 20               | 1.0           | 1.0  |
| 30, 40           | 1.2           | 1.2  |

## Maximum VSWR:

| Frequency (GHz) | VSWR    |      |                   |
|-----------------|---------|------|-------------------|
|                 | WA91/12 | WA91 | WA91 at 3 or 6 dB |
| DC - 8.0        | 1.2     | 1.2  | 1.2               |
| 8.0 - 12.4      | 1.25    | 1.25 | 1.25              |
| 12.4 - 18.0     | N/A     | 1.35 | 1.45              |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | SMA F -01            |
| SMA M -02               | 10.9 (.43)           |
| N-Type F -03            | 14.9 (.59)           |
| N-Type M -04            | 22.7 (.89)           |
| TNC F -05               | 14.4 (.57)           |
| TNC M -06               | 17.7 (.70)           |

**Weight:** 0.35 (12.3)  
**Diameter:** 63.5 (2.5)

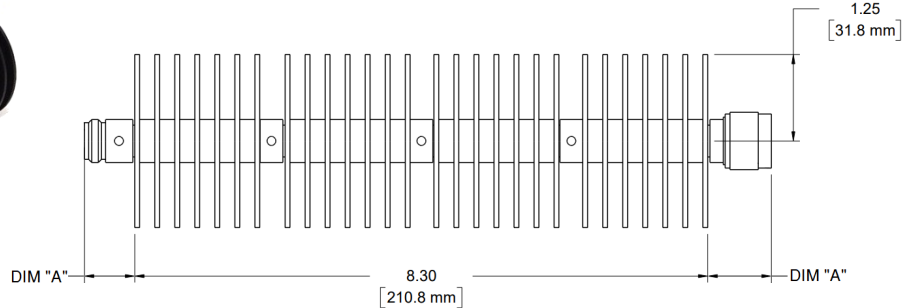
Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Fixed Coaxial Attenuator

# WA92

**WA92/12: DC – 12.4 GHz**  
**WA92: DC – 18.0 GHz**

**150 WATTS**



## Features

Type N, SMA, or TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA92/12: DC - 12.4 GHz.  
WA92: DC - 18.0 GHz.

**Nominal dB Values:** 10 - 40 dB

**Power Coefficient:** < 0.0002 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 150 W maximum rated average power at 25°C, de-rated linearly to 10 W at 125°C. 1 kW peak power (5 µsec pulse width, 7.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |      |
|------------------|---------------|------|
|                  | WA92/12       | WA92 |
| 10               | 2.0           | 2.0  |
| 20, 30, 40       | 1.5           | 1.5  |
| LIM              | 3.0           | 3.0  |

## Maximum VSWR:

| Frequency (GHz) | VSWR            |                      |             |                   |
|-----------------|-----------------|----------------------|-------------|-------------------|
|                 | WA92/12 (10 dB) | WA92/12 (20 - 40 Db) | WA92 (10dB) | WA92 (20 - 40 dB) |
| DC - 12.4       | 1.6             | 1.5                  | 1.6         | 1.5               |
| 12.4 - 18.0     | N/A             | N/A                  | 1.6         | 1.5               |
| LIM             | 1.5             | 1.5                  | 1.5         | 1.5               |

## Dimensions:

| Connector Type (- code) | Length Dimension 'A' |
|-------------------------|----------------------|
|                         | SMA F -01            |
| SMA M -02               | 10.9 (.43)           |
| N-Type F -03            | 14.9 (.59)           |
| N-Type M -04            | 22.7 (.89)           |
| TNC F -05               | 14.4 (.57)           |
| TNC M -06               | 17.7 (.70)           |

**Weight:** 0.35 (12.3)  
**Diameter:** 63.5 (2.5)

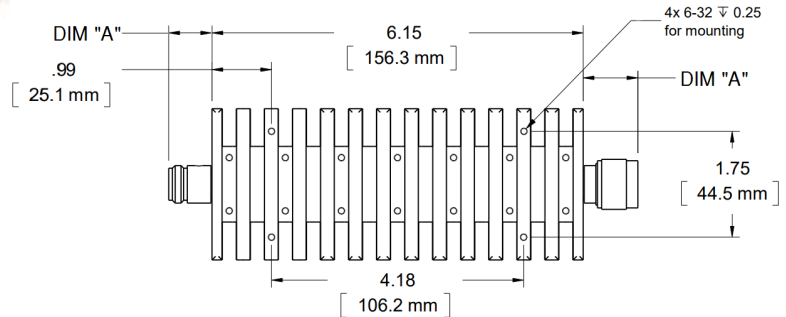
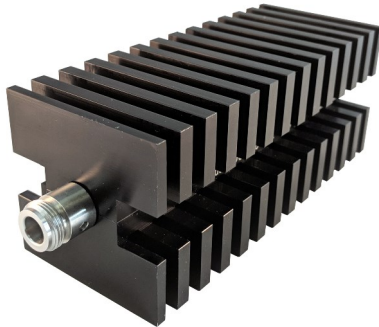
Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Fixed Coaxial Attenuator

# WA93

DC – 18.0 GHz

100 WATTS



## Features

SMA, Type N, and TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18 GHz

**Nominal dB Values:** 10 - 30 dB

**Power Sensitivity:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 100 W maximum rated average power at 25°C, de-rated linearly to 10 W at 125°C. 1 kW peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black finned aluminum alloy body with passivated stainless steel connectors and gold plated beryllium copper contact. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA93          |
| 10               | 1.5           |
| 20 - 30          | 1.4           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA93 |
| DC - 8.0        | 1.25 |
| 8.0 - 12.4      | 1.3  |
| 12.4 - 18.0     | 1.4  |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

**Height:** 63.5 (2.5)  
**Width:** 63.5 (2.5)  
**Weight:** 1.5 (52.9)  
**Mounting:** 4x 6-32 thru

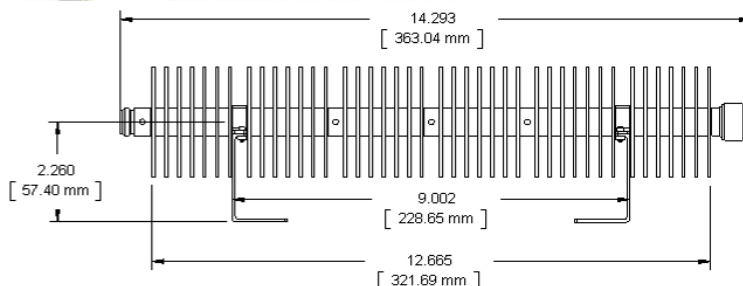
Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Fixed Coaxial Attenuator

# WA95

WA95/12: DC – 12.4 GHz  
WA95: DC – 18.0 GHz

200 WATTS



## Features

Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA95/12: DC - 12.4 GHz.  
WA95: DC - 18.0 GHz.

**Nominal dB Values:** 10 - 40 dB

**Power Coefficient:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 200 W maximum rated average power at 25°C, de-rated linearly to 20 W at 100°C. 1 kW peak power (5 µsec pulse width, 10% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

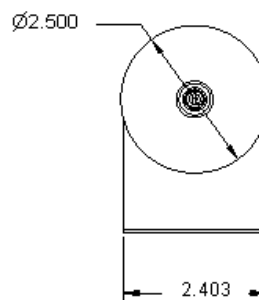
| Attenuation (dB) | Accuracy (dB) |             |
|------------------|---------------|-------------|
|                  | WA95/12       | WA95        |
| 3                | +1.0/-0.75    | +1.75/-0.75 |
| 6                | +2.0/-1.0     | +3.5/-1.0   |
| 10 - 40          | +2.0/-1.5     | +3.0/-2.0   |

## Maximum VSWR:

| Frequency (GHz) | VSWR    |      |
|-----------------|---------|------|
|                 | WA95/12 | WA95 |
| DC - 12.4       | 1.6     | 1.6  |
| 12.4 - 18.0     | N/A     | 1.6  |

## Dimensions:

Diameter: 63.5 (2.5)



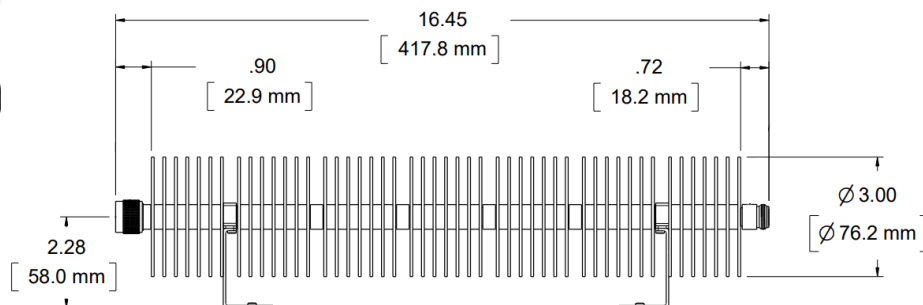
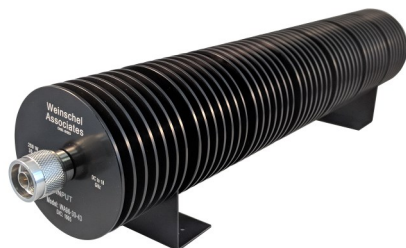
Length: 363.04 (14.29)  
Weight: 1.01 (35.82)

# Fixed Coaxial Attenuator

# WA96

DC – 18.0 GHz

250 WATTS



## Features

Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Mounting stands included.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18 GHz

**Nominal dB Values:** (10, 20, 30, 40) dB

**Power Sensitivity:** < 0.0001 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 250 W maximum rated average power at 25°C, de-rated linearly to 20 W at 125°C. 1 kW peak power (5 µsec pulse width, 3.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** <0.0004 dB/dB/°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors and gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

## Standard Nominal Values and Deviations:

| Attenuation (dB) | Accuracy (dB) |
|------------------|---------------|
|                  | WA96          |
| 10, 20, 30, 40   | +4.0/-2.5     |

**Maximum VSWR:** 1.6

## Dimensions:

|           |               |
|-----------|---------------|
| Height:   | 96.1 (3.78)   |
| Diameter: | 76.2 (3.0)    |
| Length:   | 417.8 (16.45) |
| Weight:   | 1.59 (.56)    |

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# COAXIAL TERMINATIONS

DC – 50.0 GHz

0.5 - 2000 WATTS

| Low Power Coaxial Terminations: 1 Watt to 10 Watts |                   |                            |                 |                               |          |
|--|-------------------|----------------------------|-----------------|-------------------------------|----------|
| Model Number                                       | Average Power (W) | Frequency Range DC - (GHz) | Peak Power (kW) | Connectors and Mounting Notes | Page No. |
| WA1405   | 0.5               | 50                         | 0.25            | 2.4 mm                        | 88       |
| WA1401/3   | 1                 | 3                          | 0.25            | SMA                           | 86       |
| WA1401/6   | 1                 | 6                          | 0.25            | SMA                           | 86       |
| WA1401/12  | 1                 | 12.4                       | 0.25            | SMA                           | 86       |
| WA1401/18  | 1                 | 18                         | 0.25            | SMA                           | 86       |
| WA1401/20  | 1                 | 20                         | 0.25            | SMA                           | 86       |
| WA1401/26  | 1                 | 26.5                       | 0.25            | SMA                           | 86       |
| WA1402   | 1                 | 40                         | 0.5             | 2.92 mm                       | 87       |
| WA1455/6   | 2                 | 6                          | 1               | N, TNC                        | 126      |
| WA1418   | 2                 | 6                          | 0.50            | BNC                           | 91       |
| WA1406   | 2                 | 12.4                       | 0.50            | SMA                           | 89       |
| WA1455/12  | 2                 | 12.4                       | 1               | N, TNC                        | 126      |
| WA1408   | 2                 | 18                         | 0.5             | SMA                           | 89       |
| WA1455   | 2                 | 18                         | 1               | N, TNC                        | 126      |
| WA1409   | 2                 | 26.5                       | 0.50            | SMA                           | 90       |
| WA1456   | 2                 | 32.0                       | 0.2             | 3.5 mm                        | 127      |
| WA1454   | 2                 | 40                         | 0.2             | 2.92 mm                       | 125      |
| WA1424/6   | 5                 | 6                          | 1               | N, TNC                        | 98       |
| WA1443/6   | 5                 | 6                          | 1               | SMA                           | 115      |
| WA1424/12  | 5                 | 12.4                       | 1               | N, TNC                        | 98       |
| WA1443/12  | 5                 | 12.4                       | 1               | SMA                           | 115      |
| WA1424   | 5                 | 18                         | 1               | N, TNC                        | 98       |
| WA1443   | 5                 | 18                         | 1               | SMA                           | 115      |
| WA1475   | 5                 | 40                         | 0.20            | 2.92 mm                       | 138      |
| WA1419/6   | 10                | 6                          | 1               | SMA                           | 92       |
| WA1425/6   | 10                | 6                          | 1               | N, TNC                        | 99       |
| WA1420   | 10                | 6                          | 1               | BNC                           | 93       |
| WA1419/12  | 10                | 12.4                       | 1               | SMA                           | 92       |
| WA1425/12  | 10                | 12.4                       | 1               | N, TNC                        | 99       |
| WA1419   | 10                | 18                         | 1               | SMA                           | 92       |
| WA1425   | 10                | 18                         | 1               | N, TNC                        | 99       |
| WA1476   | 10                | 40                         | 0.20            | 2.92 mm                       | 139      |
| WA1489   | 20                | 40                         | 0.20            | 2.92 mm                       | 143      |

\* Other configurations are available

Custom solutions at “off-the-shelf” prices



**WEINSCHEL ASSOCIATES**  
 TEL: 877.948.8342 / 301.963.4630 ♦ Fax: 301.963.8640  
 WEB: <http://www.WeinschelAssociates.com>  
 EMAIL: [sales@WeinschelAssociates.com](mailto:sales@WeinschelAssociates.com)

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Rev -

Specification  
 Subject to change  
 without notice

# COAXIAL TERMINATIONS

DC – 50.0 GHz

0.5 - 2000 WATTS

## Medium Power Coaxial Terminations: 20 Watts to 100 Watts

| Model Number | Average Power (W) | Frequency Range DC - (GHz) | Peak Power (kW) | Connectors and Mounting Notes      | Page No. |
|--------------|-------------------|----------------------------|-----------------|------------------------------------|----------|
| WA1434L      | 20                | 4                          | 5               | N, SMA, TNC, 7/16 DIN              | 110      |
| WA1421/4     | 25                | 4                          | 5               | N, SMA, TNC, Low-Profile Mountable | 94       |
| WA1421       | 25                | 8.5                        | 5               | N, SMA, TNC, Low-Profile Mountable | 94       |
| WA1434       | 25                | 4                          | 5               | N, SMA, TNC, 7/16 DIN              | 108      |
| WA1434B      | 25                | 4                          | 5               | N, SMA, TNC, Square Body Mountable | 109      |
| WA1452       | 25                | 4                          | 5               | N, SMA, TNC, 7/16 DIN              | 123      |
| WA1433       | 25                | 8.5                        | 5               | N, SMA, TNC, 7/16 DIN              | 108      |
| WA1433B      | 25                | 8.5                        | 5               | N, SMA, TNC, Square Body Mountable | 109      |
| WA1427       | 25                | 10                         | 1               | N, SMA, TNC                        | 102      |
| WA1446       | 25                | 18                         | 1               | N, SMA, TNC                        | 118      |
| WA1444       | 25                | 26.5                       | 0.50            | 3.5 mm, 2.92 mm                    | 116      |
| WA1423       | 50                | 4                          | 5               | N, SMA, TNC, 7/16 DIN              | 96       |
| WA1423B      | 50                | 4                          | 5               | N, SMA, TNC, Square Body Mount     | 97       |
| WA1471       | 50                | 4                          | 5               | N, SMA, TNC, Low-Profile Mountable | 136      |
| WA1426       | 50                | 8.5                        | 5               | N, SMA, TNC                        | 100      |
| WA1426B      | 50                | 8.5                        | 5               | N, SMA, TNC Square Body Mount      | 101      |
| WA1472       | 50                | 8.5                        | 5               | N, SMA, TNC, Low-Profile Mountable | 136      |
| WA1447       | 50                | 18                         | 1               | N, SMA                             | 119      |
| WA1490       | 50                | 18                         | 1               | N, SMA, TNC                        | 144      |
| WA1490B      | 50                | 18                         | 1               | N, SMA, TNC, Mountable             | 145      |
| WA1473       | 50                | 28                         | 0.5             | 3.5 mm                             | 137      |
| WA1488       | 50                | 40                         | 0.2             | 2.92 mm                            | 142      |
| WA1422       | 75                | 4                          | 5               | N, SMA, TNC, 7/16 DIN              | 95       |
| WA1429       | 75                | 8.5                        | 5               | N, SMA, TNC, 7/16 DIN              | 104      |
| WA1459       | 100               | 3                          | 10              | N, SMA, TNC, Low-Profile Mountable | 130      |
| WA1459/6     | 100               | 6                          | 10              | N, SMA, TNC, Low-Profile Mountable | 131      |
| WA1430       | 100               | 4                          | 5               | N, SMA, TNC, 7/16 DIN              | 105      |
| WA1432       | 100               | 4                          | 5               | N, SMA, TNC, 7/16 DIN              | 107      |
| WA1431       | 100               | 8.5                        | 5               | N, SMA, TNC, 7/16 DIN              | 106      |
| WA1448       | 100               | 18                         | 1               | N, SMA, TNC                        | 120      |
| WA1491       | 100               | 18                         | 1               | N, SMA, TNC                        | 146      |

## WEINSCHEL ASSOCIATES

TEL: 877.948.8342 / 301.963.4630 ♦ Fax: 301.963.8640

WEB: <http://www.WeinschelAssociates.com>

EMAIL: [sales@WeinschelAssociates.com](mailto:sales@WeinschelAssociates.com)



# COAXIAL TERMINATIONS

DC – 50.0 GHz

0.5 - 2000 WATTS

## High Power Coaxial Terminations: 150 Watts to 2000 Watts

| Model Number | Average Power (W) | Frequency Range DC - (GHz) | Peak Power (kW) | Connectors and Mounting Notes | Page No. |
|--------------|-------------------|----------------------------|-----------------|-------------------------------|----------|
| WA1428       | 150               | 3                          | 10              | N, SMA, TNC, 7/16 DIN         | 103      |
| WA1439       | 150               | 3                          | 10              | N, 7/16 DIN                   | 114      |
| WA1465       | 150               | 3                          | 10              | N, 7/16 DIN                   | 133      |
| WA1457       | 150               | 5                          | 10              | N, SMA, TNC, 7/16 DIN         | 128      |
| WA1449       | 150               | 8.5                        | 5               | N, SMA, 7/16 DIN              | 121      |
| WA1466       | 150               | 18                         | 5               | N, SMA, TNC                   | 134      |
| WA1495       | 200               | 18                         | 1               | N-type                        | 147      |
| WA1445       | 250               | 3                          | 10              | N, TNC, 7/16 DIN              | 117      |
| WA1458       | 250               | 6                          | 10              | N, TNC, 7/16 DIN              | 129      |
| WA1435       | 250               | 8.5                        | 5               | N, SMA, TNC, 7/16 DIN         | 111      |
| WA1496       | 250               | 18                         | 1               | N, TNC                        | 148      |
| WA1438       | 300               | 5                          | 5               | N, 7/16 DIN                   | 113      |
| WA1436       | 300               | 8.5                        | 5               | N, 7/16 DIN                   | 112      |
| WA1453       | 500               | 3                          | 10              | N, 7/16 DIN                   | 124      |
| WA1460       | 500               | 5                          | 10              | N, 7/16 DIN                   | 132      |
| WA1451       | 500               | 8.5                        | 5               | N, 7/16 DIN                   | 122      |
| WA1481       | 500               | 10                         | 5               | N, 7/16 DIN                   | 141      |
| WA1470       | 1000              | 3                          | 10              | N, 7/16 DIN                   | 135      |
| WA1480       | 2000              | 3                          | 10              | N, 7/16 DIN                   | 140      |



\* Other configurations are available

Custom solutions at “off-the-shelf” prices

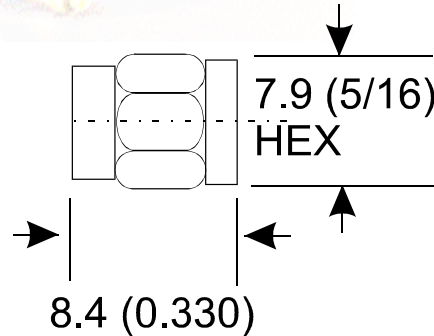
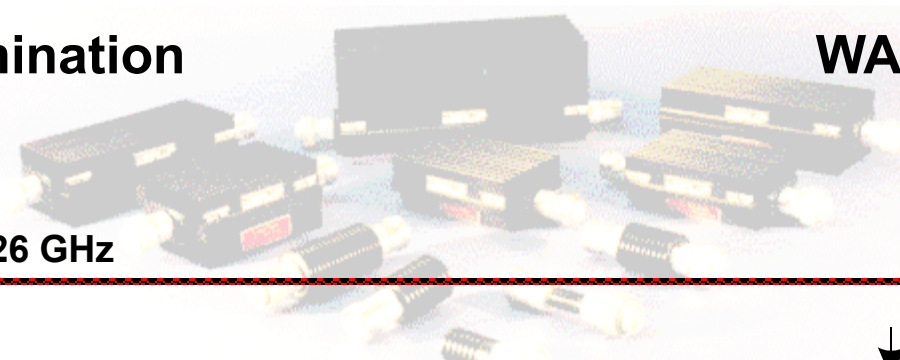


# Termination

# WA1401/XX

DC – 26 GHz

1 WATT



## Features

Type SMA Male stainless steel connector per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-39030 environmental specification. *Lightweight, subminiature design.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1401/3: DC to 3.0 GHz.  
WA1401/6: DC to 6.0 GHz.  
WA1401/12: DC to 12.4 GHz.  
WA1401/18: DC to 18.0 GHz.  
WA1401/20: DC to 20.0 GHz.  
WA1401/26: DC to 26.5 GHz.

**Power Rating:** 1 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0 W at 125°C. 500 W peak power (5 µsec pulse width, 0.10% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Passivated stainless steel body and connector. Gold plated beryllium copper contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Options:** Chain

## Maximum VSWR:

| Frequency (GHz) | VSWR                  |
|-----------------|-----------------------|
|                 | WA1401 (all variants) |
| DC - 8.0        | 1.1 *                 |
| 8.0 - 12.4      | 1.15                  |
| 12.4 - 18.0     | 1.2                   |
| 18.0 - 26.5     | 1.35                  |

\*Typically DC - 4 GHz < 1.05

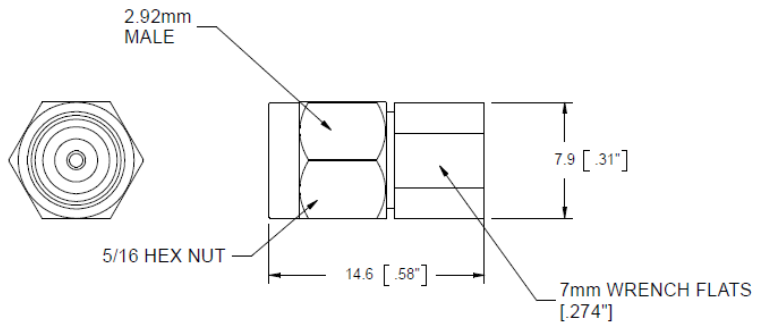
| Dimension        | Connector Type |             |
|------------------|----------------|-------------|
|                  | SMA (F), -01   | SMA (M) -02 |
| Length (Dim A)   | 12.4 (.49)     | 8.4 (.33)   |
| Weight (nominal) | 1.8 (.064)     | 2.1 (.074)  |

## Dimensions:

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC – 40 GHz

1 WATT



## Features

Precision 2.92 mm M stainless steel connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-39030 environmental specification. High frequency design.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 40 GHz

**Power Rating:** 1 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.1 W at 125°C. 500 W peak power (5 µsec pulse width, 0.10% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Passivated stainless steel body and connector. Gold plated beryllium copper contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Options:** Chain  
Female 2.92 mm

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1402 |
| DC - 40.0       | 1.2    |

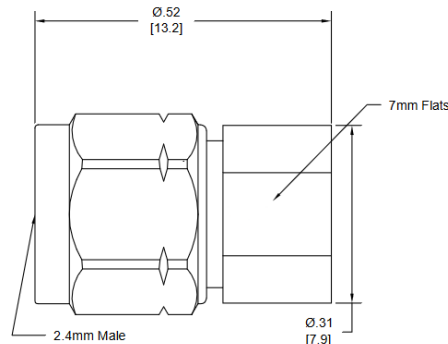
## Dimensions:

**Length:** 14.5 (.57)  
**Weight:** 3.83 (.135)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC – 50 GHz

0.5 WATT



## Features

Precision 2.4 mm M stainless steel connector per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-39030 environmental specification. High frequency design.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 50 GHz

**Power Rating:** 0.5 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 10% W at 125°C. 500 W peak power ( 5 µsec pulse width, 0.05% duty cycle.)

**Temperature Range:** -55°C to +125°C.

**Construction:** Passivated stainless steel body and connector. Gold plated beryllium copper contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Options:** Chain  
Female 2.4 mm  
1 and 2 Watt Designs Available

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1405 |
| DC - 50.0       | 1.45   |

## Dimensions:

**Length:** 13.2 (.52)  
**Weight:** 3.5 (.12)

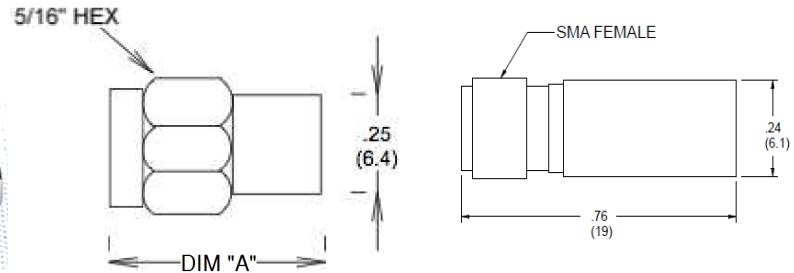
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Termination

# WA1406 & WA1408

WA1406\*: DC – 12.4 GHz  
WA1408: DC – 18.0 GHz

2 WATTS



## Features

Type SMA stainless steel connector per MIL-STD -348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-39030 environmental specification. Compact, rugged design.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1406: DC - 12.4 GHz.  
WA1408: DC - 18.0 GHz.

**Power Rating:** 2 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 10% W at 125°C. 500 W peak power (5 µsec pulse width, 0.20% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Passivated stainless steel body and connector. Gold plated beryllium copper contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |        |
|-----------------|--------|--------|
|                 | WA1406 | WA1408 |
| DC - 4.0        | 1.15   | 1.15   |
| 4.0 - 8.0       | 1.2    | 1.2    |
| 8.0 - 12.4      | 1.25   | 1.25   |
| 12.4 - 18.0     | N/A    | 1.25   |

## Dimensions:

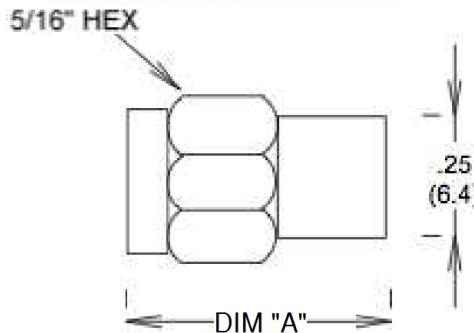
| Dimension        | Connector Type |             |
|------------------|----------------|-------------|
|                  | SMA (F), -1    | SMA (M) -2  |
| Length (Dim A)   | 19.3 (.76)     | 13.7 (0.52) |
| Weight (nominal) | 1.9 (.067)     | 2.9 (0.1)   |

\*WA1406 previously named WA1406A

Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

DC – 26.5 GHz

2 WATT



## Features

Type SMA stainless steel connector per MIL-STD -348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-39030 environmental specification. Compact, rugged design.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 26.5 GHz

**Power Rating:** 2 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 10% W at 125°C. 500 W peak power (5 µsec pulse width, 0.20% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Passivated stainless steel body and connector. Gold plated beryllium copper or stainless steel contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1405 |
| DC - 26.5       | 1.25   |

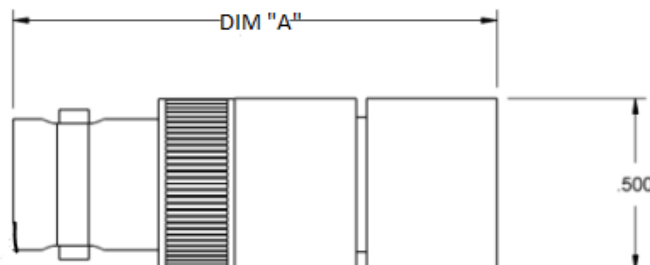
## Dimensions:

| Dimension        | Connector Type |             |
|------------------|----------------|-------------|
|                  | SMA (F), -1    | SMA (M) -2  |
| Length (Dim A)   | 12.4 (.49)     | 13.7 (0.52) |
| Weight (nominal) | 1.9 (.067)     | 2.9 (0.1)   |

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC – 6.0 GHz

2 WATT



## Features

Type BNC stainless steel connector per MIL-STD -348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 6.0 GHz

**Power Rating:** 2 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.5 W at 125°C. 1 kW peak power (5 µsec pulse width, 0.10% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Passivated stainless steel body, nickel plated brass connector. Gold plated beryllium copper or stainless steel contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Option:** Chain.

## Maximum VSWR:

| Frequency (GHz) | VSWR WA1418 |
|-----------------|-------------|
| DC - 4.0        | 1.25        |
| 4.0 - 6.0       | 1.3         |

## Dimensions:

| Dimension        | Connector Type |             |
|------------------|----------------|-------------|
|                  | BNC (F), -19   | BNC (M) -20 |
| Length (Dim A)   | 28.8 (1.33)    | 28.8 (1.33) |
| Weight (nominal) | 24.9 (0.88)    | 25.2 (0.89) |

**Diameter:** 12.7 (0.5)

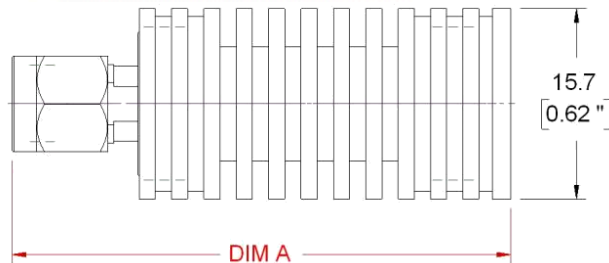
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Termination

# WA1419

WA1419/6: DC – 6.0 GHz  
WA1419/12: DC – 12.4 GHz  
WA1419: DC – 18.0 GHz

**10 WATTS**



## Features

Type SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1419: DC - 18.0 GHz.  
WA1419/6: DC - 6.0 GHz.  
WA1419/12: DC - 12.4 GHz.

**Power Rating:** 10 W maximum rated average power at 25°C, de-rated linearly to 0.5 W at 125°C. 1 kW peak power (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Option:** Chain.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |          |           |
|-----------------|--------|----------|-----------|
|                 | WA1419 | WA1419/6 | WA1419/12 |
| DC - 8.0        | 1.2    | 1.2      | 1.2       |
| 8.0 - 12.4      | 1.3    | N/A      | 1.3       |
| 12.4 - 18.0     | 1.35   | N/A      | N/A       |

## Dimensions and Weight (both models):

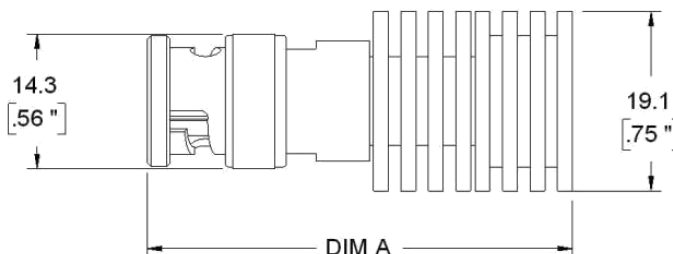
| Dimension        | Connector Type |             |
|------------------|----------------|-------------|
|                  | SMA (F), -1    | SMA (M) -20 |
| Length (Dim A)   | 39.4 (1.55)    | 41.4 (1.63) |
| Weight (nominal) | 9.9 (0.35)     | 9.9 (0.35)  |

Diameter: 15.7 (0.62)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC – 6.0 GHz

10 WATT



## Features

Type BNC stainless steel connector per MIL-STD -348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 6.0 GHz

**Power Rating:** 10 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.5 W at 125°C. 1 KW peak power (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy and passivated stainless steel body, nickel plated brass connector. Gold plated beryllium copper or stainless steel contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR:

| Frequency (GHz) | VSWR WA1420 |
|-----------------|-------------|
| DC - 4.0        | 1.25        |
| 4.0 - 6.0       | 1.3         |

## Dimensions and Weight:

| Dimension        | Connector Type |             |
|------------------|----------------|-------------|
|                  | BNC (F), -19   | BNC (M) -20 |
| Length (Dim A)   | 40.6 (1.6)     | 41.4 (1.63) |
| Weight (nominal) | .01 (.35)      | .01 (.35)   |

Diameter: 19.1 (0.75)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

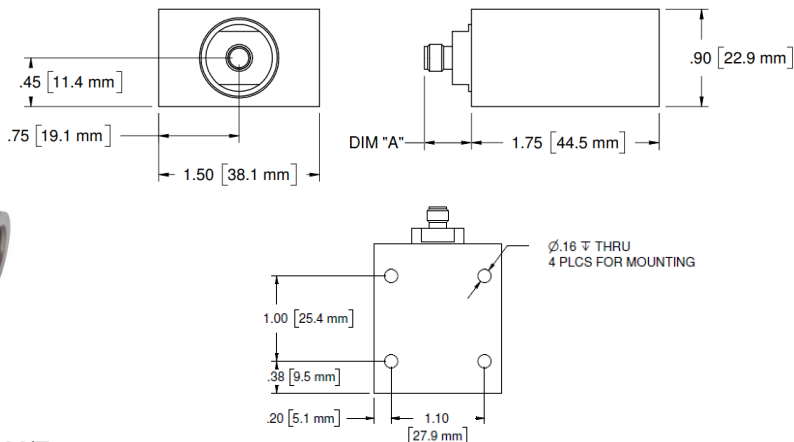


# Termination

# WA1421

**WA1421/4:** DC – 4.0 GHz  
**WA1421:** DC – 8.5 GHz

**25 WATTS**



## Features

SMA, N-type or TNC stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1421: DC - 8.5 GHz.  
 WA1421/4: DC - 4.0 GHz.

**Power Rating:** **25 W** maximum rated average power with case temperature held to +100°C using conductive heat sink. **5 kW** peak power (5 usec pulse width, 0.25% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |          |
|-----------------|--------|----------|
|                 | WA1421 | WA1421/4 |
| DC - 4.0        | 1.2    | 1.2      |
| 4.0 - 8.5       | 1.3    | N/A      |

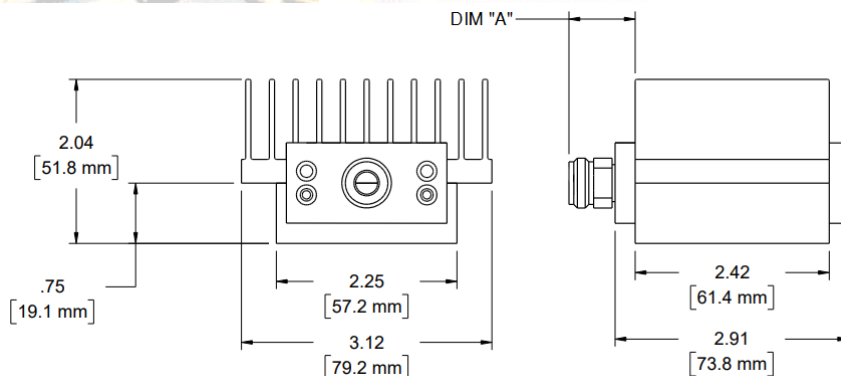
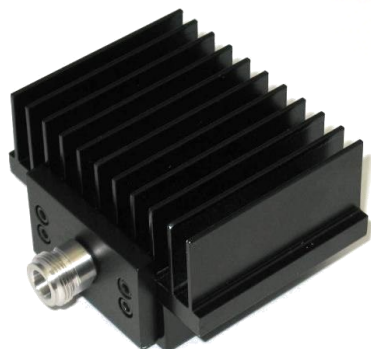
## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

**Weight:** 0.17 (6.0)  
**Height:** 22.90 (0.9)  
**Width:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation attribute.



### Features

Type N, DIN 7/16, TNC or SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 4.0 GHz.

**Power Rating:** 75 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 15 W at 125°C. 5 kW peak power (5 µsec pulse width, 0.75% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

### Maximum VSWR:

| Frequency (GHz) | VSWR<br>WA1422 |
|-----------------|----------------|
| DC - 4.0        | 1.2            |

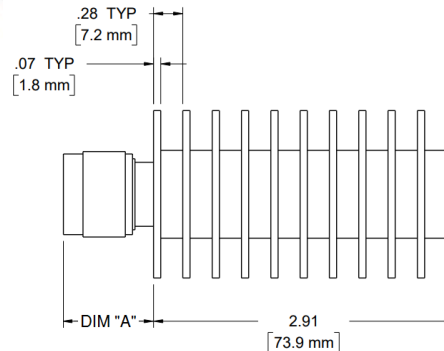
### Dimensions:

| Connector Type (- code) | Length<br>Dimension 'A' |
|-------------------------|-------------------------|
| SMA F -01               | 9.8 (.39)               |
| SMA M -02               | 10.9 (.43)              |
| N-Type F -03            | 14.9 (.59)              |
| N-Type M -04            | 22.7 (.89)              |
| TNC F -05               | 14.4 (.57)              |
| TNC M -06               | 17.7 (.70)              |
| 7/16 DIN F -07          | 30.5 (1.2)              |
| 7/16 DIN M -08          | 31.8 (1.25)             |

**Weight:** .55 (19.2)  
**Height:** 51.8 (2.04)  
**Width:** 79.2 (3.12)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation attribute.



### Features

Type N, DIN 7/16, TNC, or SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 4.0 GHz.

**Power Rating:** **50 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 2.5 W at 125°C. **5 kW** peak power (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1423 |
| DC - 4.0        | 1.2    |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

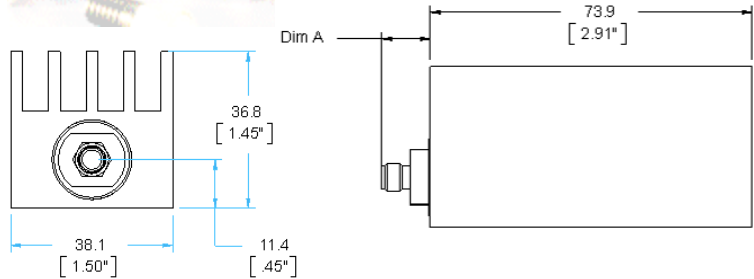
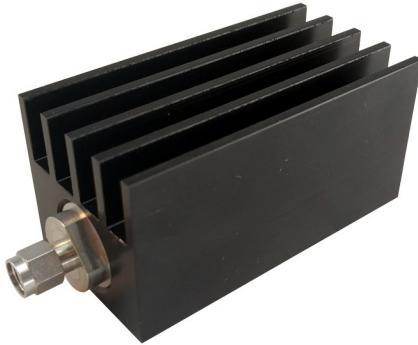
**Weight:** .28 (9.88)  
**Diameter:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation attribute.

DC – 4.0 GHz

50 WATTS



## Features

Type N, TNC, or SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

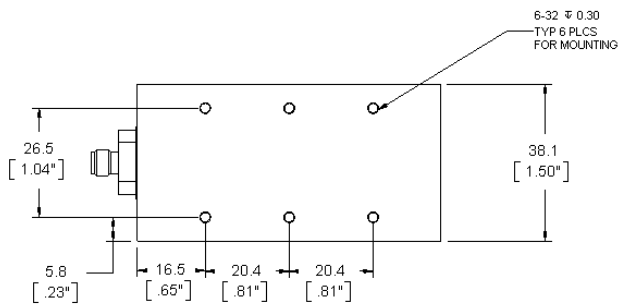
**Frequency Range:** DC - 4.0 GHz.

**Power Rating:** 50 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 2.5 W at 125°C. 5 kW peak power (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.



### Maximum VSWR:

| Frequency (GHz) | VSWR    |
|-----------------|---------|
|                 | WA1423B |
| DC - 4.0        | 1.2     |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

**Weight:** 0.28 (9.88)  
**Height:** 37.08 (1.46)  
**Width:** 38.1 (1.5)  
**Mounting:** 6x 6-32, 0.3"

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

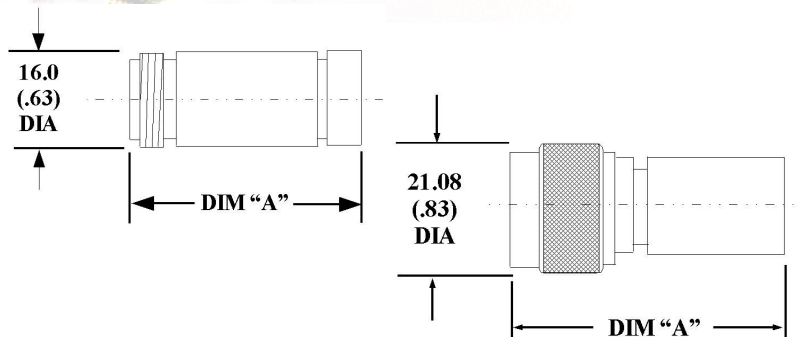
**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation attribute.

# Termination

# WA1424

WA1424/6: DC – 6.0 GHz  
 WA1424/12: DC – 12.4 GHz  
 WA1424: DC – 18.0 GHz

**5 WATTS**



### Maximum VSWR

| Frequency (GHz) | VSWR   |          |           |
|-----------------|--------|----------|-----------|
|                 | WA1424 | WA1424/6 | WA1424/12 |
| DC - 2.0        | 1.05   | 1.05     | 1.05      |
| 2.0 - 4.0       | 1.07   | 1.07     | 1.07      |
| 4.0 - 8.0       | 1.15   | 1.15     | 1.15      |
| 8.0 - 12.4      | 1.3    | N/A      | 1.3       |
| 12.4 - 18.0     | 1.35   | N/A      | N/A       |

### Features

N-type or TNC stainless steel M/F connector per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1424: DC - 18.0 GHz  
 WA1424/6: DC - 6.0 GHz  
 WA1424/12: DC - 12.4 GHz

**Power Rating:** 5 W maximum rated average power at 25°C, de-rated linearly to 0 W at 125°C. 1 kW peak power (5 µsec pulse width, 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

### Dimensions:

| Dimension        | Connector Type |                |               |               |
|------------------|----------------|----------------|---------------|---------------|
|                  | N-Type (F) -03 | N-Type (M) -04 | TNC (F) -05   | TNC (M) -06   |
| Length (Dim A)   | 40<br>(1.57)   | 45<br>(1.77)   | 45<br>(1.77)  | 48<br>(1.89)  |
| Weight (nominal) | .06<br>(2.12)  | .06<br>(2.12)  | .062<br>(2.2) | .062<br>(2.2) |

Body diameter: 16.0 (0.63)

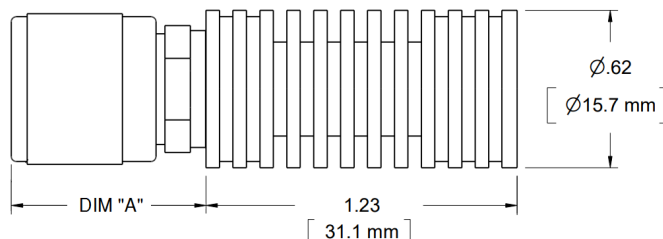
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Termination

# WA1425

WA1425/6: DC – 6.0 GHz  
WA1425/12: DC – 12.4 GHz  
WA1425: DC – 18.0 GHz

10 WATTS



## Features

Type N or TNC stainless steel M/F connector per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1424: DC - 18.0 GHz  
WA1424/6: DC - 6.0 GHz  
WA1424/12: DC - 12.4 GHz

**Power Rating:** 10 W maximum rated average power at 25°C, de-rated linearly to 0.5 W at 125°C. 1 kW peak power (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR

| Frequency (GHz) | VSWR   |          |           |
|-----------------|--------|----------|-----------|
|                 | WA1425 | WA1425/6 | WA1425/12 |
| DC - 2.0        | 1.05   | 1.05     | 1.05      |
| 2.0 - 4.0       | 1.07   | 1.07     | 1.07      |
| 4.0 - 8.0       | 1.15   | 1.15     | 1.15      |
| 8.0 - 12.4      | 1.3    | N/A      | 1.3       |
| 12.4 - 18.0     | 1.35   | N/A      | N/A       |

## Dimensions:

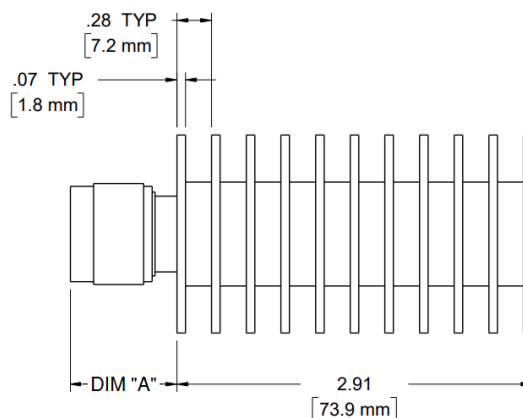
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

**Weight:** 0.11 (3.88)  
**Body Diameter:** 16.0 (0.63)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC – 8.5 GHz

50 WATTS



## Features

Type N, TNC, or SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 8.5 GHz.

**Power Rating:** 50 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 2.5 W at 125°C. 5 kW peak power (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1426 |
| DC - 4.0        | 1.2    |
| 4.0 - 8.5       | 1.3    |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

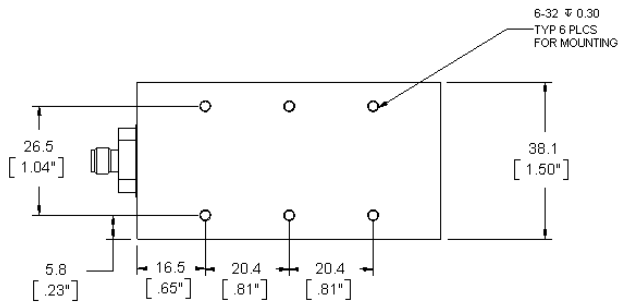
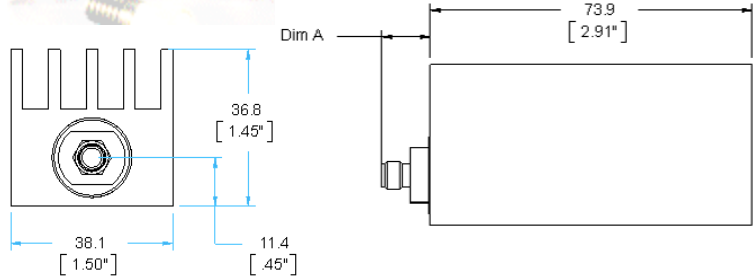
**Weight:** .28 (9.88)  
**Diameter:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation attribute.

DC – 8.5 GHz

50 WATTS



## Features

Type N, TNC, or SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 8.5 GHz.

**Power Rating:** 50 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 2.5 W at 125°C. 5 kW peak power (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

### Maximum VSWR:

| Frequency (GHz) | VSWR    |
|-----------------|---------|
|                 | WA1426B |
| DC - 4.0        | 1.2     |
| 4.0 - 8.5       | 1.3     |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

**Weight:** 0.28 (9.88)  
**Height:** 37.08 (1.46)  
**Width:** 38.1 (1.5)  
**Mounting:** 6x 6-32, 0.3

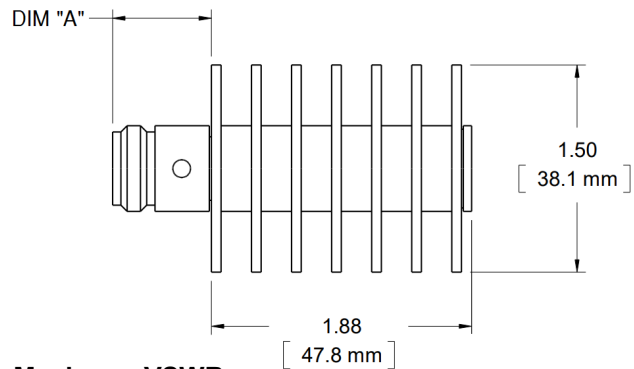
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation attribute.



DC – 10.0 GHz

25 WATTS



Maximum VSWR:

| Frequency (GHz) | VSWR   | VSWR           |
|-----------------|--------|----------------|
|                 | WA1427 | WA1427-5 or -6 |
| DC - 4.0        | 1.1    | 1.15           |
| 4.0 - 8.0       | 1.15   | 1.25           |
| 8.0 - 10.0      | 1.25   | 1.3            |

## Features

Type N, TNC, or SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 10.0 GHz.

**Power Rating:** 25 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 2.5 W at 125°C. 1 kW peak power (5 µsec pulse width, 1.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Dimensions:**  
**Weight:** .28 (9.88)  
**Diameter:** 38.1 (1.5)

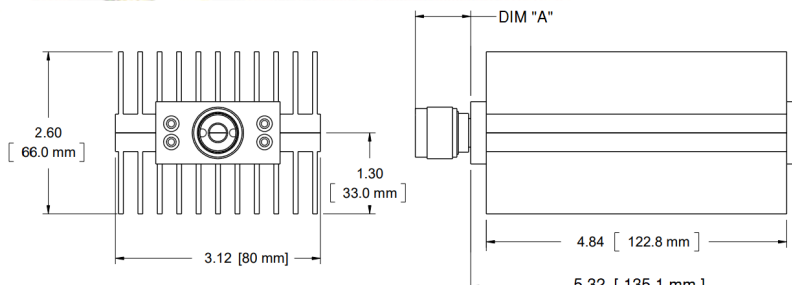
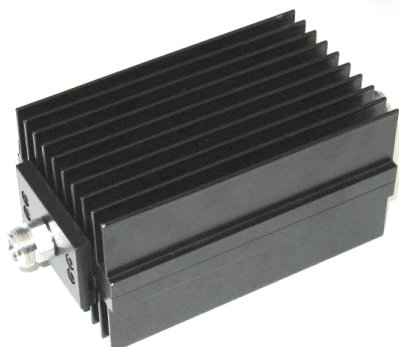
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation attribute.

DC – 3.0 GHz

150 WATTS



## Features

Type N, TNC, SMA or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 3.0 GHz.

**Power Rating:** 150 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 15 W at 125°C. 10 kW peak power (5 µsec pulse width, 0.75% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1428 |
| DC - 1.5        | 1.1    |
| 1.5 - 2.5       | 1.2    |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

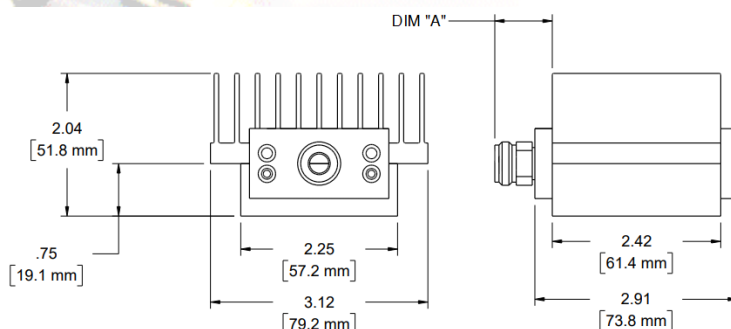
**Weight:** 1.13 (39.9)  
**Height:** 66 (2.6)  
**Width:** 80 (3.12)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation attribute.

DC - 8.5 GHz

75 WATTS



## Features

Type N, TNC, SMA or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 8.5 GHz.

**Power Rating:** 75 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 5 W at 125°C. 5 kW peak power (5 µsec pulse width, 0.75% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation

## Maximum VSWR:

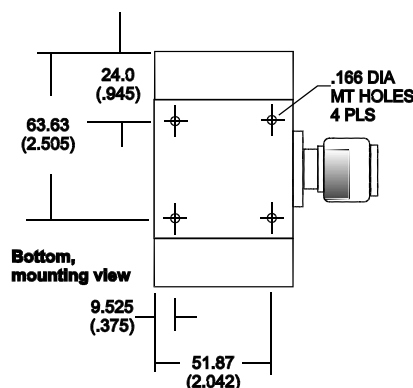
| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1429 |
| DC - 4.0        | 1.2    |
| 4.0 - 8.5       | 1.3    |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 0.5 (17.6)  
**Height:** 51.8 1(2.04)  
**Width:** 79.2 (3.12)  
**Mounting:** 4x.166 diameter holes

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# WEINSCHEL ASSOCIATES

TEL: 877.948.8342 / 301.963.4630 ♦ Fax: 301.963.8640

WEB: <http://www.WeinschelAssociates.com>

EMAIL: [sales@WeinschelAssociates.com](mailto:sales@WeinschelAssociates.com)

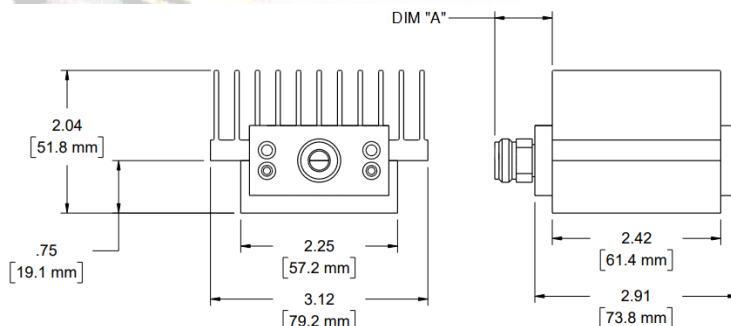


# Termination

# WA1430

## DC - 4.0 GHz

## 100 WATTS



### Features

Type N, TNC, SMA or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 4.0 GHz.

**Power Rating:** 100 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 10 W at 125°C. 5 kW peak power (5 µsec pulse width, 1.0% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation

### Maximum VSWR:

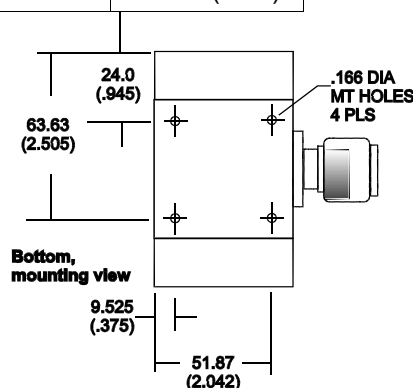
| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1430 |
| DC - 4.0        | 1.2    |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 0.5 (17.6)  
**Height:** 51.8 (2.04)  
**Width:** 79.2 (3.12)  
**Mounting:** 4x.166 diameter holes

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



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WEB: <http://www.WeinschelAssociates.com>

EMAIL: [sales@WeinschelAssociates.com](mailto:sales@WeinschelAssociates.com)



105

Rev -

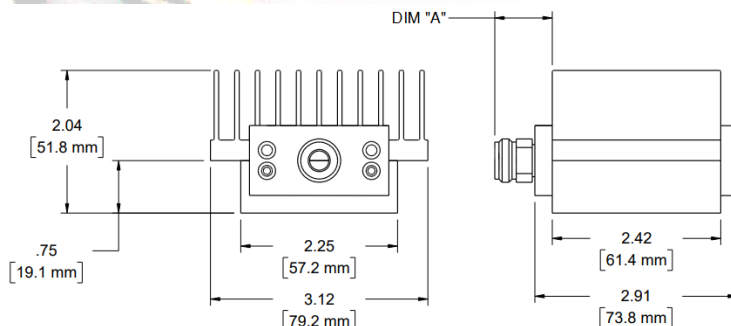
Specification  
Subject to change  
without notice

# Termination

# WA1431

## DC - 8.5 GHz

## 100 WATTS



### Features

Type N, TNC, SMA or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 8.5 GHz.

**Power Rating:** 100 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 10 W at 125°C. 5 kW peak power (5 µsec pulse width, 1.0% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation

### Maximum VSWR:

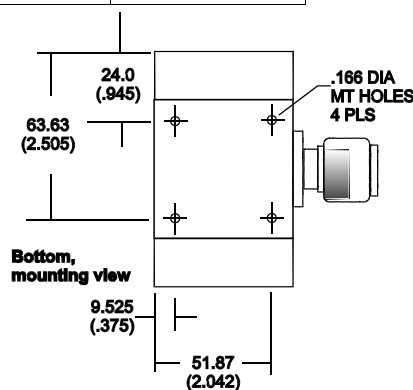
| Frequency (GHz) | VSWR WA1431 |
|-----------------|-------------|
| DC - 4.0        | 1.2         |
| 4.0 - 8.5       | 1.3         |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 0.5 (17.6)  
**Height:** 51.8 (2.04)  
**Width:** 79.2 (3.12)  
**Mounting:** 4x.166 diameter holes

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



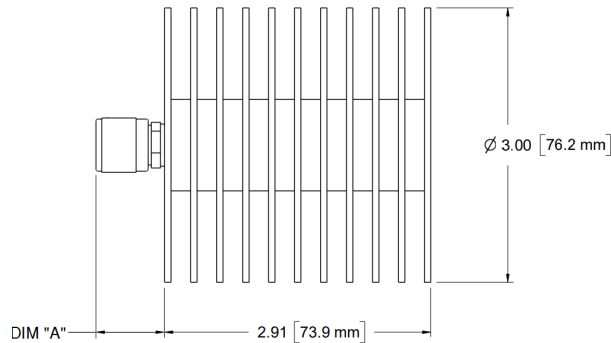
# WEINSCHEL ASSOCIATES

TEL: 877.948.8342 / 301.963.4630 ♦ Fax: 301.963.8640

WEB: <http://www.WeinschelAssociates.com>

EMAIL: [sales@WeinschelAssociates.com](mailto:sales@WeinschelAssociates.com)





### Features

Type N, TNC, SMA or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 4.0        | 1.25 |

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 4.0 GHz.

**Power Rating:** 100 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 5 W at 125°C. 5 kW peak power (5 µsec pulse width, 1.0% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation attribute.

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 0.37 (13.1)  
**Diameter:** 76.2 (3.0)

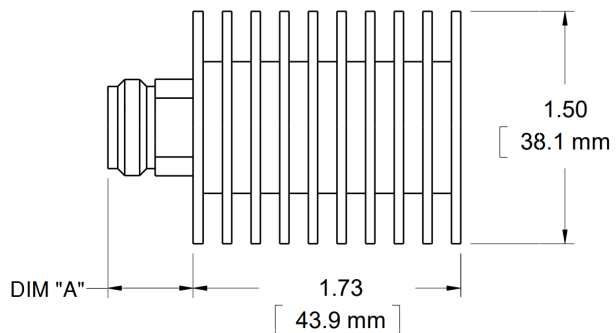
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Termination

# WA1433 & WA1434

WA1434: DC - 4.0 GHz  
WA1433: DC - 8.5 GHz

25 WATTS



## Features

Type N, TNC, SMA or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1434: DC - 4.0 GHz.  
WA1433: DC - 8.5 GHz.

**Power Rating:** 25 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 1.5 W at 125°C. 5 kW peak power (5 µsec pulse width, 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Maximum VSWR:

| Frequency (GHz) | VSWR           |
|-----------------|----------------|
|                 | WA1433, WA1434 |
| DC - 4.0        | 1.2            |
| 4.0 - 8.5       | 1.3            |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** .28 (9.88)  
**Diameter:** 38.1 (1.5)

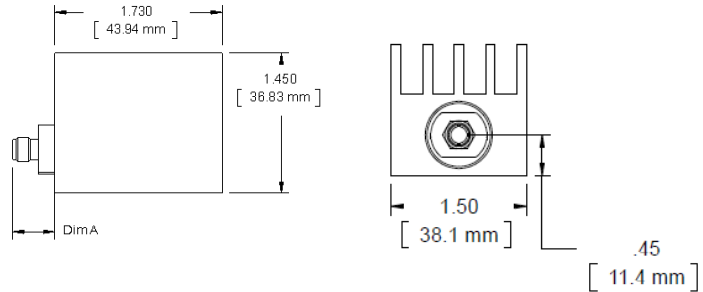
*Note: Dimensions are given in mm (in), ork g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Termination

# WA1433B & WA1434B

WA1434B: DC - 4.0 GHz  
 WA1433B: DC - 8.5 GHz

25 WATTS



## Features

Type N, TNC, or SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1434: DC - 4.0 GHz.  
 WA1433: DC - 8.5 GHz.

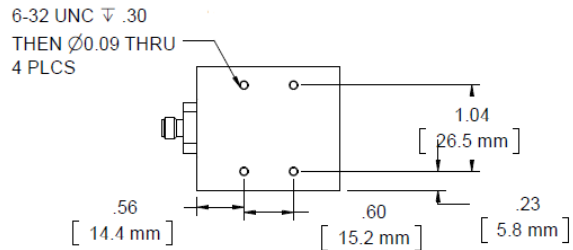
**Power Rating:** 25 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 1.5 W at 125°C. 5 kW peak power (5 µsec pulse width, 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.



## Maximum VSWR:

| Frequency (GHz) | VSWR             |
|-----------------|------------------|
|                 | WA1433B, WA1434B |
| DC - 4.0        | 1.2              |
| 4.0 - 8.5       | 1.3              |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

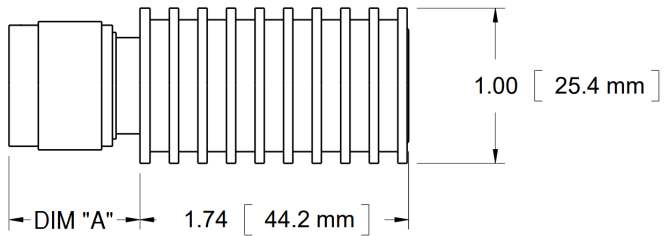
**Weight:** 0.17 (6.06)  
**Height:** 36.8 (1.45)  
**Width:** 38.1 (1.5)  
**Mounting:** 4x 6-32 UNC, 0.09 Thru

Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.



DC - 4.0 GHz

20 WATTS



## Features

Type N, TNC, SMA or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 4.0 GHz.

**Power Rating:** 20 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 1.5 W at 125°C. 5 kW peak power (5 µsec pulse width, 0.2% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR:

| Frequency (GHz) | VSWR    |
|-----------------|---------|
|                 | WA1434L |
| DC - 4.0        | 1.2     |

## Dimensions:

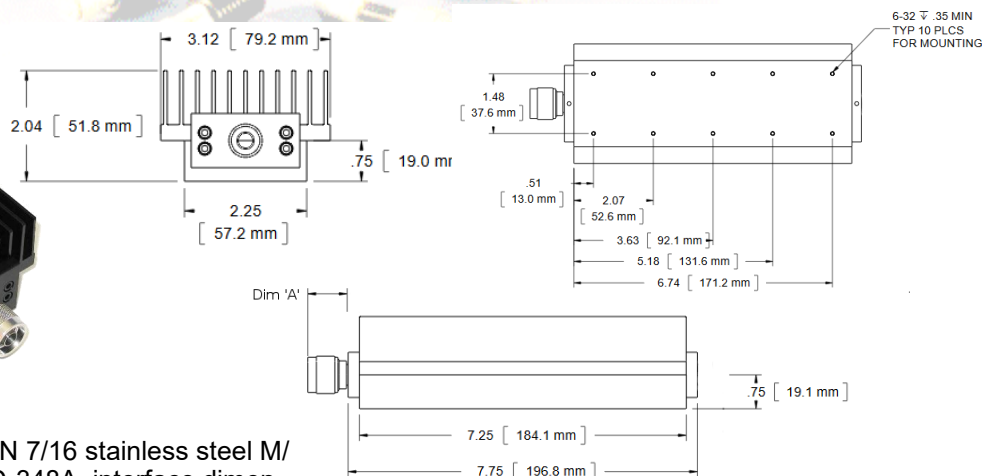
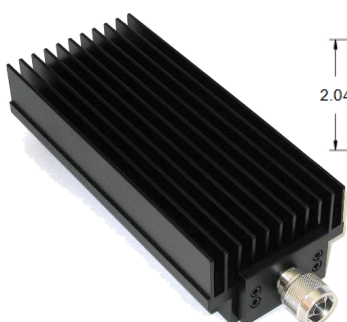
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** .28 (9.88)  
**Diameter:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC - 8.5 GHz

250 WATTS



## Features

Type N, TNC, SMA or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 8.5 GHz.

**Power Rating:** 250 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 15 W at 125°C. 5 kW peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Maximum VSWR:

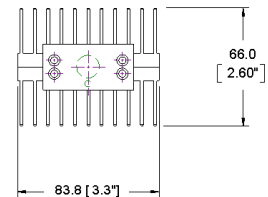
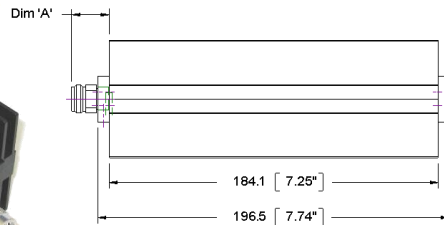
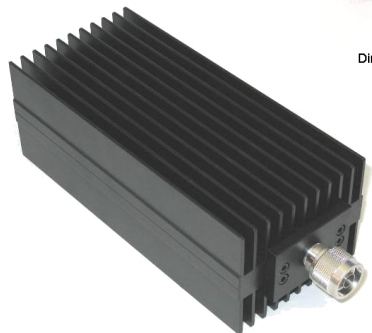
| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1435 |
| DC - 4.0        | 1.3    |
| 4.0 - 8.5       | 1.45   |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 0.5 (17.6)  
**Height:** 51.8 (2.04)  
**Width:** 79.2 (3.12)  
**Mounting:** 6-32 .35"

Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.



### Features

Type N or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 8.5 GHz.

**Power Rating:** **300 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 15 W at 125°C. **5 kW** peak power (5 usec pulse width, 3.0% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1436 |
| DC - 4.0        | 1.3    |
| 4.0 - 8.5       | 1.45   |

### Dimensions:

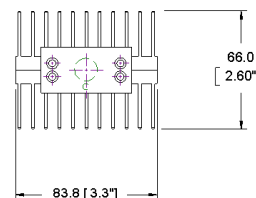
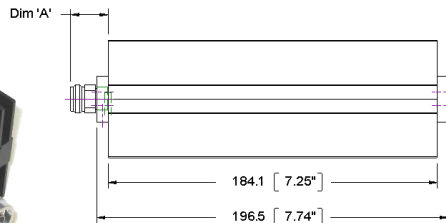
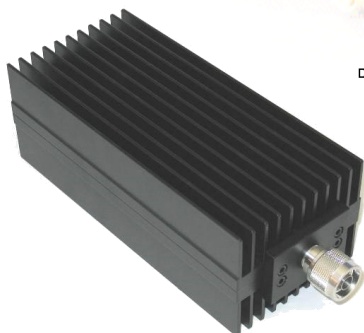
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 1.28 (45.2)  
**Height:** 66 (0.6)  
**Width:** 83.8 (3.3)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC - 5.0 GHz

300 WATTS



## Features

Type N, or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 5.0 GHz.

**Power Rating:** **300 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 25 W at 125°C. **10 kW** peak power (5 usec pulse width, 1.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1438 |
| DC - 2.0        | 1.15   |
| 2.0 - 5.0       | 1.25   |

## Dimensions:

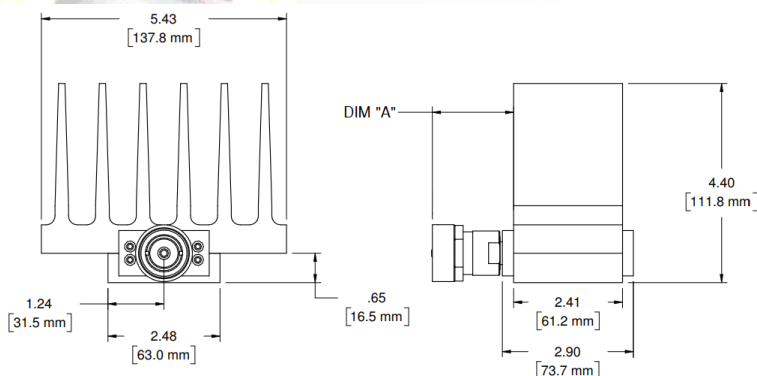
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 1.28 (45.2)  
**Height:** 66 (2.6)  
**Width:** 83.8 (3.3)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC - 3.0 GHz

150 WATTS



## Features

Type N or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 3.0 GHz.

**Power Rating:** 150 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0 W at 125°C. 10 kW peak power (5 µsec pulse width, 0.75% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** Insertion VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1439 |
| DC - 3.0        | 1.2    |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 1.0 (35.3)  
**Height:** 111.8 (4.4)  
**Width:** 137.8 (5.43)

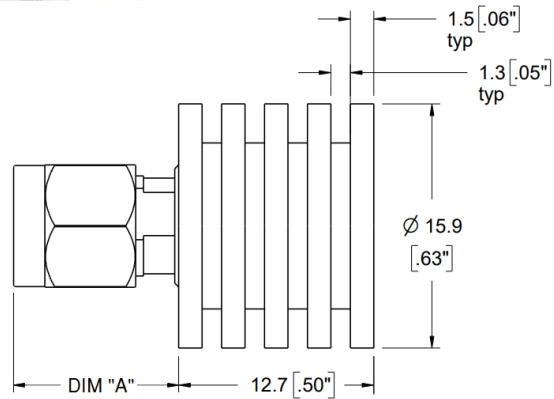
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Termination

# WA1443

WA1443: DC - 18.0 GHz  
WA1443/6: DC - 6.0 GHz  
WA1443/12: DC - 12.4 GHz

## 5 WATTS



### Features

Type SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position. *Compact design provides one of the lowest power/size ratios available.*

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1443/6: DC - 6.0 GHz.  
WA1443/12: DC - 12.4 GHz.  
WA1443: DC - 18.0 GHz.

**Power Rating:** 5 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.5 W at 125°C. 1 kW peak power (5 µsec pulse width, 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

### Maximum VSWR:

| Frequency (GHz) | VSWR         |
|-----------------|--------------|
|                 | All variants |
| DC - 18.0       | 1.2          |

### Dimensions:

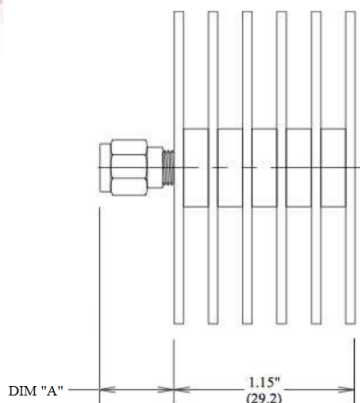
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 7.7 (.30)     |
| SMA M -02               | 10.4 (.41)    |

**Weight:** 6.8 (.24)  
**Diameter:** 15.9 (.63)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC - 26.5 GHz

25 WATTS



## Features

Precision 3.5 mm or 2.92 mm stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position. *Compact design provides one of the lowest power/size ratios available.*

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 26.5 GHz.

**Power Rating:** **25 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 2.5 W at 125°C. **0.5 kW** peak power (5 usec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1444 |
| DC - 26.5       | 1.25   |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| 3.5mm F -11             | 10.7 (.42)    |
| 3.5mm M -12             | 11.6 (.46)    |
| 2.92mm F -13            | 10.6 (.42)    |
| 2.92mm M -14            | 11.5 (.45)    |

**Weight:** 0.1 (3.53)  
**Diameter:** 50.8 (2.0)

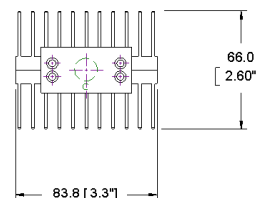
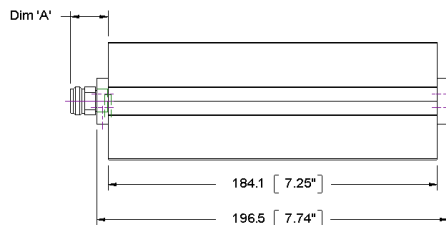
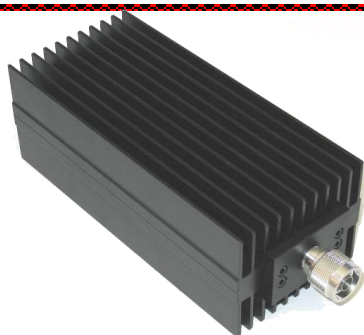
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Termination

# WA1445

## DC - 3.0 GHz

## 250 WATTS



### Features

Type N, TNC or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 3.0 GHz.

**Power Rating:** **250 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 15 W at 125°C. **10 kW** peak power (5 µsec pulse width, 1.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1445 |
| DC - 3.0        | 1.1    |

### Dimensions and Weight:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

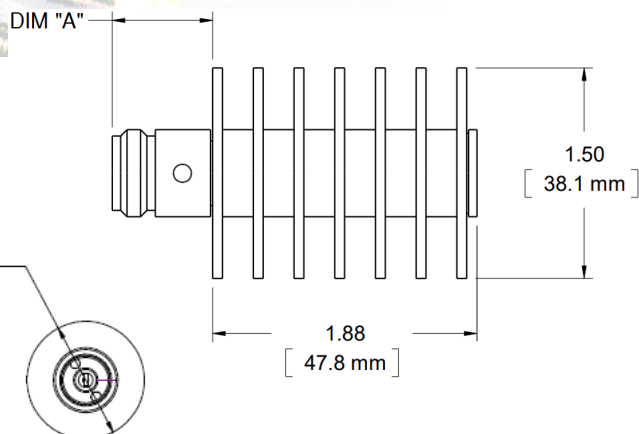
**Weight:** 1.28 (45.2)  
**Height:** 66 (2.6)  
**Width:** 83.8 (3.3)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



DC - 18.0 GHz

25 WATTS



## Features

N-type or SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Power Rating:** 25 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 2.5 W at 125°C. 1 kW peak power (5 usec pulse width, 1.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1446 |
| DC - 8.0        | 1.2    |
| 8.0 - 12.4      | 1.25   |
| 12.4 - 18.0     | 1.35   |

## Dimensions:

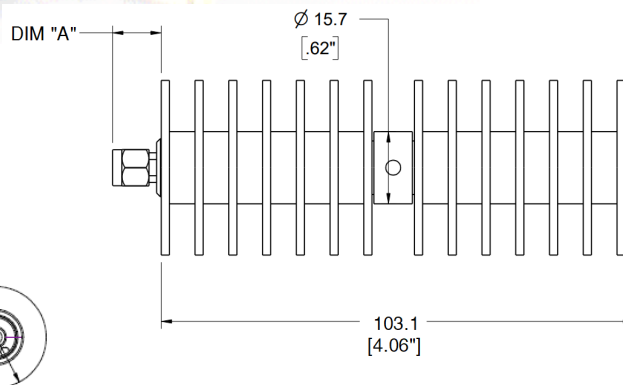
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |

**Weight:** 0.12 (4.23)  
**Diameter:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC - 18.0 GHz

50 WATTS



## Features

N-type or SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Power Rating:** 50 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 5 W at 125°C. 1 kW peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Maximum VSWR:

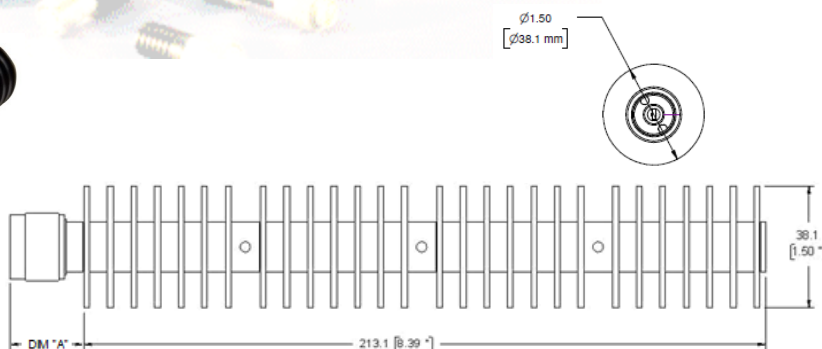
| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1447 |
| DC - 8.0        | 1.2    |
| 8.0 - 12.4      | 1.25   |
| 12.4 - 18.0     | 1.35   |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |

**Weight:** 0.21 (7.41)  
**Diameter:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



### Features

N-type or SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Power Rating:** 100 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 10 W at 125°C. 1 kW peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1448 |
| DC - 8.0        | 1.25   |
| 8.0 - 12.4      | 1.35   |
| 12.4 - 18.0     | 1.45   |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |

**Weight:** 0.41 (14.46)  
**Diameter:** 38.1 (1.5)

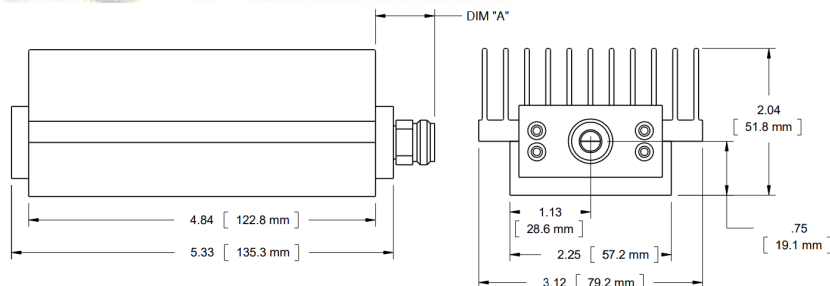
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Termination

# WA1449

## DC - 8.5 GHz

## 150 WATTS



### Features

Type N, SMA or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 8.5 GHz.

**Power Rating:** 150 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 15 W at 125°C. 5 kW peak power (5 µsec pulse width, 1.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1449 |
| DC - 4.0        | 1.25   |
| 4.0 - 8.5       | 1.35   |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 1.28 (45.2)  
**Height:** 51.8 (2.04)  
**Width:** 79.2 (3.12)

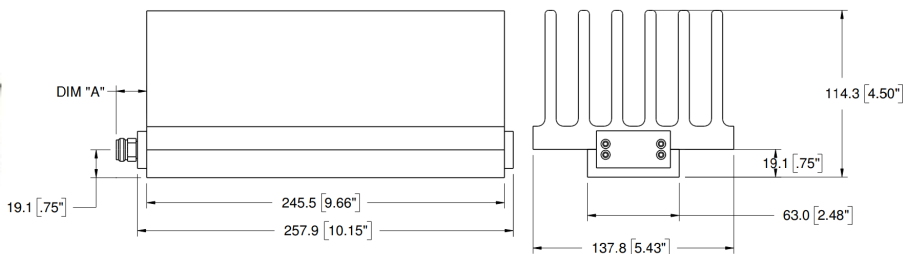
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Termination

# WA1451

## DC - 8.5 GHz

## 500 WATTS



### Features

Type N or 7/16 DIN stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

Useable to 10 GHz.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 8.5 GHz.

**Power Rating:** 500 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 30 W at 125°C. 5 kW peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1451 |
| DC - 4.0        | 1.25   |
| 4.0 - 8.5       | 1.45   |

### Dimensions:

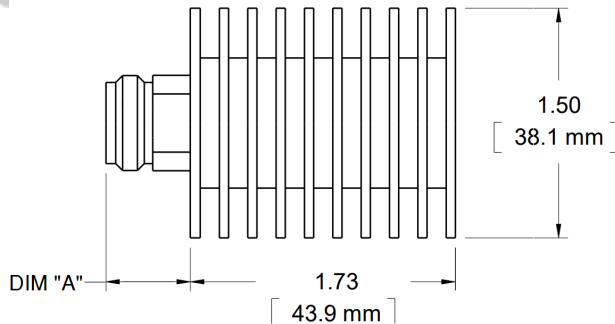
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 3.7 (130.5)  
**Height:** 114.3 (4.5)  
**Width:** 137.8 (5.43)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC – 4.0 GHz

25 WATTS



## Features

Type N, DIN 7/16, TNC or SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 4.0 GHz.

**Power Rating:** 25 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 1.5 W at 125°C. 5 kW peak power (5 usec pulse width, 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1452 |
| DC - 2.0        | 1.1    |
| 2.0 - 4.0       | 1.2    |

## Dimensions:

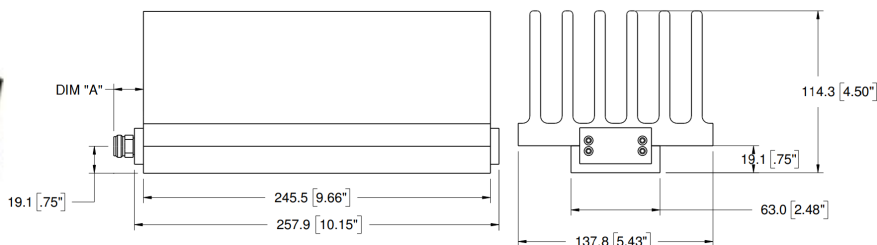
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** .28 (9.88)  
**Diameter:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC - 3.0 GHz

500 WATTS



### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1453 |
| DC - 3.0        | 1.1    |

### Features

Type N or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 3.0 GHz.

**Power Rating:** **500 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 30 W at 125°C. **10 kW** peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add *-LIM* after connector option to specify low intermodulation.

### Dimensions:

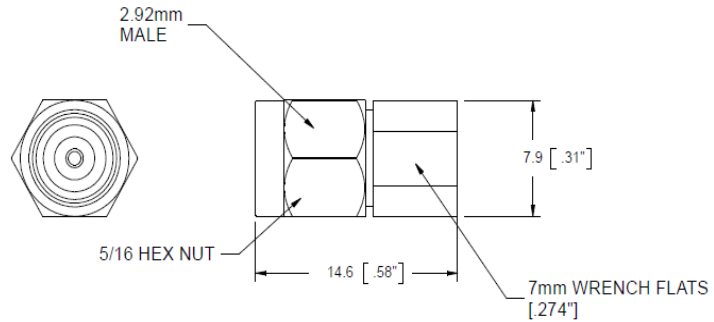
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 3.7 (130.5)  
**Height:** 114.3 (4.5)  
**Width:** 137.8 (5.43)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC – 40.0 GHz

2 WATTS



## Features

Precision 2.92 mm stainless steel connector per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-39030 environmental specification. Compact, rugged design.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1454: DC - 40.0 GHz.

**Power Rating:** **2 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.1 W at 125°C. **500 W** peak power (5 µsec pulse width, 0.2% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Passivated stainless steel body and connector. Gold plated beryllium copper contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Option:** Chain.  
Female 2.92 mm

| Frequency (GHz) | VSWR WA1454 |
|-----------------|-------------|
| DC - 26.5       | 1.20        |
| 26.5 - 40.0     | 1.30        |

**Maximum VSWR:**

## Dimensions:

**Length:** 14.5 (.57)  
**Weight:** 3.83 (.135)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

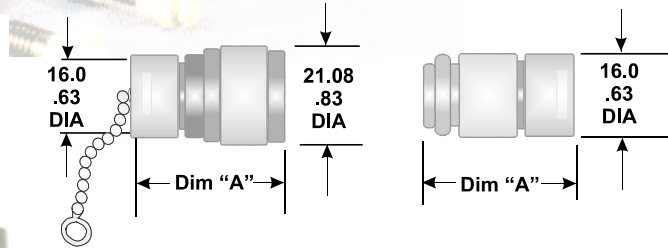


# Termination

# WA1455 & WA1455C

WA1455/6: DC – 6.0 GHz  
 WA1455/12: DC – 12.4 GHz  
 WA1455: DC – 18.0 GHz

2 WATTS



### Maximum VSWR:

| Frequency (GHz) | VSWR (N-Type) |          |           |
|-----------------|---------------|----------|-----------|
|                 | WA1455        | WA1455/6 | WA1455/12 |
| DC - 8.0        | 1.1           | 1.1      | 1.1       |
| 8.0 - 12.4      | 1.15          | N/A      | 1.15      |
| 12.4 - 18.0     | 1.2           | N/A      | N/A       |

| Frequency (GHz) | VSWR (TNC) |          |           |
|-----------------|------------|----------|-----------|
|                 | WA1455     | WA1455/6 | WA1455/12 |
| DC - 8.0        | 1.15       | 1.15     | 1.15      |
| 8.0 - 12.4      | 1.2        | N/A      | 1.2       |
| 12.4 - 18.0     | 1.3        | N/A      | N/A       |

## Features

Type N or TNC M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Excellent VSWR repeatability.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1455/6: DC - 6.0 GHz.  
 WA1455/12: DC - 12.4 GHz.  
 WA1455: DC - 18.0 GHz.

**Power Rating:** 2 W maximum rated average power at 25°C, de-rated linearly to 0.5 W at 125°C. 1 kW peak power (5 µsec pulse width, 0.1% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Ternary Plated Brass Bodies and Coupling Nuts (Passivated stainless steel available as an option). Stainless steel or gold-plated beryllium copper contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Option:** Chain. (C represents chain option)

### Dimensions:

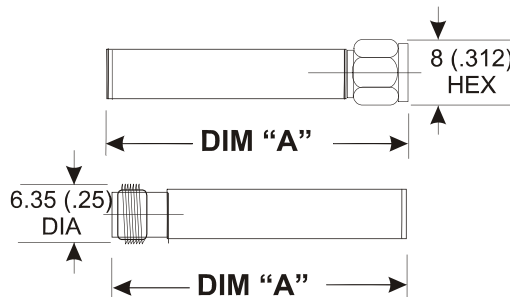
| Dimension        | N-Type       |              |
|------------------|--------------|--------------|
|                  | N-Type F -03 | N-Type M -04 |
| Length (Dim A)   | 28.8 (1.13)  | 30 (1.18)    |
| Weight (nominal) | 40.5 (1.43)  | 36.4 (1.29)  |

| Dimension        | TNC         |             |
|------------------|-------------|-------------|
|                  | TNC F -05   | TNC M -06   |
| Length (Dim A)   | 26.2 (1.03) | 29 (1.14)   |
| Weight (nominal) | 15.2 (0.54) | 22.3 (0.79) |

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC – 32.0 GHz

2 WATTS



## Features

3.5 mm stainless steel connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Compact, rugged design.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC to 32.0 GHz

**Power Rating:** 2 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.1 W at 85°C. 200 W peak power (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Passivated stainless steel body and connector. Gold plated beryllium copper contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Option:** Chain.

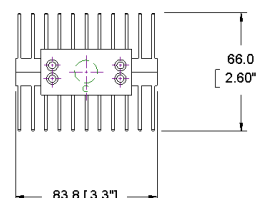
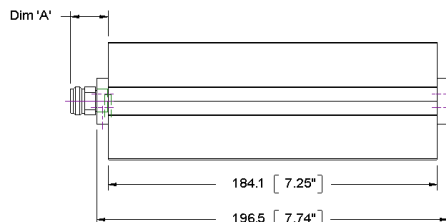
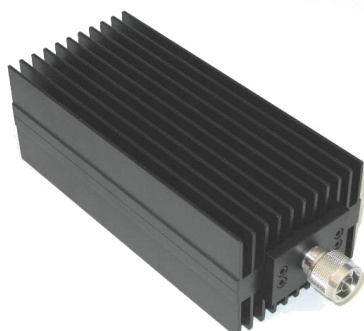
## Maximum VSWR:

| Frequency (GHz) | VSWR WA1456 |
|-----------------|-------------|
| DC - 26.5       | 1.25        |
| 26.5 - 32.0     | 1.4         |

## Dimensions:

| Dimension        | Connector Type  |                |
|------------------|-----------------|----------------|
|                  | 3.5 mm (F), -11 | 3.5 mm (M) -12 |
| Length (Dim A)   | 15 (0.59)       | 15 (0.59)      |
| Weight (nominal) | .0049 (0.14)    | .0049 (0.14)   |

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



### Features

SMA, Type N, DIN 7/16, or TNC stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 5.0 GHz.

**Power Rating:** 150 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 15 W at 125°C. 10 kW peak power (5 µsec pulse width, 0.75% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1457 |
| DC - 2.0        | 1.1    |
| 2.0 - 5.0       | 1.15   |

### Dimensions:

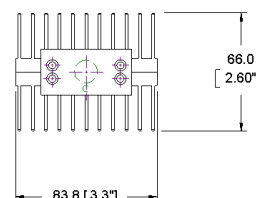
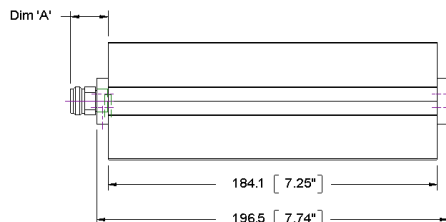
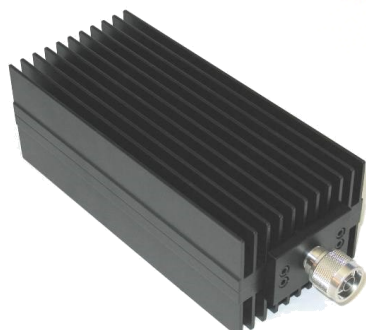
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 0.75 (26.5)

**Height:** 66.0 (2.6)

**Width:** 83.8 (3.3)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



### Features

Type N, DIN 7/16, or TNC stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 6.0 GHz.

**Power Rating:** 250 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 25 W at 125°C. 10 kW peak power (5 µsec pulse width, 1.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

### Maximum VSWR:

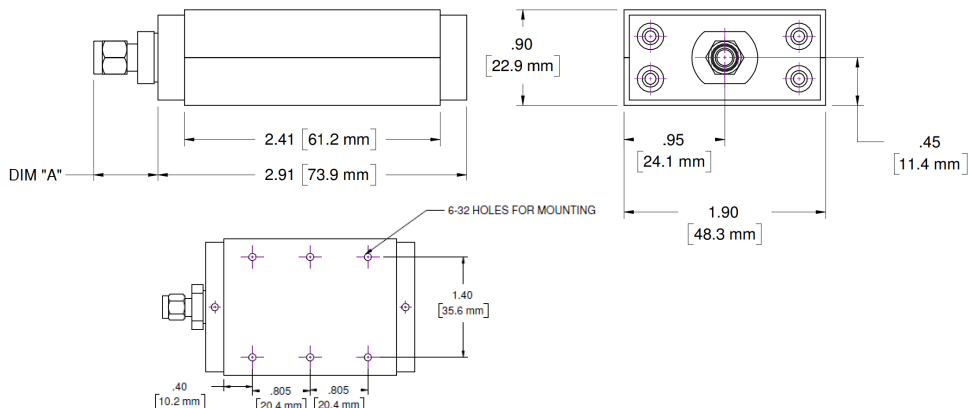
| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1458 |
| DC - 2.0        | 1.1    |
| 2.0 - 6.0       | 1.15   |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.39)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |
| 7/16 DIN F -07          | 30.5 (1.2)    |
| 7/16 DIN M -08          | 31.8 (1.25)   |

**Weight:** 0.75 (26.5)  
**Height:** 66 (2.6)  
**Width:** 83.8 (3.3)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



### Features

Type N, TNC or SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1459 |
| DC - 3.0        | 1.2    |

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 3.0 GHz.

**Power Rating:** 100 W maximum average rated power with case temperature held to a maximum of 100°C. 10 kW peak power (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

**Weight:** 0.14 (4.9)  
**Height:** 22.9 (0.9)  
**Width:** 48.3 (1.9)

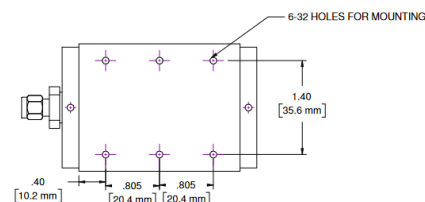
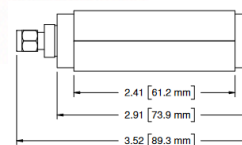
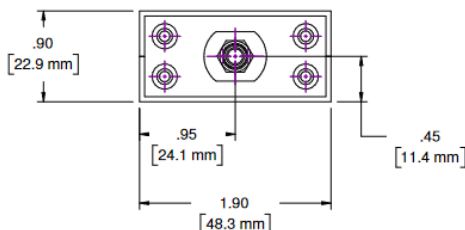
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Termination

# WA1459/6

## DC - 6.0 GHz

## 100 WATTS



### Features

Type N, TNC or SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1459 |
| DC - 6.0        | 1.2    |

Maximum VSWR:

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 6.0 GHz

**Power Rating:** 100 W maximum average rated power with case temperature held to a maximum of 100°C. 10 kW peak power (5 μsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Construction:** Available in clear or gold iridite aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

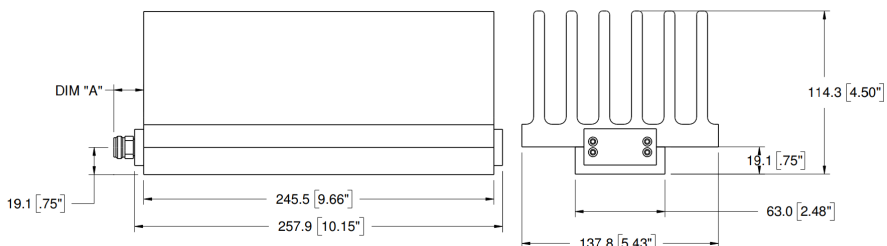
Dimensions:

Weight: 0.14 (4.9)  
Height: 22.9 (0.9)  
Width: 48.3 (1.9)

Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

DC - 5.0 GHz

500 WATTS



## Features

Type N or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 5.0 GHz.

**Power Rating:** **500 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 30 W at 125°C. **10 kW** peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1460 |
| DC - 2.5        | 1.1    |
| 2.5—5.0         | 1.2    |

## Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 3.7 (130.5)  
**Height:** 114.3 (4.5)  
**Width:** 137.8 (5.43)

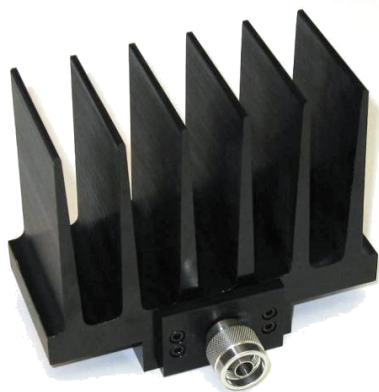
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Termination

# WA1465

## DC - 3.0 GHz

## 150 WATTS



### Features

Type N or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 3.0 GHz.

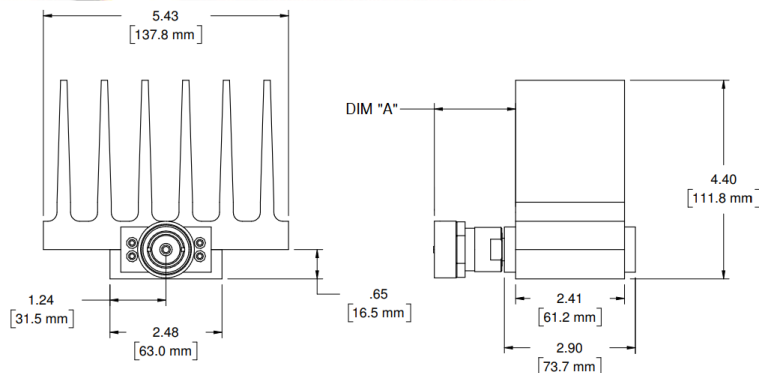
**Power Rating:** **150 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 0 W at 125°C. **10 kW** peak power (5 µsec pulse width, 0.75% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.



### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1465 |
| DC - 3.0        | 1.2    |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

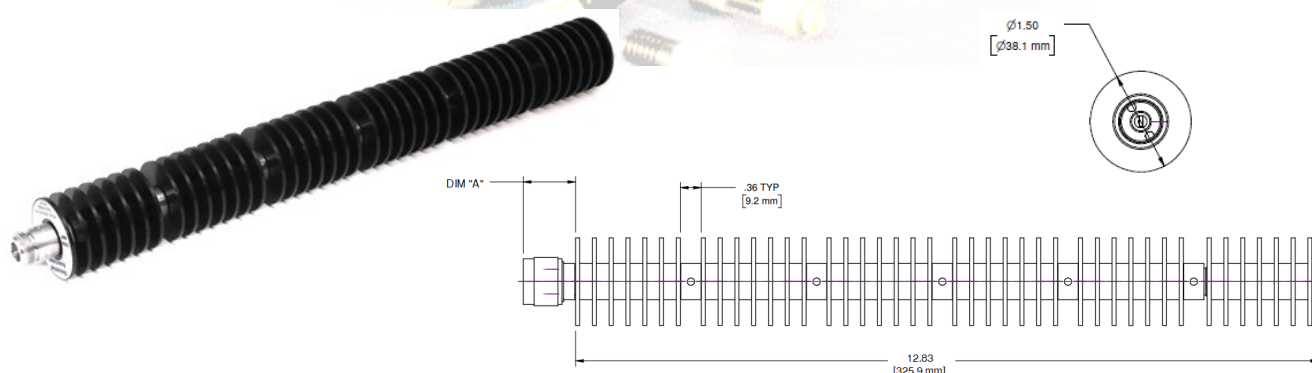
**Weight:** 1.0 (35.3)  
**Height:** 114.3 (4.5)  
**Width:** 137.8 (5.43)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



DC - 18.0 GHz

150 WATTS



## Features

SMA, Type N, or TNC stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Power Rating:** 150 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 15 W at 125°C. 1 kW peak power (5 usec pulse width, 7.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 18.0       | 1.5  |

## Dimensions:

**Weight:** 0.62 (21.87)

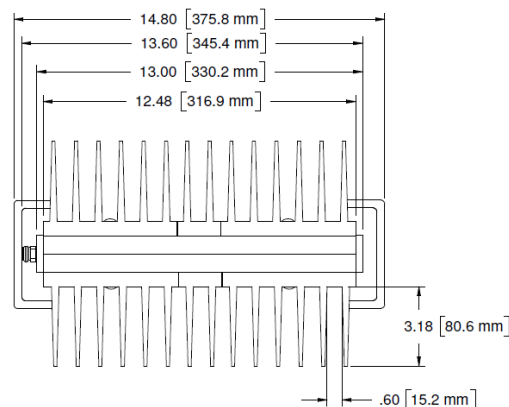
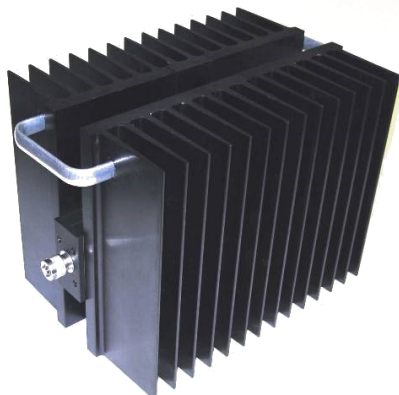
**Diameter:** 38.1 (1.5)

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available*

DC - 3.0 GHz

1000 WATTS



### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1470 |
| DC - 3.0        | 1.35   |

### Features

Type N or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position. *Natural convection cooling.*

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 3.0 GHz.

**Power Rating:** **1000 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 100 W at 125°C. **10 kW** peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. RoHS Compliant.

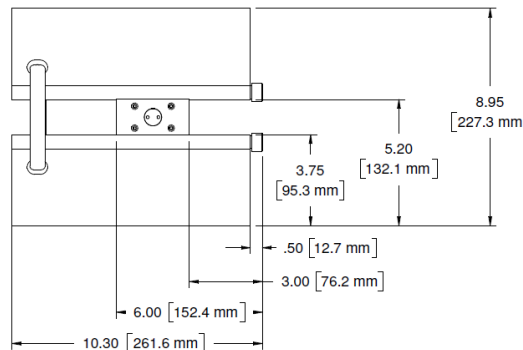
**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 18.20 (130.5)  
**Height:** 261.6 (10.3)  
**Width:** 227.3 (8.95)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

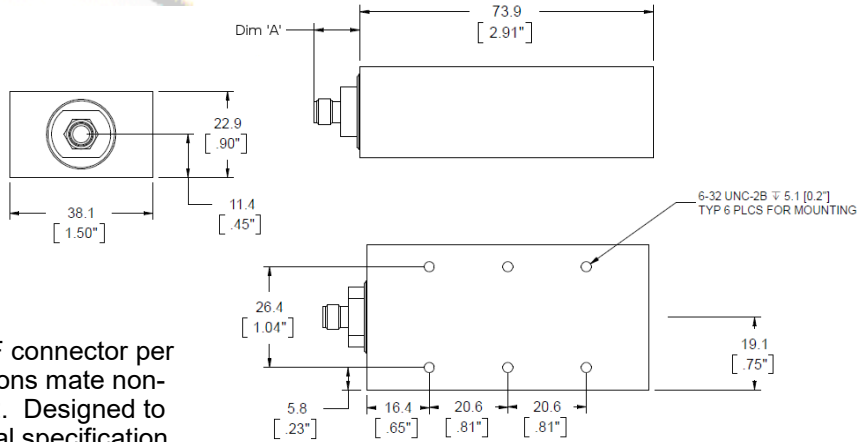


# Termination

# WA1471 & WA1472

**WA1471: DC – 4.0 GHz**  
**WA1472: DC – 8.5 GHz**

**50 WATTS**



## Features

N-type or SMA stainless steel M/F connector per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1471: DC - 4.0 GHz.  
 WA1472: DC - 8.5 GHz.

**Power Rating:** 50 W maximum rated average power with case temperature held to +100°C using conductive heat sink. 5 kW peak power (5 usec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |        |
|-----------------|--------|--------|
|                 | WA1471 | WA1472 |
| DC - 4.0        | 1.2    | 1.2    |
| 4.0 - 8.5       | N/A    | 1.3    |

## Dimensions:

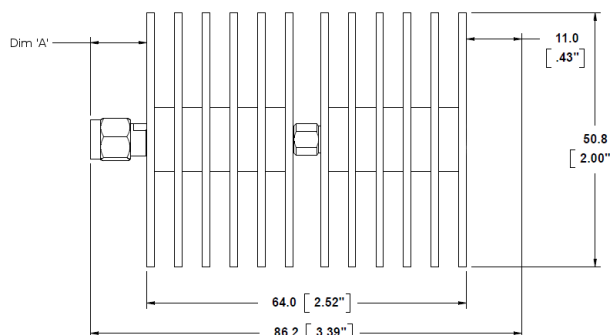
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

**Weight:** 0.14 (4.94)  
**Height:** 22.9 (0.9)  
**Width:** 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC – 28.0 GHz

50 WATTS



## Features

3.5 mm stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 28.0 GHz.

**Power Rating:** 50 W maximum rated average power to 25°C ambient temperature, de-rated linearly to 5 W at 125°C . 500 W peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1473 |
| DC - 18.0       | 1.3    |
| 18.0 - 28.0     | 1.4    |

## Dimensions:

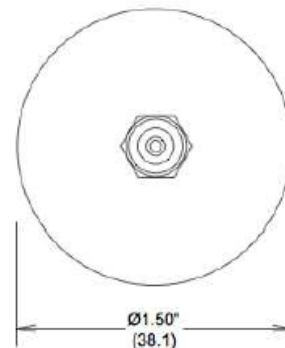
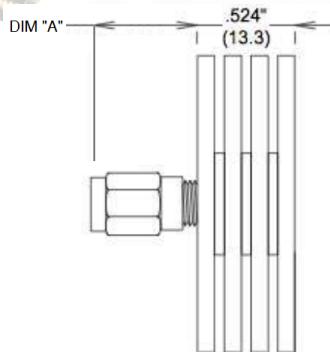
| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| 3.5mm F -11             | 10.7 (.42)    |
| 3.5mm M -12             | 11.6 (.46)    |

**Weight:** 0.20 (7.05)  
**Diameter:** 50.8 (2.0)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC – 40.0 GHz

5 WATTS



## Features

Precision 2.92mm M/F connectors mate non-destructively with SMA per MIL-PRF-39012, 3.5mm and other 2.92mm connectors. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

Flat response.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40.0 GHz.

**Power Rating:** 5 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.5 W at 125°C (horizontal mounting). 200 W peak power (5 µsec pulse width, 1.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1475 |
| DC - 26.5       | 1.25   |
| 26.5 - 40.0     | 1.45   |

## Dimensions and Weight:

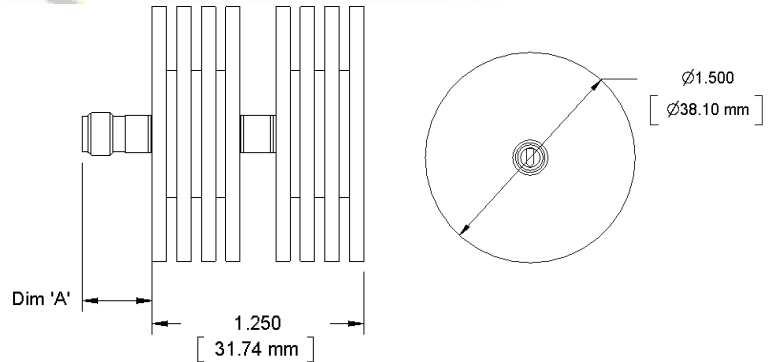
| Connector Type (- code) | Dimension            |
|-------------------------|----------------------|
|                         | Length (Dimension A) |
| 2.92mm F -13            | 10.6 (.42)           |
| 2.92mm M -14            | 11.5 (.45)           |

Weight: .035 (1.2)  
Diameter: 38.1 (1.5)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC – 40.0 GHz

10 WATTS



## Features

Precision 2.92mm M/F connectors mate non-destructively with SMA per MIL-PRF-39012, 3.5mm and other 2.92mm connectors. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

Flat response.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40.0 GHz.

**Power Rating:** 10 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 1 W at 125°C (horizontal mounting). 200 W peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1476 |
| DC - 18.0       | 1.25   |
| 18.0 - 40.0     | 1.4    |

## Dimensions:

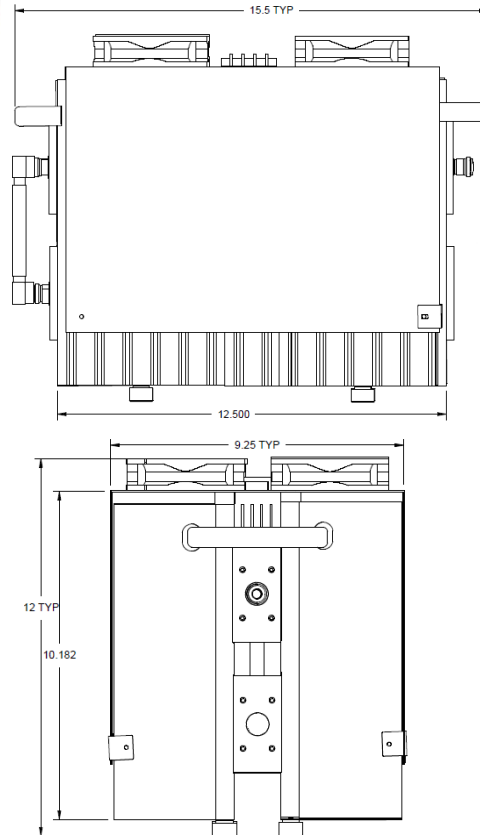
| Connector Type (- code) | Dimension Length (Dimension A) |
|-------------------------|--------------------------------|
| 2.92mm F -13            | 10.6 (.42)                     |
| 2.92mm M -14            | 11.5 (.45)                     |

**Diameter:** 38.1 (1.5)  
**Weight:** .14 (4.9)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC - 3.0 GHz

2000 WATTS



## Features

Type N or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

Forced Air Cooling.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 3.0 GHz.

**Power Rating:** 2000 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 100 W at 125°C. 10 kW peak power (5 µsec pulse width, 10% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR:

| Frequency (GHz) | VSWR WA1480 |
|-----------------|-------------|
| DC - 3.0        | 1.35        |

## Dimensions:

|                |               |
|----------------|---------------|
| <b>Height:</b> | 295 (11.61)   |
| <b>Width:</b>  | 234 (9.21)    |
| <b>Length:</b> | 394 (15.5)    |
| <b>Weight:</b> | 20.55 (724.8) |

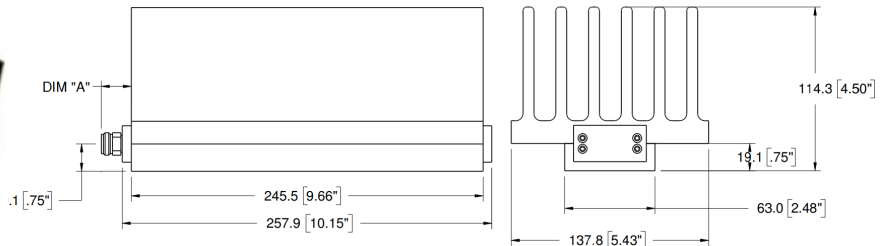
*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Termination

# WA1481

## DC - 10 GHz

## 500 WATTS



### Features

Type N or DIN 7/16 stainless steel M/F connector per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 10.0 GHz.

**Power Rating:** **500 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 50 W at 125°C. **5 kW** peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connector. Gold plated beryllium copper or stainless steel contact. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1481 |
| DC - 4.0        | 1.25   |
| 4.0 - 8.0       | 1.45   |
| 8.0 - 10.0      | 1.7    |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| DIN 7/16 F -07          | 30.5 (1.2)    |
| DIN 7/16 M -08          | 31.8 (1.25)   |

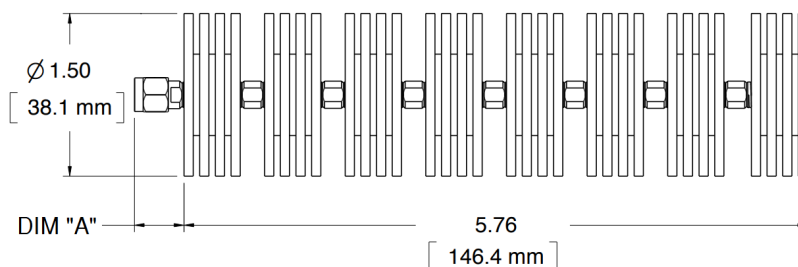
**Weight:** 3.7 (130.5)  
**Height:** 114.3 (4.5)  
**Width:** 137.8 (5.43)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



DC – 40.0 GHz

50 WATTS



## Features

Precision 2.92mm M/F connectors mate non-destructively with SMA per MIL-PRF-39012, 3.5mm and other 2.92mm connectors. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

Flat response.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40.0 GHz.

**Power Rating:** 50 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0 W at 100°C. 200 W peak power (5 usec pulse width, 10% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1488 |
| DC - 18.0       | 1.3    |
| 18.0 - 40.0     | 1.6    |

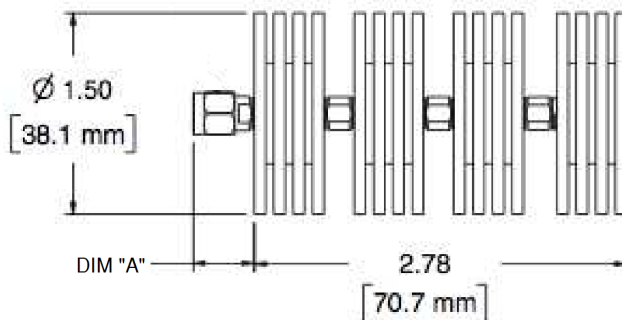
## Dimensions:

| Connector Type (- code) | Dimension            | Diameter: 38.1 (1.5)<br>Weight: 0.29 (10.23) |
|-------------------------|----------------------|--|
|                         | Length (Dimension A) |  |
| 2.92mm F -13            | 10.6 (.42)           |  |
| 2.92mm M -14            | 11.5 (.45)           |  |

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

DC – 40.0 GHz

20 WATTS



## Features

Precision 2.92mm M/F connectors mate non-destructively with SMA per MIL-PRF-39012, 3.5mm and other 2.92mm connectors. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

Flat response.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40.0 GHz.

**Power Rating:** **20 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 2 W at 125°C (horizontal mounting). **200 W** peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

### Maximum VSWR:

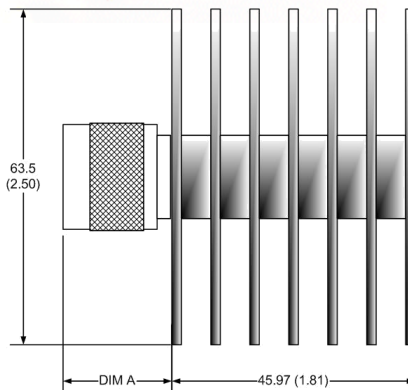
| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1489 |
| DC - 18.0       | 1.25   |
| 18.0 - 40.0     | 1.4    |

### Dimensions and Weight:

| Connector Type (- code) | Dimension            |
|-------------------------|----------------------|
|                         | Length (Dimension A) |
| 2.92mm F -13            | 10.6 (.42)           |
| 2.92mm M -14            | 11.5 (.45)           |

**Diameter:** 38.1 (1.5)  
**Weight:** .20 (7.1)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



### Features

Type N, SMA, or TNC connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Power Rating:** 50 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 5 W at 125°C. 1 kW peak power (5 μsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation

### Maximum VSWR:

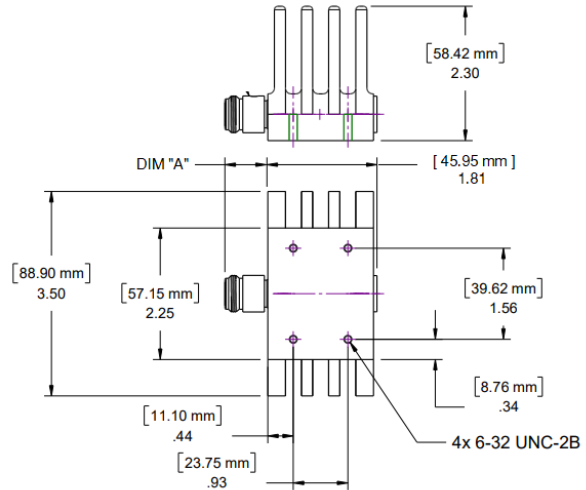
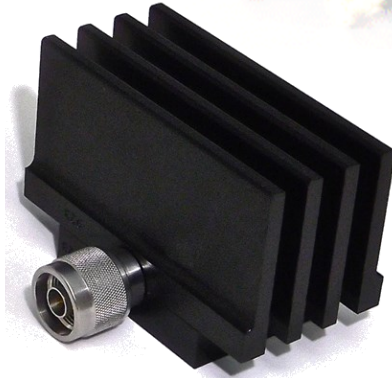
| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1490 |
| DC - 18.0       | 1.2    |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

**Diameter:** 63.5 (2.5)  
**Weight:** 0.21 (7.41)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



### Features

Type N, SMA, or TNC connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Power Rating:** 50 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 5 W at 125°C. 1 kW peak power (5 µsec pulse width, 2.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation

### Maximum VSWR:

| Frequency (GHz) | VSWR    |
|-----------------|---------|
|                 | WA1490B |
| DC - 8.0        | 1.2     |
| 8.0 - 12.4      | 1.25    |
| 12.4 - 18.0     | 1.35    |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

**Weight:** 0.41 (14.5)  
**Height:** 58.42 (2.3)  
**Width:** 88.9 (3.5)

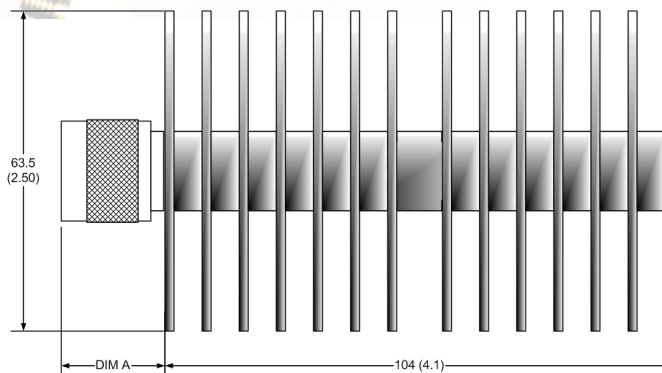
Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Termination

# WA1491

## DC – 18.0 GHz

## 100 WATTS



### Features

Type N, SMA, or TNC connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Power Rating:** 100 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 10 W at 125°C. 1 kW peak power (5 µsec pulse width, 5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low intermodulation

### Maximum VSWR:

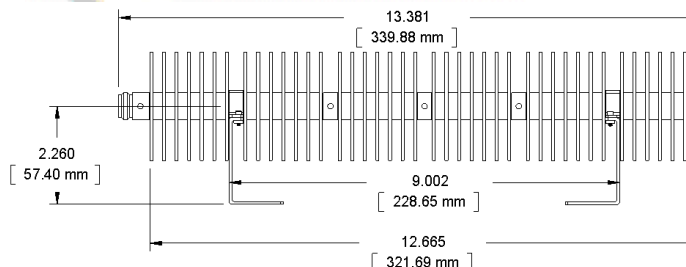
| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1491 |
| DC - 8.0        | 1.2    |
| 8.0 - 12.4      | 1.25   |
| 12.4 - 18.0     | 1.35   |

### Dimensions:

| Connector Type (- code) | Length        |
|-------------------------|---------------|
|                         | Dimension 'A' |
| SMA F -01               | 9.8 (.39)     |
| SMA M -02               | 10.9 (.43)    |
| N-Type F -03            | 14.9 (.59)    |
| N-Type M -04            | 22.7 (.89)    |
| TNC F -05               | 14.4 (.57)    |
| TNC M -06               | 17.7 (.70)    |

**Diameter:** 63.5 (2.5)  
**Weight:** 0.41 (14.46)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



### Features

Type N M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Power Rating:** 200 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 20 W at 125°C. 1 kW peak power (5 µsec pulse width, 10% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Low Intermodulation Option:** Add -LIM after connector option to specify low inter-modulation.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1495 |
| DC - 18.0       | 1.5    |

### Dimensions:

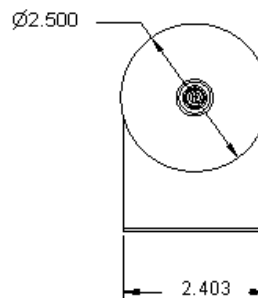
**Diameter:** 63.5 (2.5)

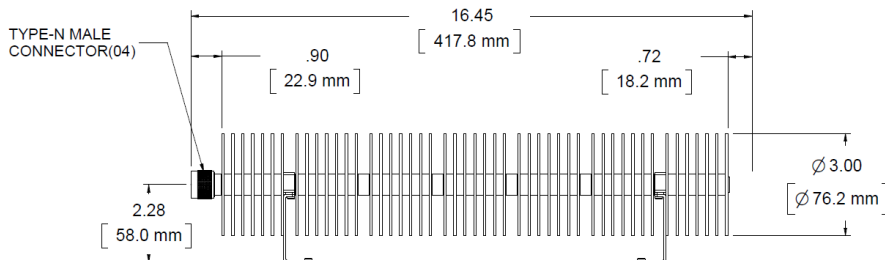
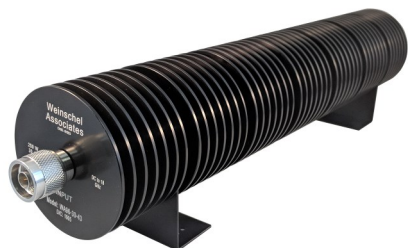
**Weight:** 1.02 (35.82)

**Length:** 339.9 (13.4)

**Options:** Stands for mounting (shown above).

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*





### Features

Type N or TNC M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position with included mounting stands.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Power Rating:** **250 W** maximum average rated power to 25°C ambient temperature, de-rated linearly to 20 W at 125°C. **1 kW** peak power (5 µsec pulse width, 12.5% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Construction:** Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1496 |
| DC - 18.0       | 1.6    |

### Dimensions:

|           |               |
|-----------|---------------|
| Height:   | 96.1 (3.78)   |
| Diameter: | 76.2 (3.0)    |
| Length:   | 417.8 (16.45) |
| Weight:   | 1.59 (56)     |

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# RESISTIVE POWER SPLITTERS AND DIVIDERS

DC – 40.0 GHz

1 WATTS

## *Resistive Power Splitters*

**Usage:** Use in RF and wireless applications where one of the two outputs are included in a leveling loop or used as a reference in a ratio system providing an output signal whose source impedance is matched to 50 ohms.

**Features:** Excellent amplitude tracking, low equivalent output SWR, unidirectional

| Resistive Power Splitters |                   |                            |                             |                              |                             |            |          |
|---------------------------|-------------------|----------------------------|-----------------------------|------------------------------|-----------------------------|------------|----------|
| Model Number              | Average Power (W) | Frequency Range DC - (GHz) | Maximum Insertion Loss (dB) | Amplitude Tracking (dB, max) | Phase Tracking ( $\pm$ deg) | Connectors | Page No. |
| WA1507R                   | 1                 | 4                          | 6.5                         | 0.15                         | 4                           | SMA        | 162 163  |
| PS-018                    | 1                 | 18                         | 7.5                         | 0.2                          | 4                           | N          | 160      |
| 7PS-018                   | 1                 | 18                         | 7.5                         |                              | 2                           | N/7mm      | 161      |
| WA1593                    | 1                 | 26.5                       | 8.5                         | 0.25                         | 4                           | 3.5 mm     | 164, 165 |
| WA1534                    | 1                 | 40                         | 10.5                        | 0.5                          | 4                           | 2.92 mm    | 166, 167 |

## *Resistive Power Dividers*

**Usage:** Use in general RF and wireless applications where RF signals are to be either divided or combined.

**Features:** Excellent amplitude and phase tracking, bi-directional, isolated outputs

| Resistive Power Dividers |                   |                            |                             |                              |                             |            |           |
|--------------------------|-------------------|----------------------------|-----------------------------|------------------------------|-----------------------------|------------|-----------|
| Model Number             | Average Power (W) | Frequency Range DC - (GHz) | Maximum Insertion Loss (dB) | Amplitude Tracking (dB, max) | Phase Tracking ( $\pm$ deg) | Connectors | Page No.  |
| WA1549R                  | 1                 | 4                          | 6.5                         | 0.15                         | 4                           | SMA        | 155       |
| WA1506A                  | 1                 | 18                         | 7.5                         | 0.50                         | 5                           | N          | 150       |
| WA1515                   | 1                 | 18                         | 7.5                         | 0.50                         | 5                           | SMA        | 151 - 154 |
| WA1574                   | 1                 | 26.5                       | 6.5                         | 1.0                          | 2                           | 3.5 mm     | 156, 157  |
| WA1575                   | 1                 | 40                         | 6.5                         | 0.50                         | 2                           | 2.92 mm    | 158, 159  |

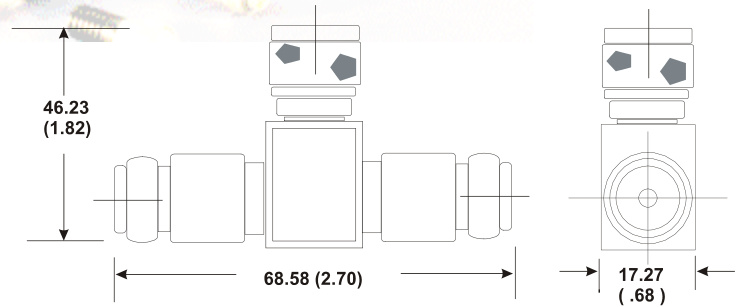




# Broadband Resistive Power Divider WA1506A

DC - 18.0 GHz

1 WATT



## Features

Type N male (combined port), Type N female (divided ports) connectors per MIL-STD-348 interface non-destructively with MIL-PRF-39012 connectors.

Features accurate division and low frequency sensitivity, high stability and matched ports.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz

**Power Coefficient:** < 0.005 dB/dB/W;

**Power Rating:** 1 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.1 W at 125°C. 1 kW peak power (5 µsec pulse width, 0.05% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Nickel plated brass body; stainless steel connectors; gold plated beryllium copper contacts. RoHS Compliant.

**Phase Tracking:** ±2° nominal between output ports, ±5° maximum.

**Accurate Division and Low Frequency Sensitivity:** The symmetry of output between the two arms is excellent across the frequency range.

## Maximum Amplitude Tracking

| Frequency Range (GHz) | Tracking (dB) |
|-----------------------|---------------|
|                       | WA1506A       |
| DC - 4.0              | 0.2           |
| 4.0 - 10.0            | 0.4           |
| 10.0 - 18.0           | 0.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR    |
|-----------------|---------|
|                 | WA1506A |
| DC - 10.0       | 1.25    |
| 10.0 - 18.0     | 1.35    |

## Dimensions:

|         |              |
|---------|--------------|
| Weight: | 0.14 (4.94)  |
| Length: | 68.58 (2.7)  |
| Width:  | 17.27 (0.68) |
| Height: | 46.23 (1.82) |

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

**High Stability:** Low temperature and power coefficients ensure attenuator stability.

**Matched Ports:** Symmetrical 6 dB divisions permits any port to be used as input

**Insertion Loss:** 6 dB nominal, +1.2/-0.2 dB to 10.0 GHz; +1.5 dB to 18 GHz.

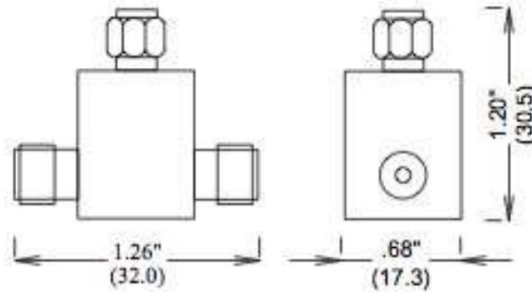
**Number of Ports:** 3 interchangeable for input and output.

# Broadband Resistive Power Divider

# WA1515

DC - 18.0 GHz

1 WATT



## Features

Male SMA port 1, female SMA ports 2 and 3; all ports mate non-destructively with other SMA, 2.92mm and 3.5 mm connectors. Designed to meet MIL-DTL-3933 environmental specification.

Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz

**Power Coefficient:** < 0.005 dB/dB/W

**Power Rating:** 1 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.1 W at 125°C. 1 kW peak power (5 µsec pulse width, 0.05% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Nickel plated brass body; stainless steel connectors; gold plated beryllium copper contacts. RoHS Compliant.

**Phase Shift:** ±2° nominal between output ports, ±5° maximum.

**Insertion Loss:** 6 dB nominal, -0.2, +1.2 dB maximum to 10.0 GHz; +1.5 dB maximum to 18 GHz.

## Maximum Amplitude Tracking

| Frequency Range (GHz) | Tracking (dB) |
|-----------------------|---------------|
|                       | WA1515        |
| DC - 4.0              | 0.2           |
| 4.0 - 10.0            | 0.4           |
| 10.0 - 18.0           | 0.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1515 |
| DC - 10.0       | 1.25   |
| 10.0 - 18.0     | 1.35   |

## Dimensions:

|         |              |
|---------|--------------|
| Weight: | 0.05 (1.76)  |
| Length: | 34.54 (1.36) |
| Width:  | 17.27 (0.68) |
| Height: | 30.48 (1.2)  |

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Broadband Resistive Power Divide WA1515IL

DC - 18.0 GHz

1 WATT

Preliminary

## Features

Male SMA port 1, female SMA ports 2 and 3; all ports mate non-destructively with other SMA, 2.92mm and 3.5 mm connectors. Designed to meet MIL-DTL-3933 environmental specification.

Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz

**Power Coefficient:** < 0.005 dB/dB/W

**Power Rating:** 1 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.1 W at 125°C. 1 kW peak power (5 µsec pulse width, 0.05% duty cycle).

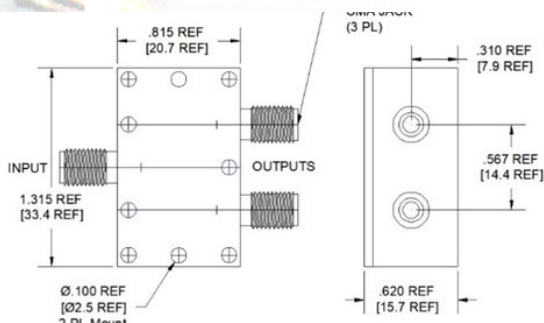
**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Aluminum body; stainless steel connectors; gold plated beryllium copper contacts. RoHS Compliant.

**Phase Shift:** ±2° nominal between output ports, ±5° maximum.

**Insertion Loss:** 6 dB nominal, -0.2, +1.2 dB maximum to 10.0 GHz; +1.5 dB maximum to 18 GHz.



## Maximum Amplitude Tracking

| Frequency Range (GHz) | Tracking (dB) |
|-----------------------|---------------|
|                       | WA1515        |
| DC - 4.0              | 0.20          |
| 4.0 - 10.0            | 0.40          |
| 10.0 - 18.0           | 0.60          |

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1515 |
| DC - 10.0       | 1.25   |
| 10.0 - 18.0     | 1.35   |

## Dimensions:

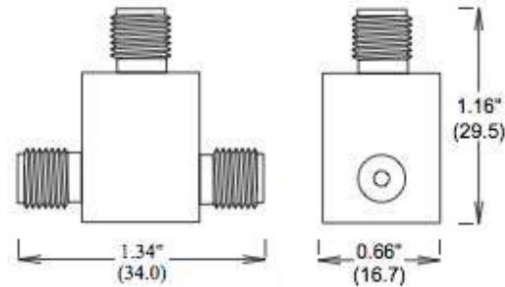
|         |              |
|---------|--------------|
| Weight: | 0.05 (1.76)  |
| Length: | 33.40 (1.32) |
| Width:  | 20.70 (0.82) |
| Height: | 15.70 (0.62) |

Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Broadband Resistive Power Divider WA1515-1

DC - 18.0 GHz

1 WATT



## Features

Female SMA port 1, 2, and 3; all ports-mate non-destructively with other SMA, 2.92mm and 3.5mm connectors. Designed to meet MIL-DTL-3933 environmental specification.

Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz

**Power Coefficient:** < 0.005 dB/dB/W

**Power Rating:** 1 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.1 W at 125°C. 1 kW peak power (5 usec pulse width, 0.05% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Nickel plated brass body; stainless steel connectors; gold plated beryllium copper contacts. RoHS Compliant.

**Phase Shift:** ±2° nominal between output ports, ±5° maximum.

**Insertion Loss:** 6 dB nominal, -0.2, +1.2 dB maximum to 10.0 GHz; +1.5 dB maximum to 18 GHz.

## Maximum Amplitude Tracking

| Frequency Range (GHz) | Tracking (dB) |
|-----------------------|---------------|
|                       | WA1515-1      |
| DC - 4.0              | 0.2           |
| 4.0 - 10.0            | 0.4           |
| 10.0 - 18.0           | 0.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR     |
|-----------------|----------|
|                 | WA1515-1 |
| DC - 10.0       | 1.25     |
| 10.0 - 18.0     | 1.35     |

## Dimensions:

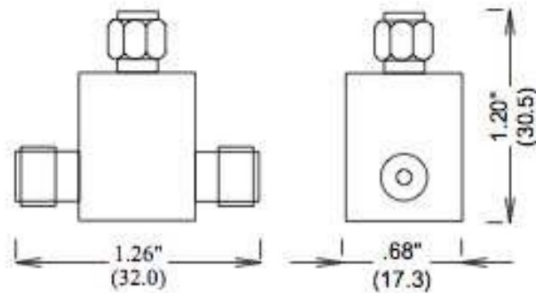
|         |             |
|---------|-------------|
| Weight: | 00.05(1.76) |
| Length: | 34.54(1.36) |
| Width:  | 17.27(0.68) |
| Height: | 30.48(1.2)  |

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Broadband Resistive Power Divider WA1515-2

DC - 18.0 GHz

1 WATT



## Features

Male SMA port 1, 2, and 3; all ports-mate non-destructively with other SMA, 2.92mm and 3.5 mm connectors. Designed to meet MIL-DTL-3933 environmental specification.

Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz

**Power Coefficient:** < 0.005 dB/dB/W

**Power Rating:** 1 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.1 W at 125°C. 1 kW peak power (5  $\mu$ sec pulse width, 0.05% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Nickel plated brass body; stainless steel connectors; gold plated beryllium copper contacts. RoHS Compliant.

**Phase Shift:**  $\pm 2^\circ$  nominal between output ports,  $\pm 5^\circ$  maximum.

**Insertion Loss:** 6 dB nominal, -0.2, +1.2 dB maximum to 10.0 GHz; +1.5 dB maximum to 18 GHz.

## Maximum Amplitude Tracking

| Frequency Range (GHz) | Tracking (dB) |
|-----------------------|---------------|
|                       | WA1515-2      |
| DC - 4.0              | 0.2           |
| 4.0 - 10.0            | 0.4           |
| 10.0 - 18.0           | 0.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR     |
|-----------------|----------|
|                 | WA1515-2 |
| DC - 10.0       | 1.25     |
| 10.0 - 18.0     | 1.35     |

## Dimensions:

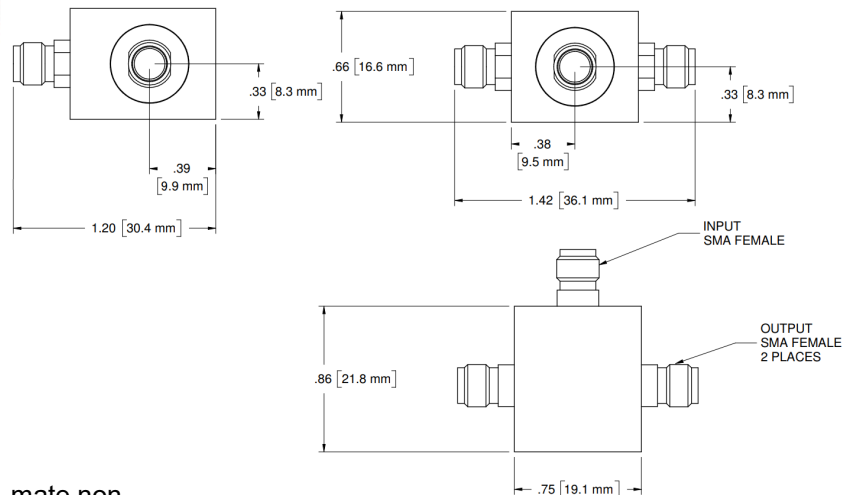
|         |              |
|---------|--------------|
| Weight: | 0.05 (1.76)  |
| Length: | 34.54 (1.36) |
| Width:  | 17.27 (0.68) |
| Height: | 30.48 (1.2)  |

Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Broadband Resistive Power Divider WA1549R

DC - 4.0 GHz

1 WATT



## Features

Female SMA connectors for all ports, mate non-destructively with other SMA, 2.92mm and 3.5mm connectors. Optional male connectors are available. Designed to meet MIL-DTL-3933 environmental specification.

Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 4.0 GHz

**Power Coefficient:** < 0.005 dB/dB/W

**Power Rating:** 1 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.1 W at 125°C. 1 kW peak power (5 µsec pulse width, 0.05% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Nickel plated brass body; stainless steel connectors; gold plated beryllium copper contacts. RoHS Compliant.

**Phase Tracking :** < 4°

**Insertion Loss:** 6 dB nominal, 6.5 dB maximum (between input and either output).

### Maximum Amplitude Tracking:

| Frequency Range (GHz) | Tracking (dB) |
|-----------------------|---------------|
|                       | WA1549R       |
| DC - 4.0              | < 0.15        |

### Maximum VSWR:

| Frequency (GHz) | VSWR    |
|-----------------|---------|
|                 | WA1549R |
| DC - 4.0        | 1.25    |

### Dimensions:

|         |              |
|---------|--------------|
| Weight: | 0.05 (1.76)  |
| Length: | 34.54 (1.36) |
| Width:  | 17.27 (0.68) |
| Height: | 30.48 (1.2)  |

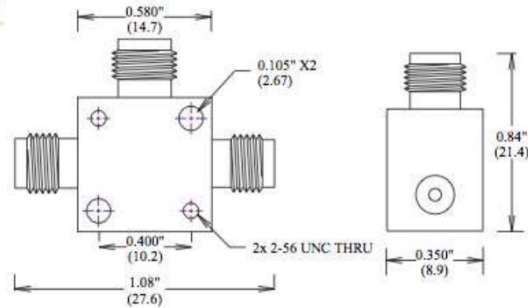
Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.

# Broadband Resistive Power Divider

# WA1574

DC - 26.5 GHz

1 WATT



## Features

Female 3.5mm port 1, 2, and 3; all ports mate non-destructively with other SMA, 2.92mm and 3.5mm connectors. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

Lightweight miniature package with high power capability.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 26.5 GHz

**Power Coefficient:** < 0.005 dB/dB/W.

**Power Rating:** 1 W maximum average rated power to 25°C ambient temperature. 1 kW peak power (5 µsec pulse width, 0.05% duty cycle).

**Temperature Range:** -55°C to +85°C.

**Temperature Coefficient:** < 0.004 dB/dB/°C.

**Construction:** Nickel plated brass body; stainless steel connectors; gold plated beryllium copper contacts. RoHS Compliant.

**Phase Tracking:** < 2°

**Insertion Loss:** 6 dB nominal, 8.5 dB maximum (between input and either output).

## Maximum Amplitude Tracking:

| Frequency Range (GHz) | Tracking (dB) |
|-----------------------|---------------|
|                       | WA1574        |
| DC - 26.5             | < 1.0         |

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1574 |
| DC - 26.5       | 1.7    |

## Dimensions:

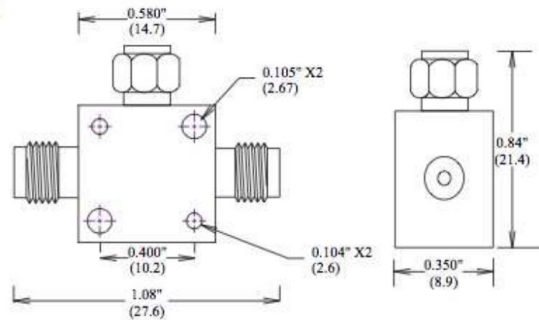
|         |              |
|---------|--------------|
| Weight: | 0.01 (1.76)  |
| Length: | 29.00 (1.14) |
| Width:  | 9.00 (0.35)  |
| Height: | 22.00 (0.87) |

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Broadband Resistive Power Divider WA1574-2

DC - 26.5 GHz

1 WATT



## Features

Male 3.5mm port 1, (2) female 3.5mm ports 2 and 3; all ports -mate non-destructively with other SMA, 2.92mm and 3.5mm connectors. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

Lightweight miniature package with high power capability.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 26.5 GHz

**Power Coefficient:** < 0.005 dB/dB/W.

**Power Rating:** 1 W maximum average rated power to 25°C ambient temperature. 1 kW peak power (5 µsec pulse width, 0.05% duty cycle).

**Temperature Range:** -55°C to +85°C.

**Temperature Coefficient:** < 0.004 dB/dB/°C.

**Construction:** Nickel plated brass body; stainless steel connectors; gold plated beryllium copper contacts. RoHS Compliant.

**Phase Tracking:** < 2°

**Insertion Loss:** 6 dB nominal, 8.5 dB maximum (between input and either output).

## Maximum Amplitude Tracking:

| Frequency Range (GHz) | Tracking (dB) |
|-----------------------|---------------|
|                       | WA1574-2      |
| DC - 26.5             | < 1.0         |

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1575 |
| DC - 26.5       | 1.7    |

## Dimensions:

|         |              |
|---------|--------------|
| Weight: | 0.01 (1.76)  |
| Length: | 29.00 (1.14) |
| Width:  | 9.00 (0.35)  |
| Height: | 22.00 (0.87) |

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

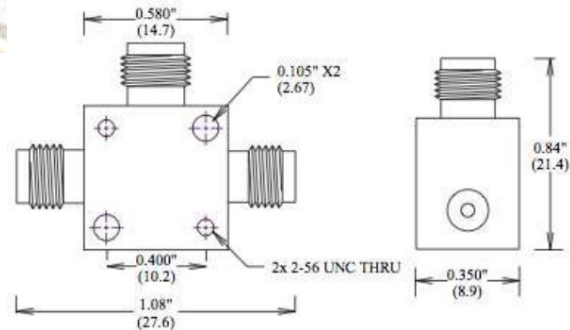
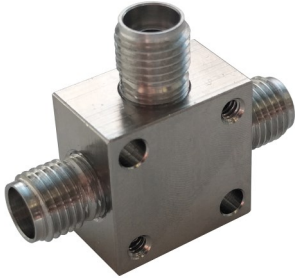


# Broadband Resistive Power Divider

# WA1575

DC - 40.0 GHz

1 WATT



## Features

Female precision 2.92mm port 1, 2, and 3; all ports mate non-destructively with other SMA, 2.92mm and 3.5mm connectors. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

Lightweight miniature package with high power capability.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40.0 GHz

**Power Coefficient:** < 0.005 dB/dB/W.

**Power Rating:** 1 W maximum average rated power to 25°C ambient temperature. 1 kW peak power (5 µsec pulse width, 0.05% duty cycle).

**Temperature Range:** -55°C to +85°C.

**Temperature Coefficient:** < 0.004 dB/dB/°C.

**Construction:** Nickel plated brass body; stainless steel connectors; gold plated beryllium copper contacts. RoHS Compliant.

**Phase :** < 2° (DC to 19 GHz), <5° (19 to 40 GHz)

**Insertion Loss:** 6 dB nominal, 8.5 dB maximum (between input and either output).

## Maximum Amplitude Tracking:

| Frequency Range (GHz) | Tracking (dB) |
|-----------------------|---------------|
|                       | WA1574        |
| DC - 19               | < 0.25        |
| 19 - 40               | < 0.5         |

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1575 |
| DC - 40.0       | 1.7    |

## Dimensions:

|         |              |
|---------|--------------|
| Weight: | 0.01 (1.76)  |
| Length: | 29.00 (1.14) |
| Width:  | 9.00 (0.35)  |
| Height: | 22.00 (0.87) |

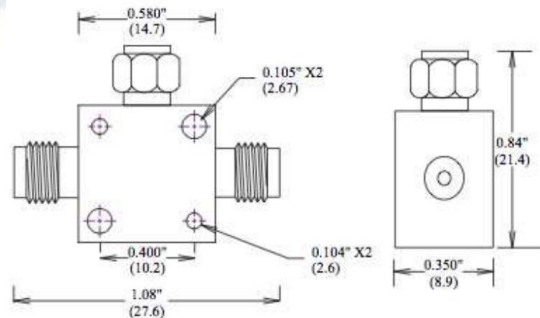
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Broadband Resistive Power Divider

# WA1575-2

DC - 40.0 GHz

1 WATT



## Features

Male precision 2.92 mm port 1, (2) female precision 2.92 mm ports 2 and 3; all ports -mate non-destructively with other SMA, 2.92 mm and 3.5 mm connectors. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

Lightweight miniature package with high power capability.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40.0 GHz

**Power Coefficient:** < 0.005 dB/dB/W.

**Power Rating:** 1 W maximum average rated power to 25°C ambient temperature. 1 kW peak power (5 µsec pulse width, 0.05% duty cycle).

**Temperature Range:** -55°C to +85°C.

**Temperature Coefficient:** < 0.004 dB/dB/°C.

**Construction:** Nickel plated brass body; stainless steel connectors; gold plated beryllium copper contacts. RoHS Compliant.

**Phase Tracking :** < 2° (DC to 19 GHz), <5° (19 to 40 GHz)

**Insertion Loss:** 6 dB nominal, 6.5 dB maximum (between input and either output).

## Maximum Amplitude Tracking:

| Frequency Range (GHz) | Tracking (dB) |
|-----------------------|---------------|
|                       | WA1575-2      |
| DC - 19               | < 0.25        |
| 19 - 40               | < 0.5         |

## Maximum VSWR:

| Frequency (GHz) | VSWR     |
|-----------------|----------|
|                 | WA1575-2 |
| DC - 40.0       | 1.7      |

## Dimensions:

|         |              |
|---------|--------------|
| Weight: | 0.01 (1.76)  |
| Length: | 29.00 (1.14) |
| Width:  | 9.00 (0.35)  |
| Height: | 22.00 (0.87) |

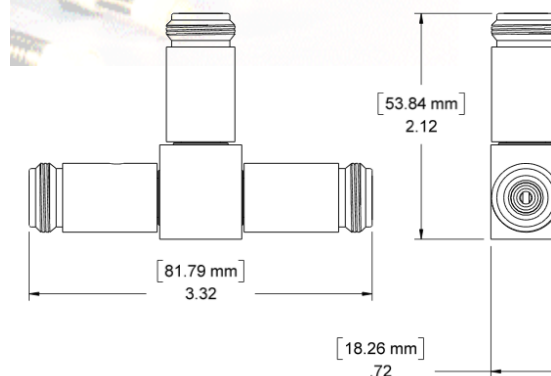
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Broadband Resistive Power Splitter

# PS-018

DC - 18.0 GHz

1 WATT



## Features

Type N stainless steel F connectors per MIL-STD-348A, mates nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

Excellent amplitude tracking.  
Low Equivalent SWR.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz

**Power Sensitivity:** < 0.005 dB/dB/W;  
Unidirectional.

**Power Rating:** 1 W average to 25°C ambient temperature. 1 kW peak (5 µsec pulse width, 0.05% duty cycle), Input connector only. 1 W maximum input power.

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Nickel plated brass body; stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant

**Phase Tracking:** ±2° nominal between output ports.

**Insertion Loss:** 6 dB (nominal), 7.5 dB (maximum).

## Maximum Balance of Power Division:

|            |         |
|------------|---------|
| DC - 8.0   | 0.15 dB |
| 8.0 - 18.0 | 0.20 dB |
| Typical    | 0.1 dB  |

## VSWR (both output port terminated in 50 ohms):

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 18.0       | 1.3  |

## Equivalent Output Wave SWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 2.0        | 1.05 |
| 2.0 - 4.0       | 1.07 |
| 4.0 - 8.0       | 1.1  |
| 8.0 - 18.0      | 1.25 |

## Dimensions:

|         |              |
|---------|--------------|
| Weight: | 0.17 (6.0)   |
| Length: | 68.60 (2.7)  |
| Width:  | 17.30 (0.68) |
| Height: | 47.00 (1.85) |

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Broadband Resistive Power Splitter

# 7PS-018

DC - 18.0 GHz

1 WATT



## Features

Type N stainless steel Female input, 7mm (APC-7) output connectors. per MIL-STD-348A, mates nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz

**Power Sensitivity:** < 0.005 dB/dB/W;  
Unidirectional.

**Power Rating:** 1 W average to 25°C ambient temperature. 1 kW peak (5 µsec pulse width, 0.05% duty cycle), Input connector only. 1 W maximum input power.

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Nickel plated brass body; stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant

**Phase Tracking:** ±2° nominal between output ports.

**Insertion Loss:** 6 dB (nominal), 7.5 dB (maximum)

## VSWR:

1.3 (both output port terminated in 50 ohms):

## Maximum Balance of Power Division:

| Frequency (GHz) | dB   |
|-----------------|------|
| DC - 8.0        | 0.15 |
| 8.0 - 18.0      | 0.2  |
| Typical         | 0.1  |

## Equivalent Output Wave SWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 2.0        | 1.05 |
| 2.0 - 4.0       | 1.07 |
| 4.0 - 8.0       | 1.1  |
| 8.0 - 18.0      | 1.25 |

## Dimensions:

Weight: 0.17 (6.0)  
Length: 63.30 (2.7)  
Width: 17.30 (0.68)  
Height: 47.00 (1.85)

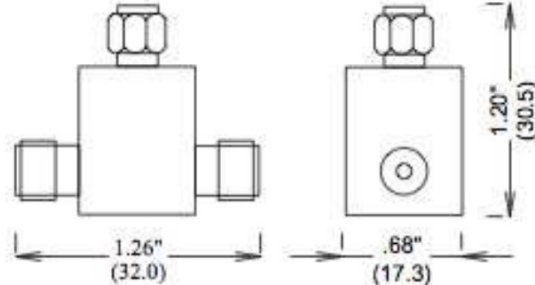
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Broadband Resistive Power Splitter

# WA1507R

DC - 4.0 GHz

1 WATT



## Features

Male SMA port 1, female SMA ports 2 and 3. All ports-mate nondestructively with other SMA, 2.92mm and 3.5mm connectors. Designed to meet MIL-DTL-3933 environmental specification.

Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 4.0 GHz

**Power Sensitivity:** < 0.005 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 1 W average to 25°C ambient temperature, de-rated linearly to 0.1 W at 125°C. 1 kW peak (5 µsec pulse width, 0.05% duty cycle), Input connector only.

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Nickel plated brass body; stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant

**Phase Tracking:** < 4°

**Insertion Loss:** 6 dB (nominal), 6.5 dB (maximum).

**Amplitude Tracking:** < 0.15 dB

**Maximum VSWR:**

| Frequency (GHz) | Output VSWR | Input VSWR |
|-----------------|-------------|------------|
| DC - 4.0        | 1.15        | 1.2        |

**Dimensions:**

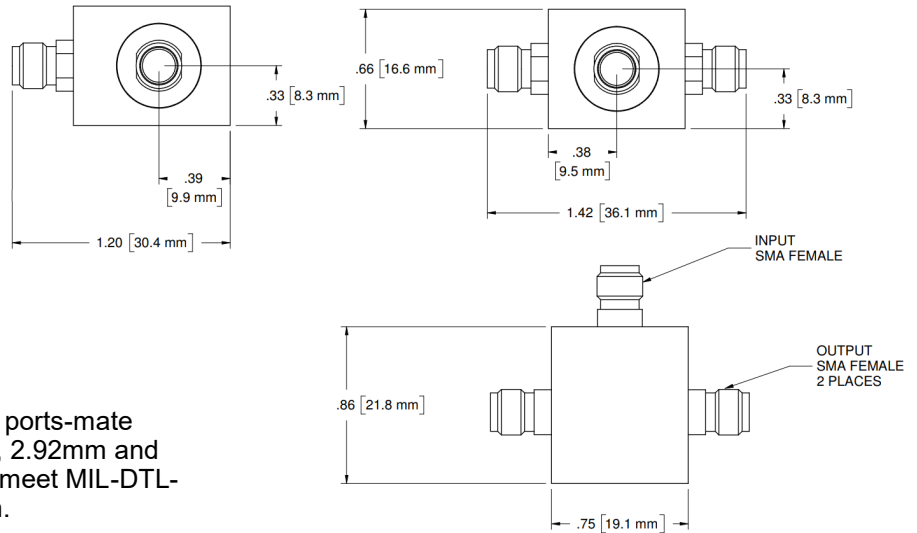
|         |              |
|---------|--------------|
| Weight: | 0.05 (1.76)  |
| Length: | 34.54 (1.36) |
| Width:  | 17.27 (0.68) |
| Height: | 30.48 (1.2)  |

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Broadband Resistive Power Splitter WA1507R-1

DC - 4.0 GHz

1 WATT



## Features

Female SMA port 1, 2, and 3; all ports-mate nondestructively with other SMA, 2.92mm and 3.5mm connectors. Designed to meet MIL-DTL-3933 environmental specification.

Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 4.0 GHz

**Power Sensitivity:** < 0.005 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 1 W average to 25°C ambient temperature, de-rated linearly to 0.1 W at 125°C. 1 kW peak (5 μsec pulse width, 0.05% duty cycle), Input connector only.

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Nickel plated brass body, stainless steel connectors. Gold plated beryllium copper contacts. RoHS Compliant

**Phase Tracking:** < 4°

**Insertion Loss:** 6 dB (nominal), 6.5 dB (maximum).

**Amplitude Tracking:** < 0.15 dB

**Maximum VSWR:**

| Frequency (GHz) | Output VSWR | Input VSWR |
|-----------------|-------------|------------|
| DC - 4.0        | 1.15        | 1.2        |

**Dimensions:**

|         |              |
|---------|--------------|
| Weight: | 0.05 (1.76)  |
| Length: | 34.54 (1.36) |
| Width:  | 17.27 (0.68) |
| Height: | 30.48 (1.2)  |

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Broadband Resistive Power Splitter WA1593

DC - 26.5 GHz

1 WATT



## Features

Female 3.5mm port 1, 2, and 3; all ports -mate non-destructively with other SMA, 2.92mm and 3.5mm connectors. Optional female 3.5mm connectors are available on all ports. Designed to meet MIL-DTL-3933 environmental specification.

Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 26.5 GHz

**Power Sensitivity:** < 0.005 dB/dB/W;  
Unidirectional in power.

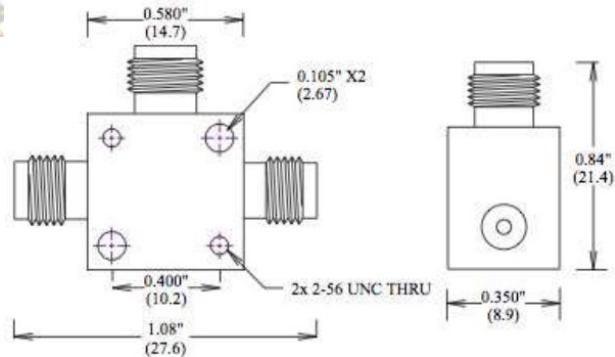
**Power Rating:** 1 W average to 25°C ambient temperature. 1 kW peak (5 µsec pulse width, 0.05% duty cycle), Input connector only.

**Temperature Range:** -55°C to +85°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Nickel plated brass body, stainless steel connectors, gold plated beryllium copper contacts, and through-holes provided for mounting. RoHS Compliant.

**Phase Tracking:** < 4°



**Insertion Loss:** 6 dB (nominal), 8.5 dB (maximum).

**Amplitude Tracking:** < 0.25 dB

**Maximum VSWR:**

| Frequency (GHz) | Output VSWR | Input VSWR |
|-----------------|-------------|------------|
| DC - 26.5       | 1.35        | 1.4        |

**Dimensions:**

Weight: 0.01 (6.0)  
Length: 29.00 (1.14)  
Width: 9.00 (0.35)  
Height: 22.00 (0.87)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Broadband Resistive Power Splitter WA1593-2

DC - 26.5 GHz

1 WATT



## Features

Male 3.5mm port 1, (2) female 3.5mm ports 2 and 3; all ports -mate non-destructively with other SMA, 2.92mm and 3.5mm connectors. Optional female 3.5mm connectors are available on all ports. Designed to meet MIL-DTL-3933 environmental specification.

Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 26.5 GHz

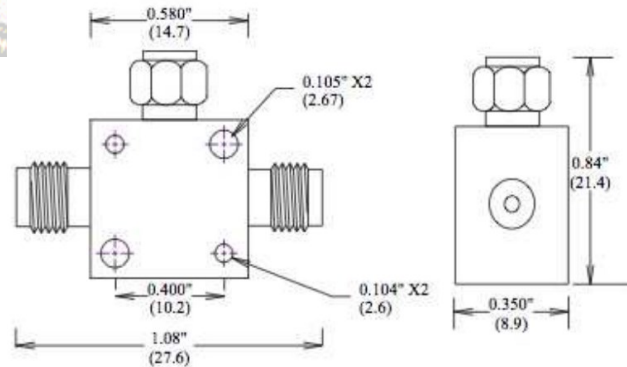
**Power Sensitivity:** < 0.005 dB/dB/W;  
Unidirectional in power.

**Power Rating:** 1 W average to 25°C ambient temperature. 1 kW peak (5 µsec pulse width, 0.05% duty cycle), Input connector only.

**Temperature Range:** -55°C to +85°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Nickel plated brass body, stainless steel connectors, gold plated beryllium copper contacts, and through-holes provided for mounting. RoHS Compliant.



**Phase Tracking:** < 4°

**Insertion Loss:** 6 dB (nominal), 8.5 dB (maximum).

**Amplitude Tracking:** < 0.25 dB

**Maximum VSWR:**

| Frequency (GHz) | Output VSWR | Input VSWR |
|-----------------|-------------|------------|
| DC - 26.5       | 1.35        | 1.4        |

**Dimensions:**

|         |              |
|---------|--------------|
| Weight: | 0.01 (6.0)   |
| Length: | 29.00 (1.14) |
| Width:  | 9.00 (0.35)  |
| Height: | 22.00 (0.87) |

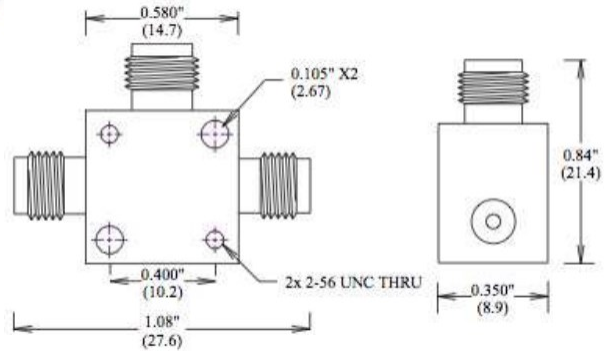
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Broadband Resistive Power Splitter WA1534

DC - 40.0 GHz

1 WATT



## Features

Female precision 2.92 mm ports 1, 2, and 3; all ports -mate non-destructively with other SMA, 2.92mm and 3.5mm connectors. Designed to meet MIL-DTL-3933 environmental specification.

Unit may be mounted in any position.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40.0 GHz

**Power Rating:** 1 W average to 25°C ambient temperature. 1 kW peak (5 µsec pulse width, 0.05% duty cycle, Input connector only).

**Temperature Range:** -55°C to +125°C.

**Construction:** Nickel plated brass body, stainless steel connectors, gold plated beryllium copper contacts, and through-holes provided for mounting. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Phase Tracking:** < 4°

**Insertion Loss:** 6 dB (nominal), 10.5 dB (maximum).

**Amplitude Tracking:** < 0.5 dB

**Maximum VSWR:**

| Frequency (GHz) | Output VSWR | Input VSWR |
|-----------------|-------------|------------|
| DC - 40.0       | 1.7         | 1.6        |

**Dimensions and Weight:**

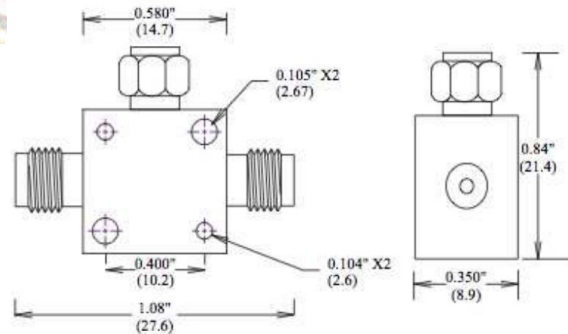
Weight: 0.01 (6.0)  
Length: 28.91 (1.14)  
Width: 8.89(0.35)  
Height: 21.83(0.87)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Broadband Resistive Power Splitter WA1534-2

DC - 40.0 GHz

1 WATT



## Features

Male precision 2.92 mm port 1, (2) Female precision 2.92 mm ports 2 and 3; all ports-mate nondestructively with other SMA, 2.92mm and 3.5mm connectors. Designed to meet MIL-DTL-3933 environmental specification.

Unit may be mounted in any position.

Features a lightweight miniature package with high power capability.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40.0 GHz

**Power Rating:** 1 W average to 25°C ambient temperature. 1 kW peak (5 µsec pulse width, 0.05% duty cycle, Input connector only).

**Temperature Range:** -55°C to +125°C.

**Construction:** Nickel plated brass body, stainless steel connectors, gold plated beryllium copper contacts, and through-holes provided for mounting. RoHS Compliant.

**Calibration:** VSWR performed across frequency range. Calibration test data available at additional cost.

**Phase Tracking:** < 4°

**Insertion Loss:** 6 dB (nominal), 10.5 dB (maximum).

**Amplitude Tracking:** < 0.5 dB

**Maximum VSWR:**

| Frequency (GHz) | Output VSWR | Input VSWR |
|-----------------|-------------|------------|
| DC - 40.0       | 1.7         | 1.7        |

**Dimensions:**

Weight: ()  
Length: 27.6 (1.08)  
Width: 8.90(0.35)  
Height: 21.4(0.84)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# VARIABLE ATTENUATORS

DC – 40.0 GHz

0.3—5 WATTS

## Continuously Variable Attenuators

| Model Number  | Frequency Range (GHz) | Average Power (W)                        | Peak Power (kW) | Residual Insertion Loss (dB) | Attenuation Range (dB) | Connectors and Mounting Notes | Page No. |
|---------------|-----------------------|--|-----------------|------------------------------|------------------------|-------------------------------|----------|
| VA-02-30      | DC - 2                | 5  | 0.5             | 3                            | 30                     | N, SMA                        | 169      |
| VA-02-60      | DC - 2                | 5  | 0.5             | 5                            | 60                     | N, SMA                        | 169      |
| VA-02-90      | DC - 2                | 5  | 0.5             | 5                            | 90                     | N, SMA                        | 169      |
| VA-02-100     | DC - 2                | 5  | 0.5             | 5                            | 100                    | N, SMA                        | 169      |
| VA-02-115     | DC - 2                | 5  | 0.5             | 5                            | 115                    | N, SMA                        | 169      |
| VA-03-30      | DC - 3                | 5  | 0.5             | 3                            | 30                     | N, SMA                        | 169      |
| VA-03-60      | DC - 3                | 5  | 0.5             | 5                            | 60                     | N, SMA                        | 169      |
| VA-03-90      | DC - 3                | 5  | 0.5             | 5                            | 90                     | N, SMA                        | 169      |
| VA-04-30      | DC - 4                | 5  | 0.5             | 3                            | 30                     | N, SMA                        | 169      |
| VA-04-60      | DC - 4                | 5  | 0.5             | 5                            | 60                     | N, SMA                        | 169      |
| VA-04-90      | DC - 4                | 5  | 0.5             | 5                            | 90                     | N, SMA                        | 169      |
| VA-05-60      | DC - 5                | 5  | 0.5             | 5                            | 60                     | N, SMA                        | 169      |
| All VA Models |                       | Display for Variable Attenuators options |                 |                              |                        |                               | 170      |

## Programmable Step Attenuators

| Model Number | Frequency Range | Average Power (W) | Peak Power (dBm) | Attenuation Range (dB) | Connectors and Mounting Notes | Page No. |
|--------------|-----------------|-------------------|------------------|------------------------|-------------------------------|----------|
| DA6-60       | DC - 6          | 0.3               | +22 dBm          | 60                     | SMA                           | 171      |
| DA6-90       | DC - 6          | 0.3               | +22 dBm          | 90                     | SMA                           | 171      |
| DA13-60      | DC - 13         | 0.3               | +22 dBm          | 60                     | SMA                           | 171      |
| DA13-90      | DC - 13         | 0.3               | +22 dBm          | 90                     | SMA                           | 171      |



\* Other configurations are available

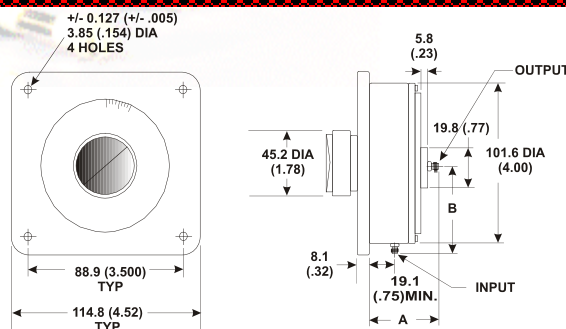
**Custom solutions at “off-the-shelf” prices**

# Variable Attenuator

# VA02-VA05

VA02: DC - 2.0 GHz  
 VA03: DC - 3.0 GHz  
 VA04: DC - 4.0 GHz  
 VA05: DC - 5.0 GHz

**5 WATTS**



## Features

SMA and Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification. Features wide attenuation range, low residual insertion loss, and a long life.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** VA02: DC - 2.0 GHz.  
 VA03: DC - 3.0 GHz.  
 VA04: DC - 4.0 GHz.  
 VA05: DC - 5.0 GHz.

**Power Sensitivity:** < 0.005 dB/dB/W;  
 Bidirectional in power.

**Power Rating:** 5 W maximum rated average power to 40°C ambient temperature, de-rated linearly to 0 W at 85°C **500 W** peak power (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:**  
 Operating: 0°C to +85°C  
 Non-Operating: -55°C to +125°C

**Temperature Coefficient:** < 0.001 dB/dB/°C.

**Construction:** Stainless steel connectors, rugged construction, O-ring seal for faceplate. RoHS Compliant.

**Calibration:** Dial Calibrated in 1 dB increments at the mid-band frequency. (Dial is for reference only)

**Rugged Construction:** Designed and tested to meet the environmental requirements of MIL-DTL-24215.

## Attenuation Range:

VA02: 60, 90, or 115 dB  
 VA03: 60, or 90 dB  
 VA04: 60, or 90 dB  
 VA05: 60 dB

## Resolution:

60 dB ~180°  
 90 dB ~240°  
 100 dB ~270°  
 115 dB ~285°

**Options:** Rack Mount Kit, Bench Top Stand

| Frequency (GHz) | VSWR (Max) |      |      |      |
|-----------------|------------|------|------|------|
|                 | VA02       | VA03 | VA04 | VA05 |
| DC - 1.0        | 1.5        | 1.5  | 1.5  | 1.5  |
| 1.0 - 2.0       | 1.6        | 1.6  | 1.6  | 1.6  |
| 2.0 - 3.0       | N/A        | 1.7  | 1.7  | 1.7  |
| 3.0 - 5.0       | N/A        | N/A  | 1.8  | 1.8  |

| Attenuation Ranges | Insertion Loss (dB), Nominal |      |      |      |
|--------------------|------------------------------|------|------|------|
|                    | VA02                         | VA03 | VA04 | VA05 |
| 60-115 dB          | 5                            | 5    | 5    | 5    |

**Dimensions:**  
**Weight:** 1.13 (39.86)

| Connector Option | DIM "A" mm (in.) | DIM "B" mm (in.) |
|------------------|------------------|------------------|
| -34              | 66.0 (2.6)       | 68.1 (2.68)      |
| -44              | 66.0 (2.6)       | 71.9 (2.83)      |
| -33              | 61.0 (2.4)       | 68.1 (2.68)      |
| -12              | 55.6 (2.19)      | 58.2 (2.29)      |
| -22              | 55.6 (2.19)      | 61.5 (2.42)      |
| -11              | 52.3 (2.06)      | 58.2 (2.29)      |

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# Variable Attenuator

# VA02-VA05



Options For All VA Models

## *Rack Mount Kit:*

\*Available in single, double and triple sets.



## *Bench Top Stand:*

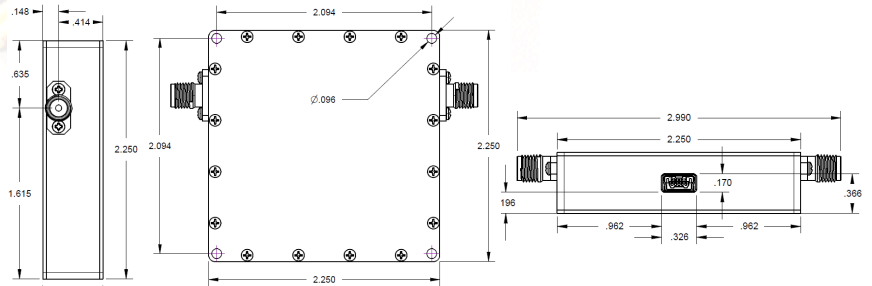
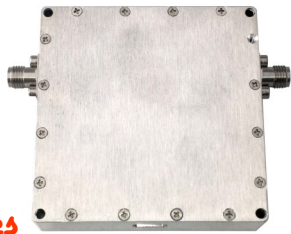


# Variable Attenuator

# DA6 & DA13

**DA6: DC - 6.0 GHz**  
**DA13: DC - 13.0 GHz**

**0.3 WATTS**



## Features

SMA stainless steel connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-C-39012. Thru-holes for mounting. Designed to meet MIL-DTL-3933 environmental specification.

Broadband frequency coverage. High accuracy and repeatability. Control surface provided. USB interface.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DA6: DC - 6.0 GHz.  
 DA13: DC - 13.0 GHz.

**Power Rating:** 0.3 W maximum rated average power to 25°C ambient temperature (Bidirectional).

**Temperature Range:**  
 Operating: -55°C to +85°C  
 Non-Operating: -60°C to +125°C

**Construction:** RoHS Compliant

**Switching Speed:** 100 ns

**Step Size:** 0.5

**Input Power:** +22 dBm

**Input Third Order Intercept Point:** +32 dBm

**Programming Interface Options:** USB 2.0

**Input Power Requirements:** Powered via USB

**Accuracy:** ± 0.5 Db

**Attenuation Range:** 30, 60, 90 dB

**Maximum VSWR:** DA6: 1.5  
 DA13: 1.5

**Maximum Insertion Loss:**

| Frequency (GHz) | Insertion Loss (dB) |        |
|-----------------|---------------------|--------|
|                 | DA6-60              | DA6-90 |
| DC - 4.0        | 7.0                 | 11.0   |
| 4.0 - 6.0       | 9.0                 | 13.0   |

| Frequency (GHz) | Insertion Loss (dB) |         |
|-----------------|---------------------|---------|
|                 | DA13-60             | DA13-90 |
| DC - 4.0        | 8.0                 | 12.0    |
| 4.0 - 8.0       | 10.0                | 15.0    |
| 8.0 - 13.0      | 12.0                | 18.0    |

**Programming Interface:**

**Options:** USB-2.0 (standard)  
 (Mini-USB Connector)  
 RS-232  
 802.11g Wireless  
 Manual Control

**Software:** LabView Driver  
 Standalone Program

**Input Power Requirement:** Powered via USB  
**Options:** AC Power Adapter  
 EMI Feed thru

**Dimensions and Weight:**

Length: 57.2 (2.25)  
 Depth: 14.2 (0.56)  
 Height: 57.2 (2.25)  
 Weight: 76.5 (2.7) MAX

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# PRECISION RF ADAPTERS IN-SERIES AND BETWEEN SERIES

DC - 50.0 GHz

| In-Series Precision RF Adapters |                         |                               |               |          |
|---------------------------------|-------------------------|-------------------------------|---------------|----------|
| Model Number                    | Connectors              | Frequency Range<br>DC - (GHz) | VSWR<br>(max) | Page No. |
| WA1519-2104                     | 4.3/10 (f) - N (m)      | 6                             | 1.1           | 179      |
| WA1519-2203                     | 4.3/10 (m) - N (f)      | 6                             | 1.1           | 179      |
| WA1519-2103                     | 4.3/10 (f) - N (f)      | 6                             | 1.1           | 179      |
| WA1519-2204                     | 4.3/10 (m) - N (m)      | 6                             | 1.1           | 179      |
| WA1513-0303                     | N (f) - N (f)           | 18                            | 1.15          | 175      |
| WA1513-0404                     | N (m) - N (m)           | 18                            | 1.15          | 175      |
| WA1513-0304                     | N (f) - N (m)           | 18                            | 1.15          | 175      |
| WA1514/12-0505                  | TNC (f) - TNC (f)       | 12                            | 1.15          | 176      |
| WA1514/12-0506                  | TNC (f) - TNC (m)       | 12                            | 1.15          | 176      |
| WA1514/12-0606                  | TNC (m) - TNC (m)       | 12                            | 1.15          | 176      |
| WA1514-0505                     | TNC (f) - TNC (f)       | 18                            | 1.15          | 176      |
| WA1514-0506                     | TNC (f) - TNC (m)       | 18                            | 1.15          | 176      |
| WA1514-0606                     | TNC (m) - TNC (m)       | 18                            | 1.15          | 176      |
| WA1517-1919                     | BNC (f) - BNC (f)       | 4                             | 1.20          | 178      |
| WA1517-1920                     | BNC (f) - BNC (m)       | 4                             | 1.20          | 178      |
| WA1517-2020                     | BNC (m) - BNC (m)       | 4                             | 1.20          | 178      |
| WA1587-0101                     | SMA (f) - SMA (f)       | 27                            | 1.20          | 183      |
| WA1587-0102                     | SMA (f) - SMA (m)       | 27                            | 1.20          | 183      |
| WA1587-0202                     | SMA (m) - SMA (m)       | 27                            | 1.20          | 183      |
| WA7003-1111                     | 3.5mm (f) - 3.5mm (f)   | 33                            | 1.15          | 185      |
| WA7003-1112                     | 3.5mm (f) - 3.5mm (m)   | 33                            | 1.15          | 185      |
| WA7003-1212                     | 3.5mm (m) - 3.5mm (m)   | 33                            | 1.15          | 185      |
| WA7004-1313                     | 2.92mm (f) - 2.92mm (f) | 40                            | 1.25          | 1866     |
| WA7004-1314                     | 2.92mm (f) - 2.92mm (m) | 40                            | 1.25          | 186      |
| WA7004-1414                     | 2.92mm (m) - 2.92mm (m) | 40                            | 1.25          | 186      |
| WA7005-1515                     | 2.4mm (f) - 2.4mm (f)   | 50                            | 1.20          | 187      |
| WA7005-1516                     | 2.4mm (f) - 2.4mm (m)   | 50                            | 1.20          | 187      |
| WA7005-1616                     | 2.4mm (m) - 2.4mm (f)   | 50                            | 1.20          | 187      |
| WA7015-1717                     | 1.85mm (f) - 1.85mm (f) | 65                            | 1.25          | 196      |
| WA7015-1718                     | 1.85mm (f) - 1.85mm (m) | 65                            | 1.25          | 196      |
| WA7015-1818                     | 1.85mm (m) - 1.85mm (m) | 65                            | 1.25          | 196      |



# PRECISION RF ADAPTERS IN-SERIES AND BETWEEN SERIES

DC - 50.0 GHz

| Between-Series Precision RF Adapters |                        |                 |            |          |
|--------------------------------------|------------------------|-----------------|------------|----------|
| Model Number                         | Connectors             | Frequency Range | VSWR (max) | Page No. |
| WA1516-0307                          | N (f) - 7/16 (f)       | 6               | 1.2        | 177      |
| WA1516-0308                          | N (f) - 7/16 (m)       | 6               | 1.2        | 177      |
| WA1516-0407                          | N (m) - 7/16 (f)       | 6               | 1.2        | 177      |
| WA1516-0408                          | N (m) - 7/16 (m)       | 6               | 1.2        | 177      |
| WA1548-0103                          | SMA (f) - N (f)        | 18              | 1.15       | 180      |
| WA1548-0104                          | SMA (f) - N (m)        | 18              | 1.15       | 180      |
| WA1548-0203                          | SMA (m) - N (f)        | 18              | 1.15       | 180      |
| WA1548-0204                          | SMA (m) - N (m)        | 18              | 1.15       | 180      |
| WA1550-0503                          | TNC (f) - N (f)        | 18              | 1.15       | 181      |
| WA1550-0504                          | TNC (f) - N (m)        | 18              | 1.15       | 181      |
| WA1550-0603                          | TNC (m) - N (f)        | 18              | 1.15       | 181      |
| WA1550-0604                          | TNC (m) - N (m)        | 18              | 1.15       | 181      |
| WA1551-0105                          | SMA (f) - TNC (f)      | 18              | 1.15       | 182      |
| WA1551-0106                          | SMA (f) - TNC (m)      | 18              | 1.15       | 182      |
| WA1551-0205                          | SMA (m) - TNC (f)      | 18              | 1.15       | 182      |
| WA1551-0206                          | SMA (m) - TNC (m)      | 18              | 1.15       | 182      |
| WA7002-0319                          | N (f) - BNC (f)        | 4               | 1.3        | 184      |
| WA7002-0320                          | N (f) - BNC (m)        | 4               | 1.3        | 184      |
| WA7002-0419                          | N (m) - BNC (f)        | 4               | 1.3        | 184      |
| WA7002-0420                          | N (m) - BNC (m)        | 4               | 1.3        | 184      |
| WA7002-0519                          | TNC (f) - BNC (f)      | 4               | 1.3        | 184      |
| WA7002-0520                          | TNC (f) - BNC (m)      | 4               | 1.3        | 184      |
| WA7002-0619                          | TNC (m) - BNC (f)      | 4               | 1.3        | 184      |
| WA7002-0620                          | TNC (m) - BNC (m)      | 4               | 1.3        | 184      |
| WA7006-1315                          | 2.92mm (f) - 2.4mm (f) | 40              | 1.25       | 188      |
| WA7006-1316                          | 2.92mm (f) - 2.4mm (m) | 40              | 1.25       | 188      |
| WA7006-1415                          | 2.92mm (m) - 2.4mm (f) | 40              | 1.25       | 188      |
| WA7006-1416                          | 2.92mm (m) - 2.4mm (m) | 40              | 1.25       | 188      |
| WA7007-1115                          | 3.5mm (f) - 2.4mm (f)  | 33              | 1.15       | 189      |
| WA7007-1116                          | 3.5mm (f) 2.4mm (m)    | 33              | 1.15       | 189      |
| WA7007-1215                          | 3.5mm (m) - 2.4mm (f)  | 33              | 1.15       | 189      |
| WA7007-1216                          | 3.5mm (m) - 2.4mm (m)  | 33              | 1.15       | 189      |
| WA7008-1103                          | 3.5mm (f) - N (f)      | 18              | 1.15       | 190      |
| WA7008-1104                          | 3.5mm (f) - N (m)      | 18              | 1.15       | 190      |
| WA7008-1203                          | 3.5mm (m) - N (f)      | 18              | 1.15       | 190      |
| WA7008-1204                          | 3.5mm (m) - N (m)      | 18              | 1.15       | 190      |





# PRECISION RF ADAPTERS IN-SERIES AND BETWEEN SERIES

DC - 50.0 GHz

| Between-Series Precision RF Adapters |                         |                            |            |          |
|--------------------------------------|-------------------------|----------------------------|------------|----------|
| Model Number                         | Connectors              | Frequency Range DC - (GHz) | VSWR (max) | Page No. |
| WA7009-1303                          | 2.92mm (f) - N (f)      | 18                         | 1.15       | 191      |
| WA7009-1304                          | 2.92mm (f) - N (m)      | 18                         | 1.15       | 191      |
| WA7009-1403                          | 2.92mm (m) - N (f)      | 18                         | 1.15       | 191      |
| WA7009-1404                          | 2.92mm (m) - N (m)      | 18                         | 1.15       | 191      |
| WA7010-1301                          | 2.92mm (f) - SMA (f)    | 27                         | 1.20       | 192      |
| WA7010-1302                          | 2.92mm (f) - SMA (m)    | 27                         | 1.20       | 192      |
| WA7010-1401                          | 2.92mm (m) - SMA (f)    | 27                         | 1.20       | 192      |
| WA7010-1402                          | 2.92mm (m) - SMA (m)    | 27                         | 1.20       | 192      |
| WA7012-1503                          | 2.4mm (f) - N (f)       | 18                         | 1.15       | 193      |
| WA7012-1504                          | 2.4mm (f) - N (m)       | 18                         | 1.15       | 193      |
| WA7012-1603                          | 2.4mm (m) - N (f)       | 18                         | 1.15       | 193      |
| WA7012-1604                          | 2.4mm (m) - N (m)       | 18                         | 1.15       | 193      |
| WA7013-1501                          | 2.4mm (f) - SMA (f)     | 27                         | 1.20       | 194      |
| WA7013-1502                          | 2.4mm (f) - SMA (m)     | 27                         | 1.20       | 194      |
| WA7013-1601                          | 2.4mm (m) - SMA (f)     | 27                         | 1.20       | 194      |
| WA7013-1602                          | 2.4mm (m) - SMA (m)     | 27                         | 1.20       | 194      |
| WA7014-1311                          | 2.92mm (f) - 3.5mm (f)  | 33                         | 1.15       | 195      |
| WA7014-1312                          | 2.92mm (f) - 3.5mm (m)  | 33                         | 1.15       | 195      |
| WA7014-1411                          | 2.92mm (m) - 3.5mm (f)  | 33                         | 1.15       | 195      |
| WA7014-1412                          | 2.92mm (m) - 3.5mm (m)  | 33                         | 1.15       | 195      |
| WA7017-1317                          | 2.92mm (f) - 1.85mm (f) | 40                         | 1.25       | 197      |
| WA7017-1318                          | 2.92mm (f) - 1.85mm (m) | 40                         | 1.25       | 197      |
| WA7017-1417                          | 2.92mm (m) - 1.85mm (f) | 40                         | 1.25       | 197      |
| WA7017-1418                          | 2.92mm (m) - 1.85mm (m) | 40                         | 1.25       | 197      |
| WA7018-0111                          | SMA (f) - 3.5mm (f)     | 27                         | 1.20       | 198      |
| WA7018-0112                          | SMA (f) - 3.5mm (m)     | 27                         | 1.20       | 198      |
| WA7018-0211                          | SMA (m) - 3.5mm (f)     | 27                         | 1.20       | 198      |
| WA7018-0212                          | SMA (m) - 3.5mm (m)     | 27                         | 1.20       | 198      |
| WA7019-1117                          | 3.5mm (f) - 1.85mm (f)  | 33                         | 1.25       | 199      |
| WA7019-1118                          | 3.5mm (f) - 1.85mm (m)  | 33                         | 1.25       | 199      |
| WA7019-1217                          | 3.5mm (m) - 1.85mm (f)  | 33                         | 1.25       | 199      |
| WA7019-1218                          | 3.5mm (m) - 1.85mm (m)  | 33                         | 1.25       | 199      |

# Precision Coaxial Adapter

# WA1513

DC – 18.0 GHz

Type N to Type N



## Features

Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz

**Temperature Range:** -55°C to +100°C.

**Construction:** Passivated stainless steel body and gold plated beryllium copper contacts. RoHS Compliant

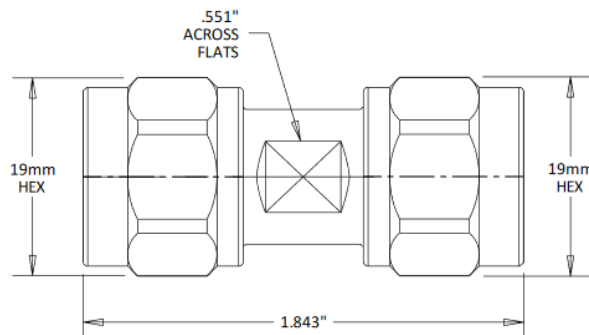
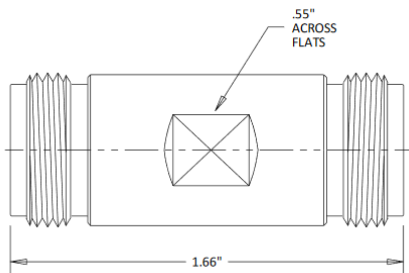
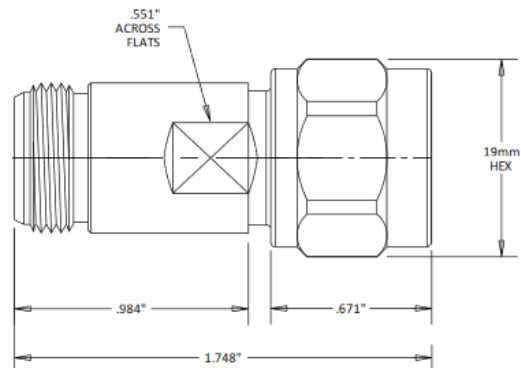
**Options:** Bulkhead Mount, Flange Mount, Right Angle

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1513 |
| DC - 18.0       | 1.15   |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA1514

**WA1514/12: DC – 12.4 GHz**  
**WA1514: DC – 18.0 GHz**

**TNC to TNC**



## Features

TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA1514: DC - 18.0 GHz  
 WA1514/12: DC - 12.4 GHz

**Temperature Range:** WA1514: -55°C to +100°C.  
 WA1514/12: -55°C to +125°C.

**Construction:** Passivated stainless steel body and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

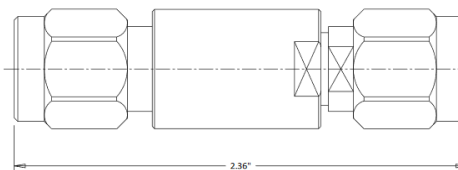
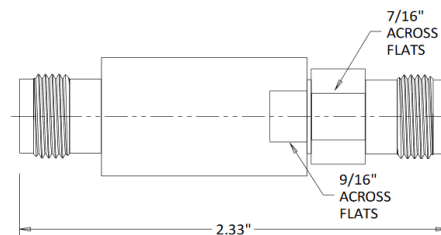
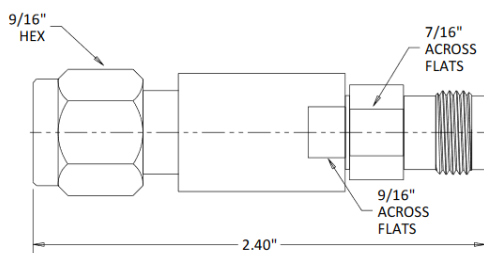
| Frequency (GHz) | VSWR   |           |
|-----------------|--------|-----------|
|                 | WA1514 | WA1514/12 |
| DC - 12.4       | 1.15   | 1.15      |
| 12.4 - 18.0     | 1.15   | N/A       |

## Maximum Insertion Loss:

| Frequency (GHz) | Insertion Loss |           |
|-----------------|----------------|-----------|
|                 | WA1514         | WA1514/12 |
| DC - 12.4       | 0.25           | 0.25      |
| 12.4 - 18.0     | 0.25           | N/A       |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA1516

DC – 6 GHz

Type N to 7/16 DIN



## Features

Type N and 7/16 DIN stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 6 GHz

**Temperature Range:** -55°C to +125°C

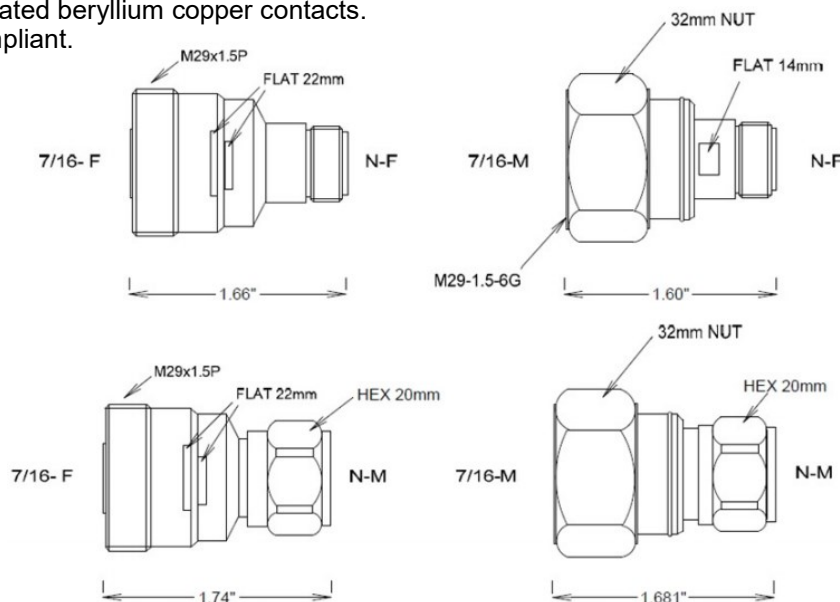
**Construction:** Passivated stainless steel body and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1516 |
| DC - 6 GHz      | 1.2    |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA1517

DC – 4.0 GHz

BNC to BNC



## Features

BNC brass M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 4.0 GHz

**Temperature Range:** -55°C to +120°C

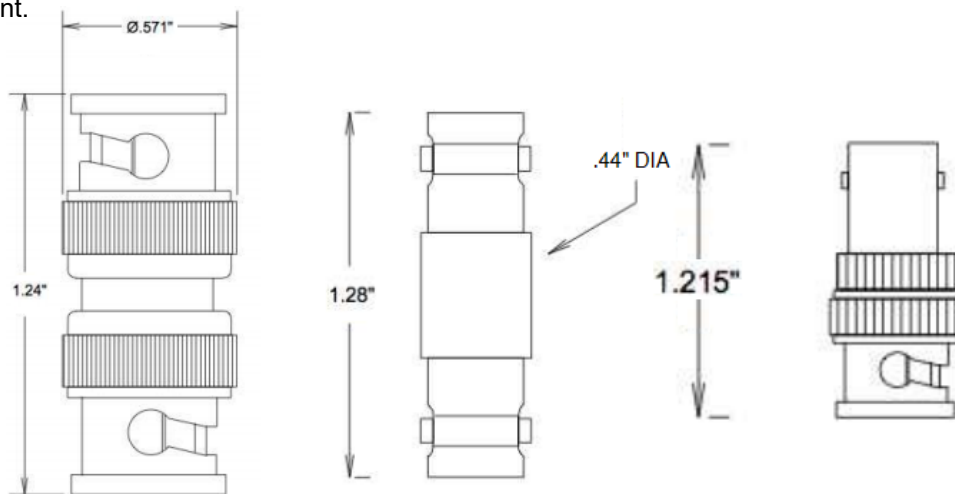
**Construction:** Nickel plated brass body and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR<br>WA1517 |
|-----------------|----------------|
| DC - 4.0        | 1.2            |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



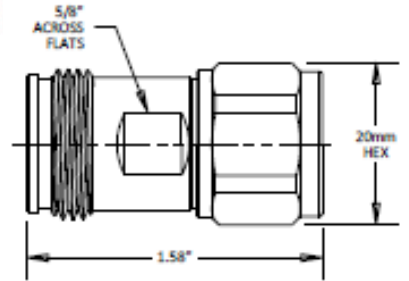
# Precision Coaxial Adapter

# WA1519

DC – 6.0 GHz



\*WA1519-2104



## Features

**2104:** 4.3/10 Female to N type Male interface:  
(IEC 61169-54 / MIL-STD-348B)

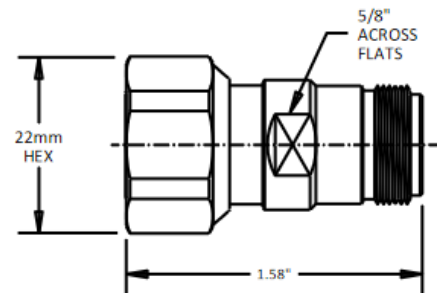
**2203:** 4.3/10 Male to N type Female interface:  
(IEEE P287 / MIL-STD-348B)

**2103:** 4.3/10 Female to N type Female interface:  
(IEC 61169-54 / MIL-STD-348B)

**2204:** 4.3/10 Male to N type Male interface:(MIL-STD-348B)

\*All are ROHS compliant

\*WA1519-2203



## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 6.0 GHz

**Temperature Range:** -45°C to +125°C

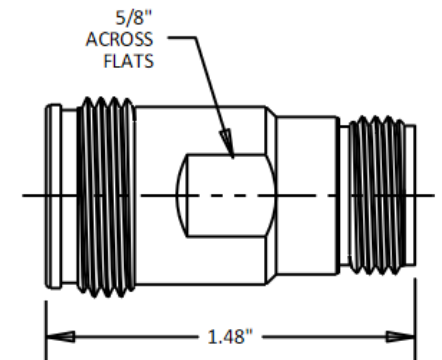
**PIM:** -165 dBc Max with 2 CW Tones @ 43 dBm

**Construction:** Albaloy plated brass body. Beryllium copper contacts with silver contact plating.

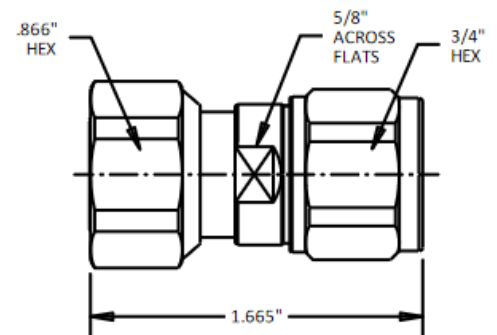
**Maximum VSWR:**

| Frequency (GHz) | VSWR WA1519 |
|-----------------|-------------|
| DC - 6.0        | 1.1         |

\*WA1519-2103



\*WA1519-2204



# Precision Coaxial Adapter

# WA1548

DC – 18.0 GHz

SMA to Type N



## Features

Type N and SMA M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Coupling Torque 14 in-lbs for N type and 8 in-lbs for SMA. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz

**Temperature Range:** -55°C to +100°C

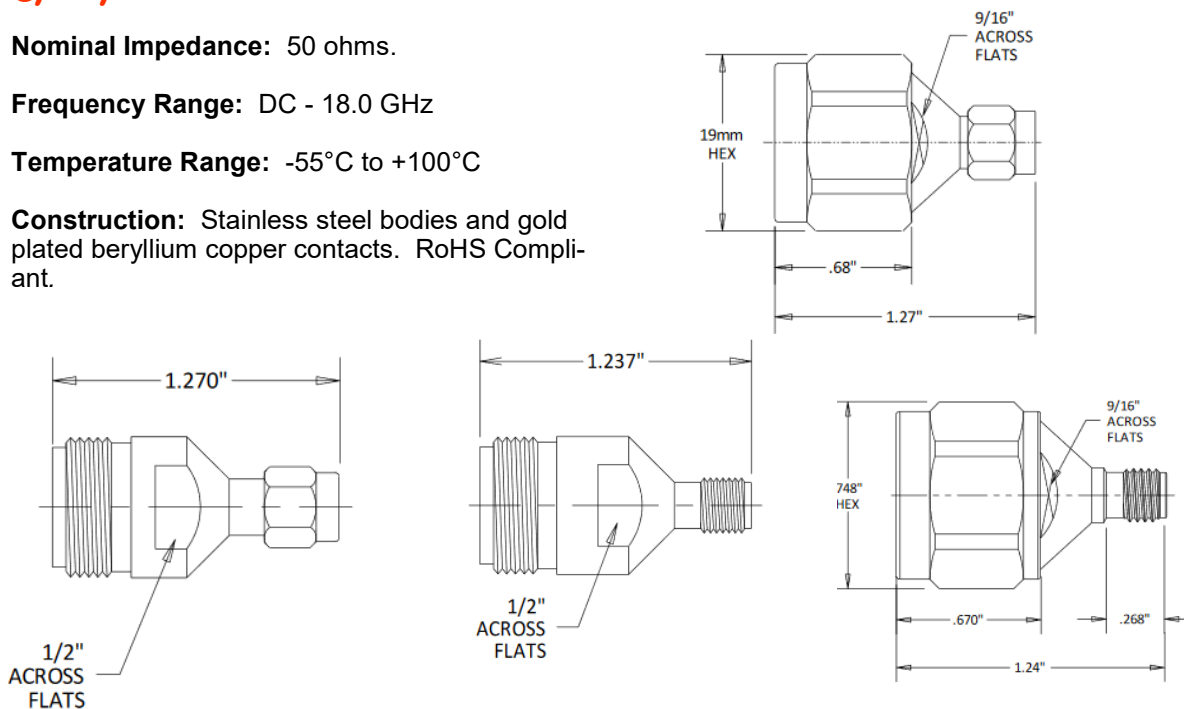
**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1548 |
| DC - 18.0       | 1.15   |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA1550

DC – 18.0 GHz

TNC to Type N



## Features

TNC and Type N M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 18.0       | 1.15 |

## Specifications

**Nominal Impedance:** 50 ohms.

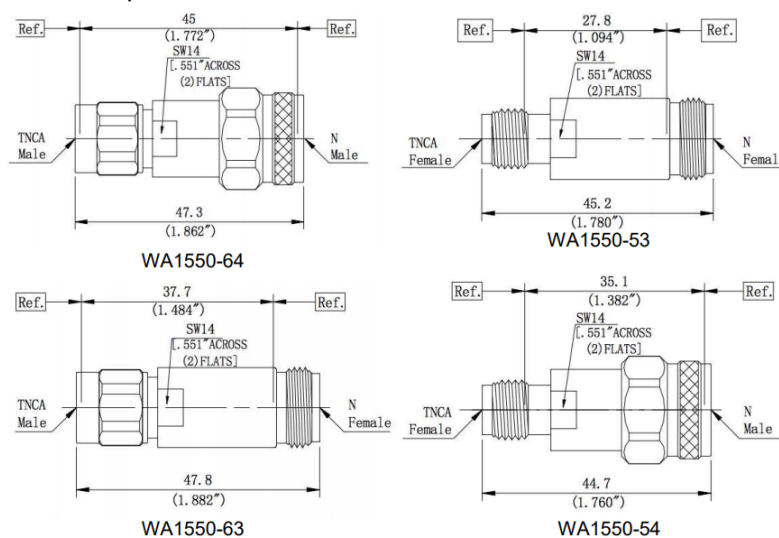
**Frequency Range:** DC - 18.0 GHz

**Temperature Range:** -55°C to +125°C

**Construction:** Stainless steel bodies, stainless steel coupling nuts, and gold plated beryllium copper contacts. RoHS Compliant

## Dimensions:

*Note: Dimensions are given in mm (in) otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*





# Precision Coaxial Adapter

# WA1551

DC – 18.0 GHz

SMA to TNC



## Features

SMA and TNC M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz

**Temperature Range:** -55°C to +100°C

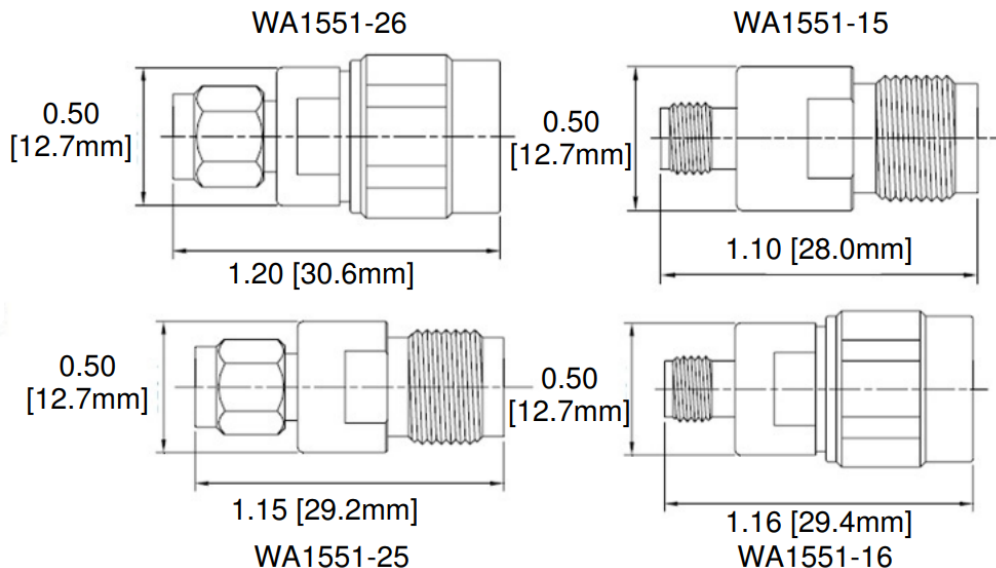
**Construction:** Stainless steel bodies, stainless steel coupling nuts, and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1551 |
| DC - 18.0       | 1.15   |

## Dimensions:

*Note: Dimensions are given in inches (mm) unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA1587

DC – 27.0 GHz

SMA to SMA



## Features

SMA M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 27.0 GHz

**Temperature Range:** -55°C to +100°C

**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

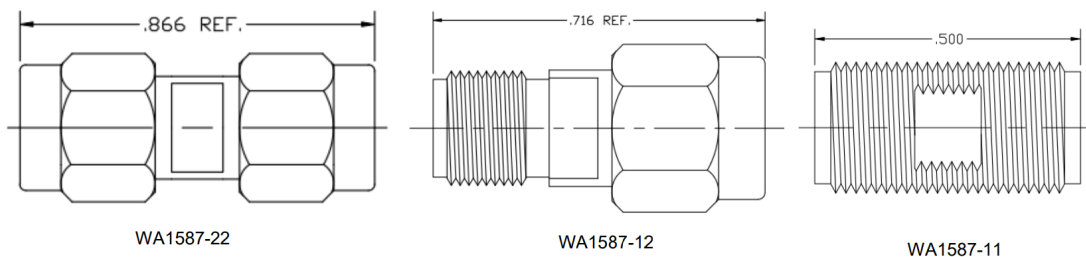
**Options:** Bulkhead Mount, Flange Mount, Right Angle, Swept 45 Degree Angle, Swept 90 Degree Angle.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA1587 |
| DC - 18.0       | 1.15   |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA7002

DC – 4.0 GHz

Type N/TNC to BNC



## Features

Type N or TNC M/F to BNC M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 4.0 GHz

**Temperature Range:** -55°C to +125°C

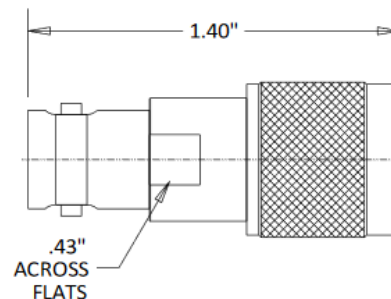
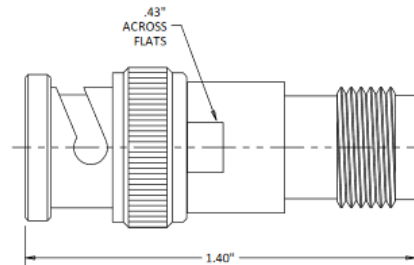
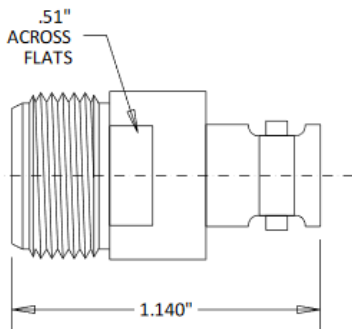
**Construction:** Passivated stainless steel body with nickel plated brass or stainless steel connectors. Gold plated beryllium contacts. RoHs compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA7002 |
| DC - 4.0        | 1.3    |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA7003

DC – 33.0 GHz

3.5 mm to 3.5 mm



## Features

3.5 mm M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 33.0 GHz

**Temperature Range:** -55°C to +100°C

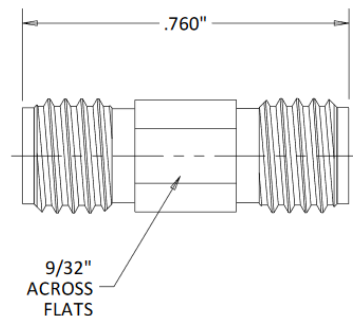
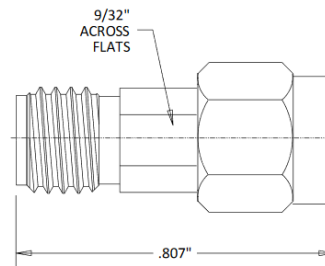
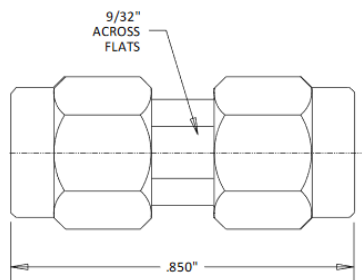
**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA7003 |
| DC - 33.0       | 1.15   |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA7004

DC – 40.0 GHz

2.92 mm to 2.92 mm



## Features

Precision 2.92 mm M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40.0 GHz

**Temperature Range:** -55°C to +100°C

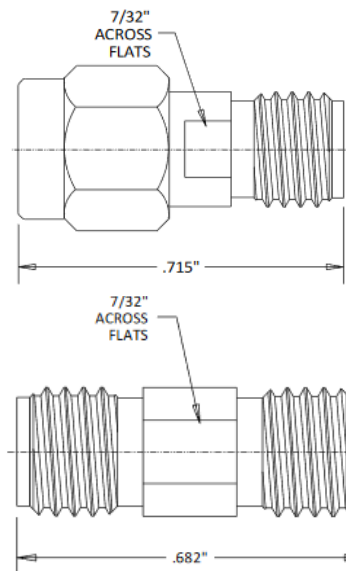
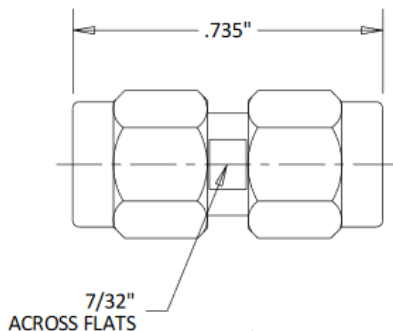
**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA7004 |
| DC - 40.0       | 1.25   |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA7005

DC – 50.0 GHz

2.4 mm to 2.4 mm



## Features

Precision 2.4 mm connectors M/F per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

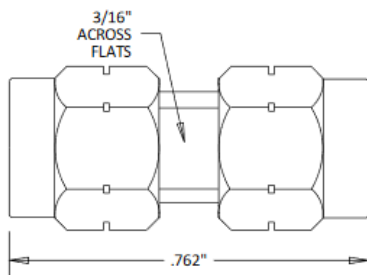
## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 50.0 GHz

**Temperature Range:** -55°C to +100°C

**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

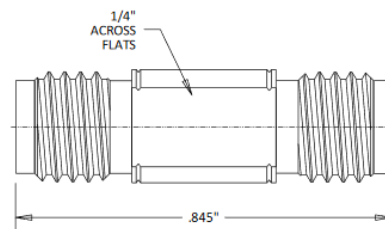
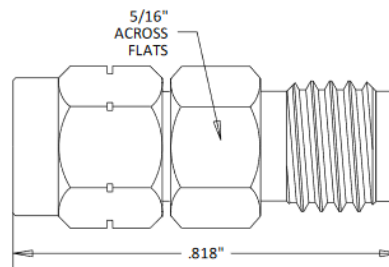


## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA7005 |
| DC - 50.0       | 1.2    |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA7006

DC – 40.0 GHz

2.92 mm to 2.4 mm



## Features

2.92 and 2.4 mm M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA7006 |
| DC - 40.0       | 1.25   |

## Specifications

**Nominal Impedance:** 50 ohms.

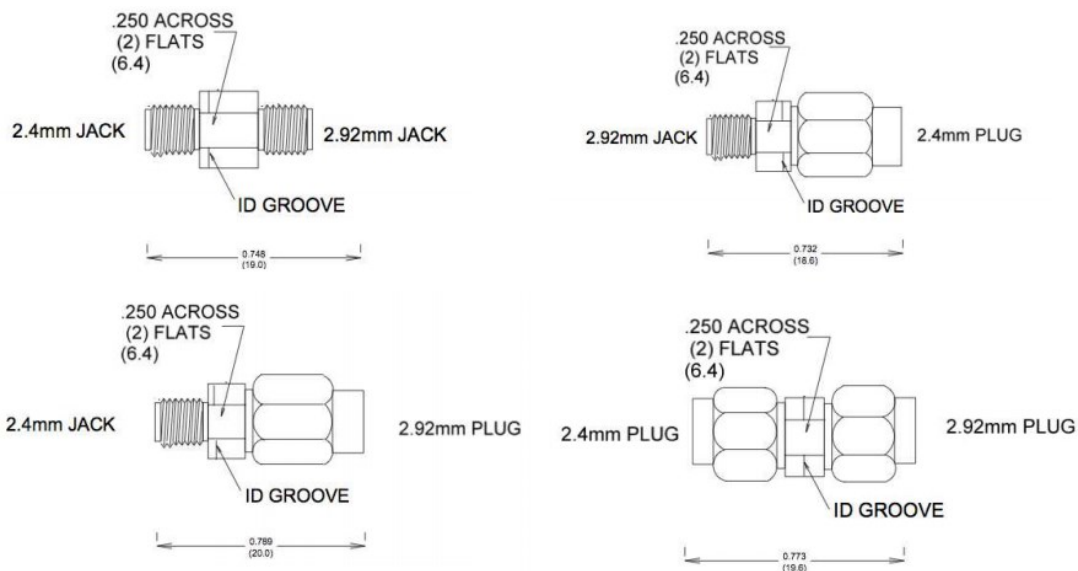
**Frequency Range:** DC - 40.0 GHz

**Temperature Range:** -55°C to +100°C

**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Dimensions:

*Note: Dimensions are given in inches (mm) unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA7007

DC – 33.0 GHz

3.5 mm to 2.4 mm



## Features

3.5 and 2.4 mm M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 33.0 GHz

**Temperature Range:** -55°C to +100°C

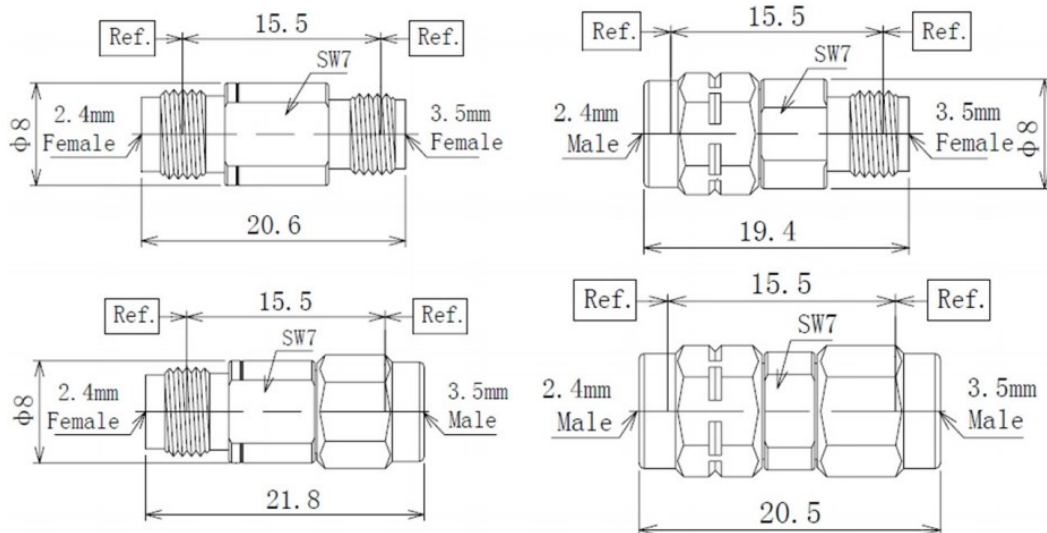
**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA7007 |
| DC - 33.0       | 1.15   |

## Dimensions:

*Note: Dimensions are given in mm unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*





# Precision Coaxial Adapter

# WA7008

DC – 18.0 GHz

3.5 mm to Type N



## Features

3.5 mm and Type N M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz

**Temperature Range:** -60°C to +165°C

**Maximum Insertion Loss:** 0.15 dB

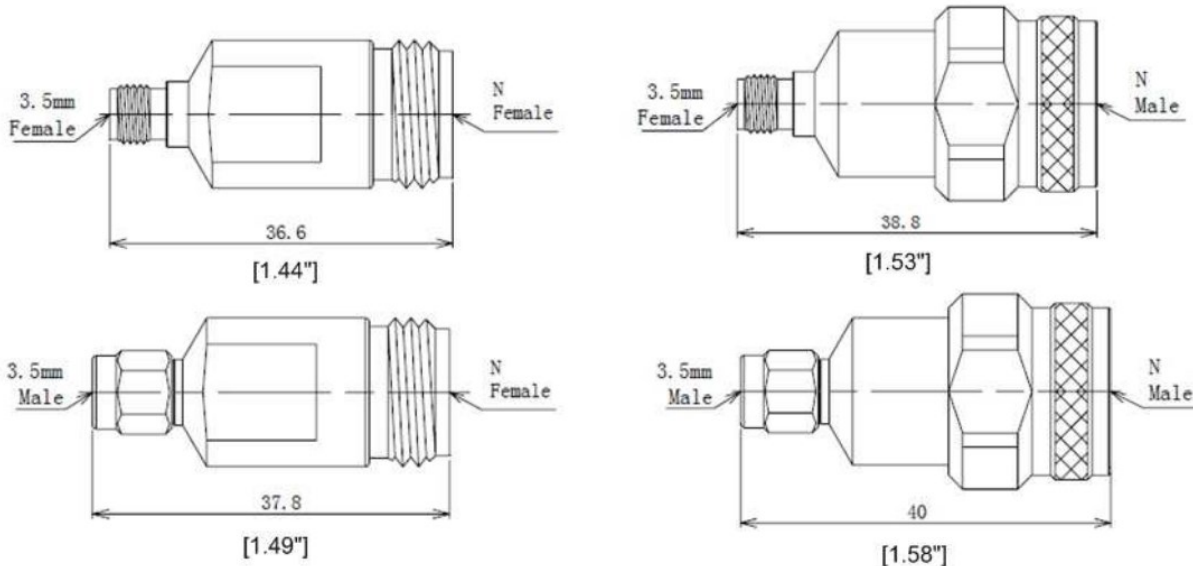
**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA7008 |
| DC - 18.0       | 1.15   |

## Dimensions:

*Note: Dimensions are given in mm (in) unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



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# Precision Coaxial Adapter

# WA7009

DC – 18.0 GHz

2.92 mm to Type N



## Features

2.92 mm and Type N M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz

**Temperature Range:** -55°C to +100°C

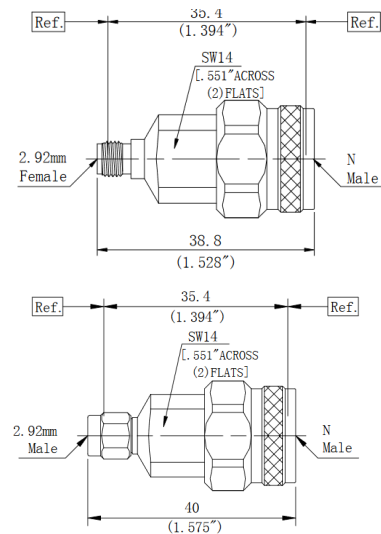
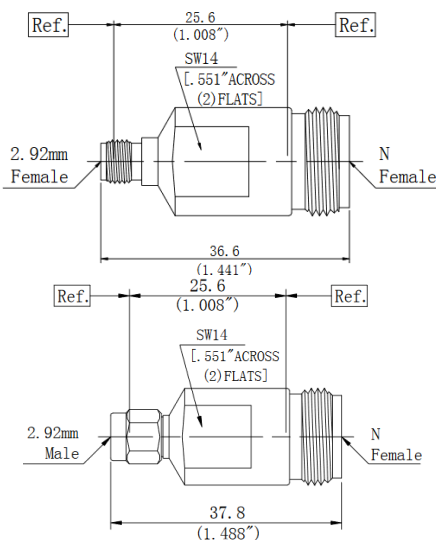
**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA7009 |
| DC - 18.0       | 1.15   |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA7010

DC – 27.0 GHz

2.92 mm to SMA



## Features

2.92 mm and SMA M/F connectors per MIL-STD -348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 27.0       | 1.2  |

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 27.0 GHz

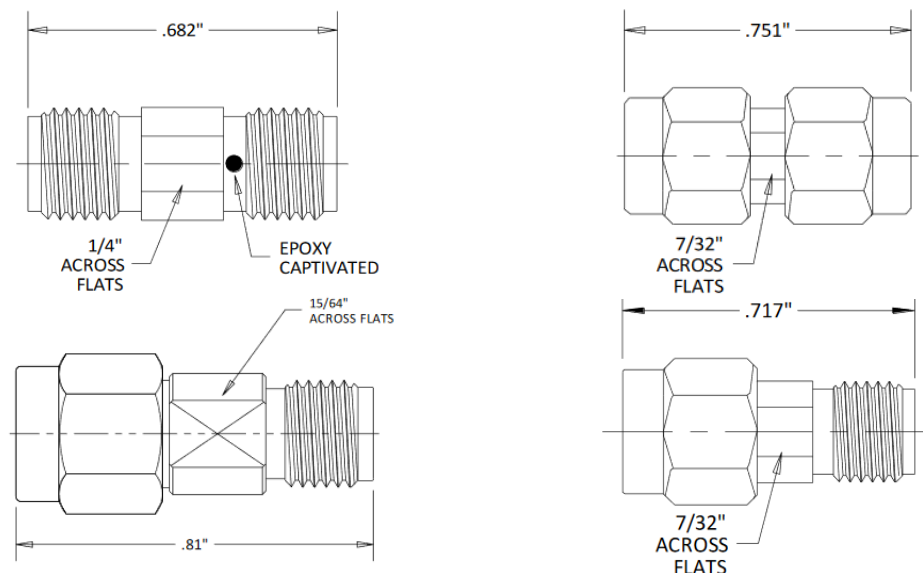
**Power:** Up to 10 W

**Temperature Range:** -55°C to +100°C

**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



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# Precision Coaxial Adapter

# WA7012

DC –18.0 GHz

2.4 mm to Type N



## Features

2.4 mm and Type N M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA7012 |
| DC - 18.0       | 1.15   |

## Specifications

**Nominal Impedance:** 50 ohms.

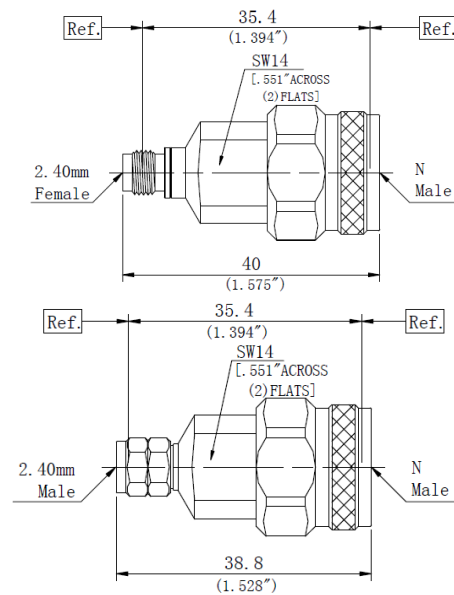
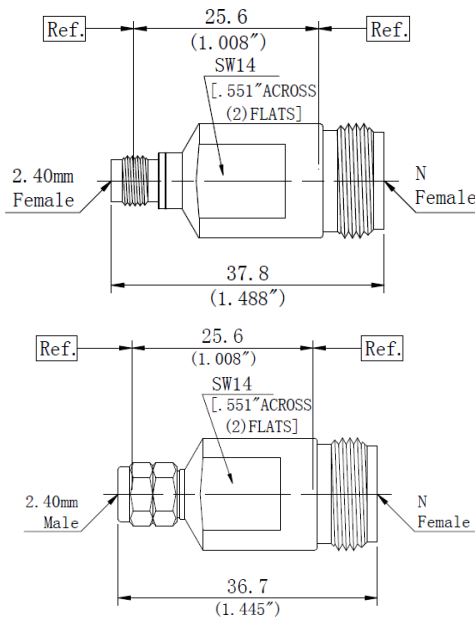
**Frequency Range:** DC - 18.0 GHz

**Temperature Range:** -55°C to +100°C

**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA7013

DC – 27.0 GHz

2.4 mm to SMA



## Features

2.4 mm and Type N M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 27.0 GHz

**Temperature Range:** -55°C to +165°C

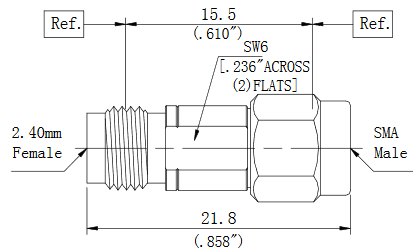
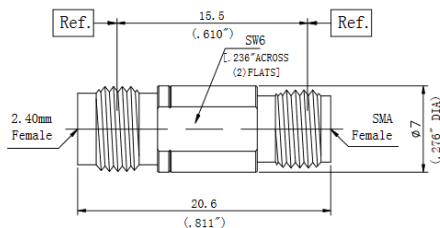
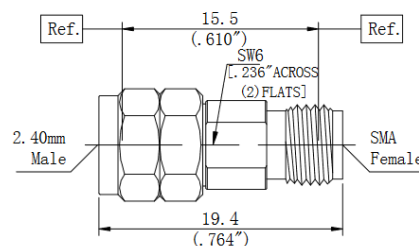
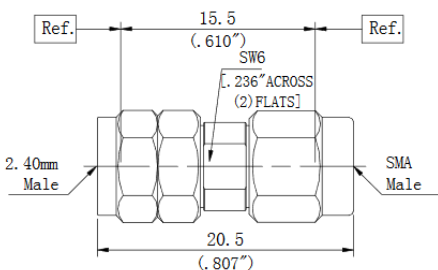
**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR WA7013 |
|-----------------|-------------|
| DC - 27.0       | 1.15        |

## Dimensions:

Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available



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# Precision Coaxial Adapter

# WA7014

DC – 33.0 GHz

2.92 mm to 3.5 mm



## Features

2.92 mm and 3.5 mm M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 33.0 GHz

**Temperature Range:** -55°C to +100°C

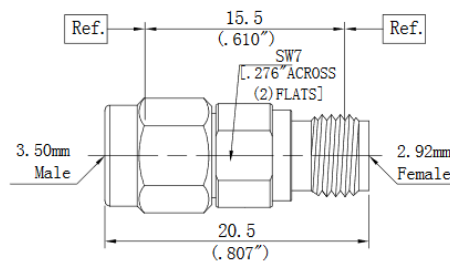
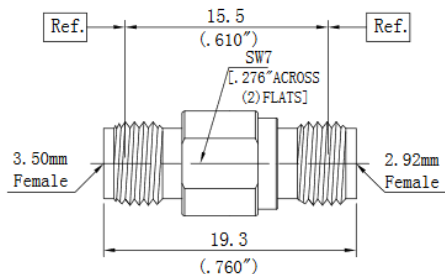
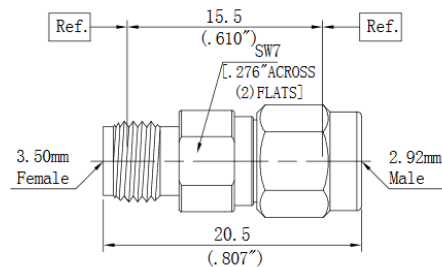
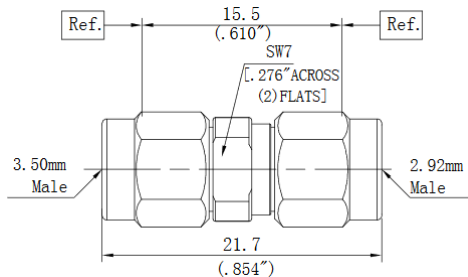
**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA7014 |
| DC - 33.0       | 1.15   |

## Dimensions:

*Note: Dimensions are given in mm (in) unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# Precision Coaxial Adapter

# WA7015

DC – 65.0 GHz

1.85 mm to 1.85 mm



## Features

Precision 1.85 mm M/F connectors per MIL-STD -348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 65.0 GHz

**Temperature Range:** -55°C to +165°C

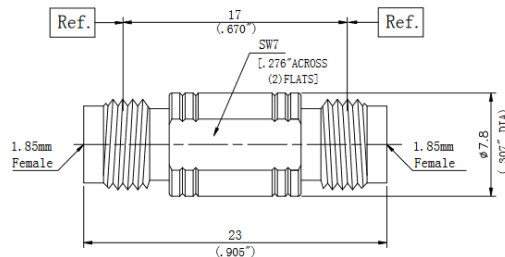
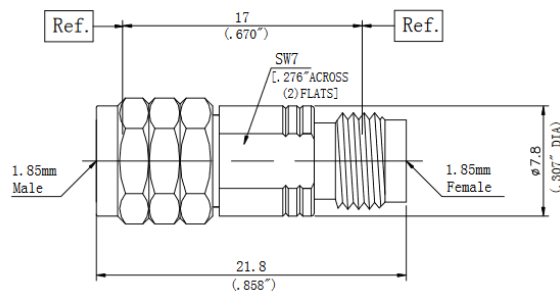
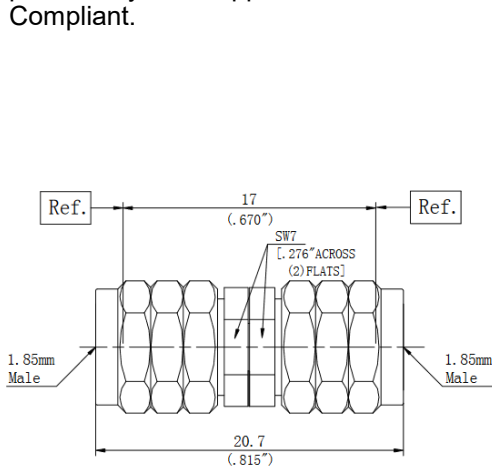
**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR WA7015 |
|-----------------|-------------|
| DC - 65.0       | 1.25        |

## Dimensions:

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available*



# Precision Coaxial Adapter

# WA7017

DC -40.0 GHz

2.92 mm to 1.85 mm



## Features

2.92 mm and 1.85 mm M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40.0 GHz

**Temperature Range:** -55°C to +165°C

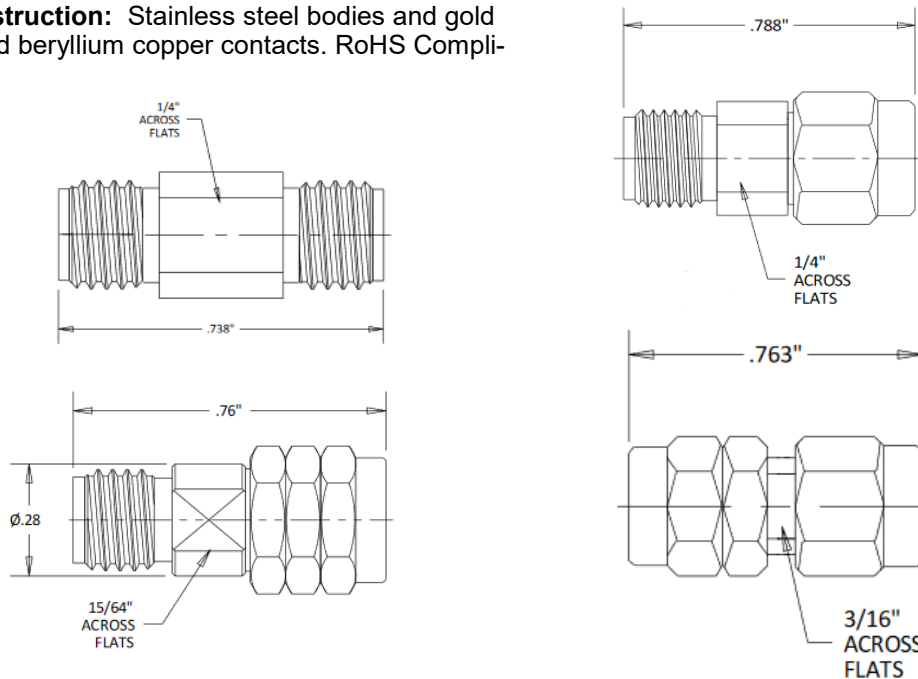
**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 40.0       | 1.25 |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



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# Precision Coaxial Adapter

# WA7018

DC – 27.0 GHz

SMA to 3.5 mm



## Features

SMA and 3.5 mm M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 27.0 GHz

**Temperature Range:** -55°C to +165°C

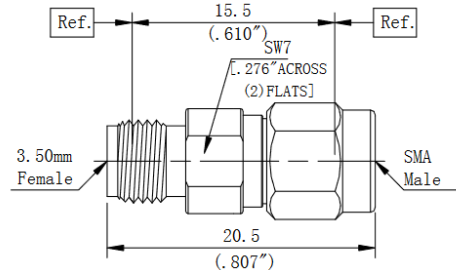
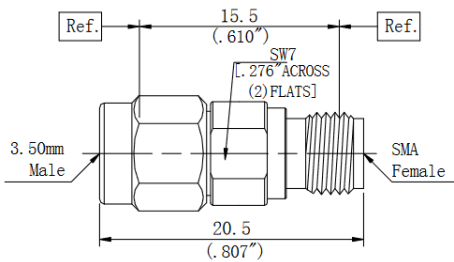
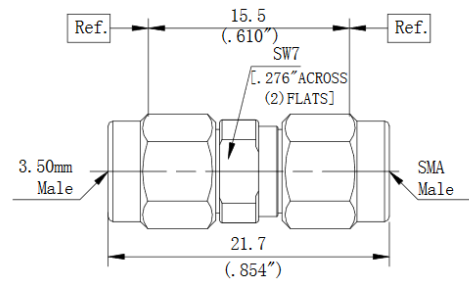
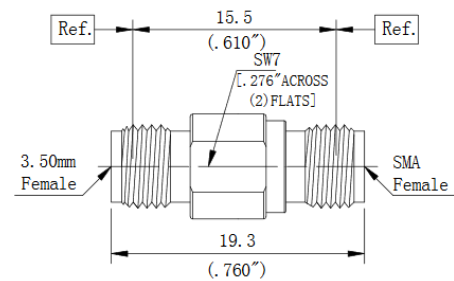
**Construction:** Stainless steel bodies and gold plated beryllium copper per contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |
|-----------------|--------|
|                 | WA7018 |
| DC - 27.0       | 1.15   |

## Dimensions:

*Note: Dimensions are given in mm (in) unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



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# Precision Coaxial Adapter

# WA7019

DC – 33.0 GHz

1.85 mm to 3.5 mm



## Features

1.85 mm and 3.5 mm M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 33.0 GHz

**Temperature Range:** -65°C to +85°C

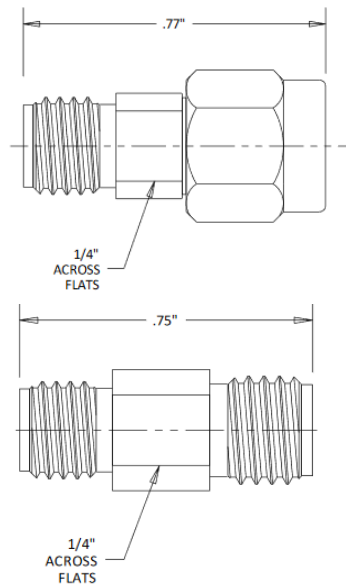
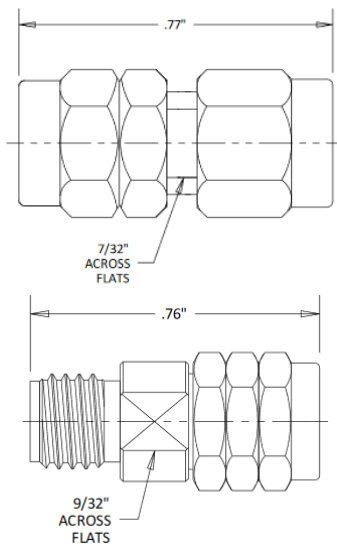
**Construction:** Stainless steel bodies and gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 33.0       | 1.25 |

## Dimensions:

*Note: Dimensions are given in inches unless otherwise specified. Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



# PRECISION ATTENUATOR SETS

DC – 40.0 GHz

2– 5 WATTS

## Precision Coaxial Attenuator Sets

| Model Number | Frequency Range DC - (GHz) | Average Power (W) | Peak Power (kW) | Standard* Attenuation Values (dB) | Connectors  | Attenuators Used  | Page No. |
|--------------|----------------------------|-------------------|-----------------|-----------------------------------|-------------|-------------------|----------|
| WAS1         | 12.4 and 3                 | 5 and 2           | 1               | 3, 6, 10, 20                      | N           | 4 x WA1, 4 x WA50 | 201      |
| WAS6         | 18                         | 5                 | 1               | 3,6,10,20                         | N           | 4 x WA2           | 208      |
| WAS18        | 18                         | 5                 | 1               | 1,3,6,10,20,30                    | Precision N | 6 x WA44          | 202      |
| WAS19        | 26.5                       | 2                 | 0.5             | 3,6,10,20                         | SMA         | 4 x WA9           | 203      |
| WAS20        | 40                         | 2                 | 0.2             | 3,6,10,20                         | 2.92 mm     | 4 x WA54          | 204      |
| WAS4         | 18                         | 2                 | 0.5             | 3,6,10,20                         | SMA         | 4 x WA4           | 205      |
| WAS4C        | 18                         | 2                 | 0.25            | 3,6,10,20                         | SMA         | 4 x WA4C          | 206      |
| WAS4M        | 18                         | 2                 | 0.5             | 3,6,10,20                         | SMA         | 4 x WA4M          | 207      |
| WAS54        | 40                         | 2                 | 0.2             | 3, 6, 10, 20                      | 2.92mm      | 4 x WA54          | 209      |

\* Other configurations are available

### Features

- Calibration Data:** Attenuators are calibrated at 1 GHz intervals. Option 890 adds calibration data at 0.1 GHz and at 0.5 GHz intervals. DC Resistance values also provided.
- Certificate of Calibration:** Provided with each set, contains all calibration data.
- Storage Case:** Compact storage case organizes and protects the attenuators and their calibration data.
- Custom Sets Available:** Build your own set from our extensive offering of Fixed Coaxial Attenuators.



Custom solutions at “off-the-shelf” prices



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# PRECISION ATTENUATOR SET

# WAS1

4 WA50's (3, 6, 10, 20 dB) and 4 model WA1's (3, 6, 10, 20 dB)

DC – 12.4 GHz (WA 1)    DC - 3.0 GHz (WA50)

5 WATTS



## Features

The model WAS1 comes complete with Certificate of Calibration and protective case for storing your attenuators. The WAS1 consists of 4 calibrated model WA1 attenuators and 4 model 50 attenuators at 3, 6, 10, and 20 dB. The following data for each attenuator are provided:

Type N-type stainless steel M/F connectors per MIL-STD-348B, interface dimensions mate nondestructively with MIL-PRF-39012.

Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

### WA1

**Nominal Impedance:** 50 ohms.

**Frequency Range:** : DC - 12.4 GHz.

**Nominal dB Values:** 1 - 60 dB

**Power Coefficient:** <0.005 dB/dB/W. Bidirectional in power.

**Power Rating:** 5 W average. Maximum rated average power to 25°C ambient temperature, de-rated linearly to 0.5 W at 125°C. 1 kW peak (5 µsec pulse width; 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Construction:** Passivated stainless steel body and connectors, gold plated beryllium copper contacts. RoHS Compliant.

### WA50

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 3 GHz.

**Nominal dB Values:** 1 - 50 dB

**Bidirectional in power.**

**Power Rating:** 2 W average to 25°C ambient temperature, derated linearly to 0 W at 125°C. 1 kW peak (5 µsec pulse width, 0.1% duty cycle).

**Temperature Range:** -30°C to 70°C

**Construction:** Stainless steel barrel with passivated stainless steel connectors. Gold plated beryllium copper or stainless steel contacts.

**\*For additional specifications, please visit pages 1 (WA1) and 46 (WA50)**

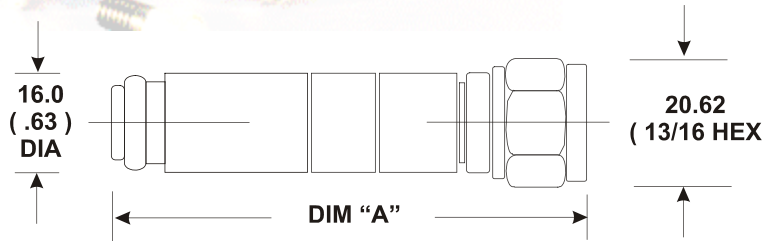
# PRECISION ATTENUATOR SET

# WAS18

1 Each WA44-1, WA44-3, WA44-6, WA44-10, WA44-20, WA44-30

DC – 18 GHz

5 WATTS



## Features

The model WAS18 comes complete with Certificate of Calibration and protective case for storing your attenuators. The WAS18 consists of 6 calibrated model WA44 attenuators at 1, 3, 6, 10, 20, and 30 dB. The following data for each attenuator are provided:

3 DC resistance values and insertion loss every 1.0 GHz from DC through 18.0 GHz.

✦ R.F Calibration Option -890 (42 frequencies) 100, 500, 1,000 and every 500 MHz to 16,000; 16,000 to 18,000 every 250 MHz.

Type N-type stainless steel M/F connectors per MIL-STD-348B, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18 GHz.

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** 5 W average to 25°C ambient temperature, de-rated linearly to 0W at 125° C, 1kW peak (5 µsec pulse width, 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

## Maximum Deviation From Nominal Value

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA44          |
| 1, 3, 6          | 0.3           |
| 10, 20           | 0.5           |
| 30               | 1.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA44 |
| DC - 4.0        | 1.15 |
| 4.0 - 12.4      | 1.2  |
| 12.4 - 18.0     | 1.25 |

## Individual Dimensions:

|                   |             |
|-------------------|-------------|
| Length (Dim "A"): | 74.4 (2.93) |
| Diameter:         | 16.0 (.63)  |
| Weight:           | 0.10 (3.5)  |

**Case Dimensions:** 10 ¾ in. (273 mm) long x 8 ½ in. (215.9 mm) wide x 2 ½ in. (63.5 mm) high.

**Weight:** Net 2 lb., 8 oz. (1.12 kg); Shipping weight, 3 lbs. (1.36 kg)

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper or stainless steel contacts.

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

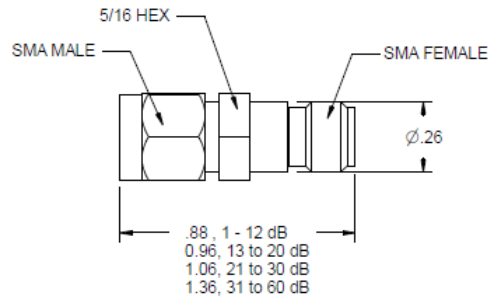
# PRECISION ATTENUATOR SET

1 Each WA9-3, WA9-6, WA9-10, WA9-20

# WAS19

DC - 26.5 GHz

2 WATTS



## Features

The model WAS19 comes complete with Certificate of Calibration and hardwood protective case for storing your attenuators. The WAS19 consists of 4 calibrated model WA9 attenuators, 3, 6, 10, and 20 dB. The following data for each attenuator are provided.

3 DC resistance values and insertion loss every 1.0 GHz from DC through 26.0 GHz.

✪ R.F Calibration Option -890 (42 frequencies) 100, 500, 1,000 and every 500 MHz to 16,000; 16,000 to 18,000 every 250 MHz.

Type SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 26.5 GHz.

**Nominal dB Values:** 0 - 60 dB

**Power Coefficient:** < 0.005 dB/dB/W; Bidirectional in power.

**Power Rating:** 2 W average to 25°C ambient temperature, de-rated linearly to 0.5W at 125°C, 500 W peak (5 µsec pulse width, 0.2% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

## Maximum Deviation From Nominal Value

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
| 3                | 0.5           |
| 6                | 0.6           |
| 10               | 0.8           |
| 20               | 1.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 4.0        | 1.15 |
| 4.0 - 8.0       | 1.2  |
| 8.0 - 12.4      | 1.25 |
| 12.4 - 18.0     | 1.35 |
| 18.0 - 26.5     | 1.5  |

## Individual Dimensions:

| Attenuation (dB) | WA9        |           |
|------------------|------------|-----------|
|                  | Length     | Weight    |
| 3, 6, 10         | 22.4 (.88) | 3.9 (.14) |
| 20               | 24.4 (.96) | 4.3 (.15) |

Body Diameter: 6.6 (.26)

**Case Dimensions:** 5 1/2 in. (139.7 mm) long x 4 7/8 in. (123.8 mm) wide x 2 3/8 in. (60.3 mm) high.

**Weight:** Net 1 lb., 4 oz. (0.56 kg); Shipping weight, 2 lbs. 8 oz. (1.14 kg)

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts.

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

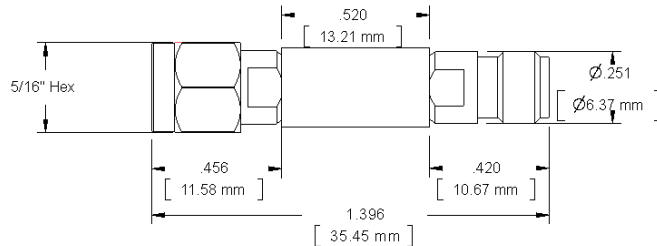
# PRECISION ATTENUATOR SET

1 Each WA54-3, WA54-6, WA54-10, WA54-20

# WAS20

DC - 40 GHz

2 WATTS



## Features

The model WAS20 comes complete with Certificate of Calibration and hardwood protective case for storing your attenuators. The WAS20 consists of 4 calibrated model WA54 attenuators, 3, 6, 10, and 20 dB. The following data for each attenuator are provided.

3 DC resistance values and insertion loss every 1.0 GHz from DC through 40.0 GHz.

✪ R.F Calibration Option -890: 100, 500, 1,000 and every 500 MHz to 26,500; 26,500 to 40,000 every 250 MHz.

Precision 2.92mm stainless steel M/F connectors per MIS-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40 GHz.

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** **2 W** average to 25°C ambient temperature, de-rated linearly to 0.1W at 100°C, **200 W** peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

## Maximum Deviation From Nominal Value:

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
| 3, 6, 10, 20     | 1.0           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 26.5       | 1.25 |
| 26.5 - 40.0     | 1.45 |

## Individual Dimensions:

|                |             |
|----------------|-------------|
| Length:        | 35.5 (1.40) |
| Body Diameter: | 6.4 (.25)   |
| Weight:        | .008 (.28)  |

**Case Dimensions:** 5 ½ in. (139.7 mm) long x 4 7/8 in. (123.8 mm) wide x 2 3/8 in. (60.3 mm) high.

**Weight:** Net 1 lb., 4 oz. (0.56 kg); Shipping weight, 2 lbs. 8 oz. (1.14 kg)

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant.

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

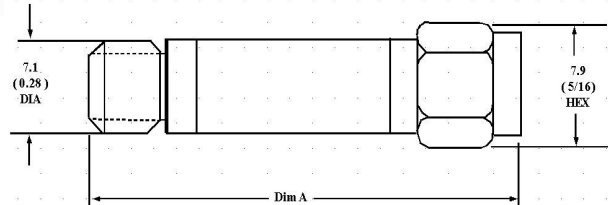
# PRECISION ATTENUATOR SET

1 Each WA4-3, WA4-6, WA4-10, WA4-20

# WAS4

DC – 18.0 GHz

2 WATTS



## Features

The model WAS4 comes complete with Certificate of Calibration and hardwood protective case for storing your attenuators. The WAS4 consists of 4 calibrated model WA4 attenuators, 3, 6, 10, and 20 dB. The following data for each attenuator are provided.

3 DC resistance values and insertion loss every 1.0 GHz from DC through 18.0 GHz.

✦ R.F Calibration Option -890: 100, 500, 1,000 and every 500 MHz to 26,500; 26,500 to 40,000 every 250 MHz.

Type SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** **2 W** average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at 125° C, **500 W** peak (5 µsec pulse width, 0.2% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

**Maximum Deviation From Nominal Value (including frequency sensitivity):**

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA4           |
| 3, 6             | 0.3           |
| 10               | 0.5           |
| 20               | 0.7           |

**Maximum VSWR:**

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA4  |
| DC - 4.0        | 1.15 |
| 4.0 - 8.0       | 1.2  |
| 8.0 - 12.4      | 1.25 |
| 12.4 - 18.0     | 1.35 |

**Individual Dimensions:**

| Attenuation (dB) | WA4              |           |
|------------------|------------------|-----------|
|                  | Length (Dim "A") | Weight    |
| 3, 6, 10         | 31.2 (1.23)      | 3.9 (.14) |
| 20               | 33.3 (1.31)      | 4.3 (.15) |

Body Diameter: 7.1 (2.8)

**Case Dimensions:** 5 ½ in. (139.7 mm) long x 4 7/8 in. (123.8 mm) wide x 2 3/8 in. (60.3 mm) high.

**Weight:** Net 1 lb., 4 oz. (0.56 kg); Shipping weight, 2 lbs. 8 oz. (1.14 kg)

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts, stainless steel male contacts. RoHS Compliant

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*



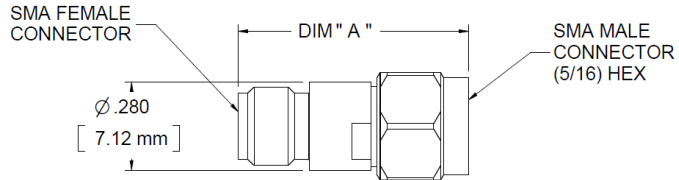
# PRECISION ATTENUATOR SET

1 Each WA4C-3, WA4C-6, WA4C-10, WA4C-20

# WAS4C

DC – 18.0 GHz

2 WATTS



## Features

The model WAS4C comes complete with Certificate of Calibration and hardwood protective case for storing your attenuators. The WAS4C consists of 4 calibrated model WA4C attenuators, 3, 6, 10, and 20 dB. The following data for each attenuator are provided.

3 DC resistance values and insertion loss every 1.0 GHz from DC through 18.0 GHz.

✦ R.F Calibration Option -890: 100, 500, 1,000 and every 500 MHz to 26,500; 26,500 to 40,000 every 250 MHz.

SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Power Coefficient:** < 0.005 dB/dB/W; Bidirectional in power.

**Power Rating:** **2 W** average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at 125° C, **250 W** peak (5µsec pulse width, 0.4% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

## Maximum Deviation From Nominal Value (including frequency sensitivity):

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA4C          |
| 3, 6             | 0.3           |
| 10, 20           | 0.5           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA4C |
| DC - 4.0        | 1.15 |
| 4.0 - 8.0       | 1.2  |
| 8.0 - 12.4      | 1.25 |
| 12.4 - 18.0     | 1.35 |

## Individual Dimensions:

| Attenuation (dB) | WA4C             |           |
|------------------|------------------|-----------|
|                  | Length (Dim "A") | Weight    |
| 3, 6, 10         | 19.3 (0.76)      | 3.9 (.14) |
| 20               | 22.6 (0.89)      | 4.3 (.15) |

Body Diameter: 7.12 (2.80)

**Case Dimensions:** 5 ½ in. (139.7 mm) long x 4 7/8 in. (123.8 mm) wide x 2 3/8 in. (60.3 mm) high.

**Weight:** Net 1 lb., 4 oz. (0.56 kg); Shipping weight, 2 lbs. 8 oz. (1.14 kg)

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts, stainless steel male contacts. RoHS Compliant

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

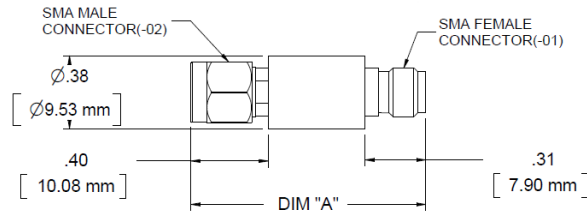
# PRECISION ATTENUATOR SET

1 Each WA4M-3, WA4M-6, WA4M-10, WA4M-20

# WAS4M

DC – 18.0 GHz

2 WATTS



## Features

The model WAS4M comes complete with Certificate of Calibration and hardwood protective case for storing your attenuators. The WAS4M consists of 4 calibrated model WA4M attenuators, 3, 6, 10, and 20 dB. The following data for each attenuator are provided.

3 DC resistance values and insertion loss every 1.0 GHz from DC through 18.0 GHz.

✦ R.F Calibration Option -890: 100, 500, 1,000 and every 500 MHz to 26,500; 26,500 to 40,000 every 250 MHz.

Type SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 18.0 GHz.

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** **2 W** average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at 125° C, **500 W** peak (5µsec pulse width, 0.2% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

## Maximum Deviation From Nominal Value (including frequency sensitivity):

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA4M          |
| 3, 6, 10         | 0.5           |
| 20               | 0.7           |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA4M |
| DC - 4.0        | 1.15 |
| 4.0 - 8.0       | 1.2  |
| 8.0 - 12.4      | 1.25 |
| 12.4 - 18.0     | 1.35 |

## Individual Dimensions:

| Attenuation (dB) | WA4M             |           |
|------------------|------------------|-----------|
|                  | Length (Dim "A") | Weight    |
| 3, 6, 10         | 31.2 (1.23)      | 3.9 (.14) |
| 20               | 33.3 (1.31)      | 4.3 (.15) |

Body Diameter: 9.53 (0.38)

**Case Dimensions:** 5 ½ in. (139.7 mm) long x 4 7/8 in. (123.8 mm) wide x 2 3/8 in. (60.3 mm) high.

**Weight:** Net 1 lb., 4 oz. (0.56 kg); Shipping weight, 2 lbs. 8 oz. (1.14 kg)

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts, stainless steel male contacts. RoHS Compliant

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# PRECISION ATTENUATOR SET

1 Each WA2-3, WA2-6, WA2-10, WA2-20

# WAS6

DC – 18.0 GHz

5 WATTS



## Features

The model WAS6 comes complete with Certificate of Calibration and hardwood protective case for storing your attenuators. The WAS6 consists of 4 calibrated model WA2 attenuators, 3, 6, 10, and 20 dB. The following data for each attenuator are provided.

3 DC resistance values and insertion loss every 1.0 GHz from DC through 18.0 GHz. (18 frequencies)

⊕ R.F Calibration Option -890 (42 frequencies) 100, 500, 1,000 and every 500 MHz to 16,000; 16,000 to 18,000 every 250 MHz.

These attenuators are designed to meet environmental tests of MIL-A-3933.

Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

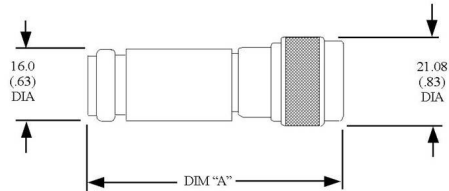
**Frequency Range:** DC - 18.0 GHz.

**Power Coefficient:** <0.005 dB/dB/W. Bidirectional in power.

**Power Rating:** 5 W average. Maximum rated average power to 25°C ambient temperature, de-rated linearly to 0.5 W at 125°C. 1 kW peak (5 µsec pulse width; 0.25% duty cycle).

**Temperature Range:** -55°C to +125°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.



## Maximum Deviation From Nominal Value (including frequency sensitivity):

| Attenuation (dB) | Accuracy ± dB |
|------------------|---------------|
|                  | WA2           |
| 3, 6             | 0.3           |
| 10, 20           | 0.5           |

## Maximum VSWR

| Frequency (GHz) | VSWR |
|-----------------|------|
|                 | WA2  |
| DC - 4.0        | 1.15 |
| 4.0 - 8.0       | 1.2  |
| 8.0 - 12.4      | 1.25 |
| 12.4 - 18.0     | 1.4  |

## Individual Dimensions:

Length (Dim "A"): 57.2 (2.25)  
 Weight: 70 (2.6)  
 Diameter: 16 (0.63)

**Case Dimensions:** 4 ¾ in. (120.6 mm) long x 4 ½ in. (114.3 mm) wide x 2 ¾ in. (44.5 mm) high.

**Weight:** Net 1 lb., 13 oz. (0.82 kg); Shipping weight, 3 lbs. (1.36 kg)

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant.

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# WEINSCHEL ASSOCIATES

TEL: 877.948.8342 / 301.963.4630 ♦ Fax: 301.963.8640

WEB: <http://www.WeinschelAssociates.com>

EMAIL: [sales@WeinschelAssociates.com](mailto:sales@WeinschelAssociates.com)



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Rev -

Specification  
Subject to change  
without notice

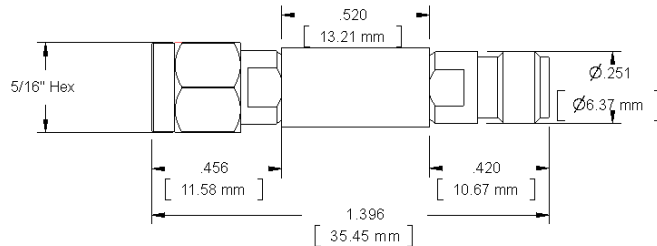
# PRECISION ATTENUATOR SET

1 Each WA54-3, WA54-6, WA54-10, WA54-20

# WAS54

DC - 40 GHz

2 WATTS



## Features

The model WAS54 comes complete with Certificate of Calibration and hardwood protective case for storing your attenuators. The WAS54 consists of 4 calibrated model WA54 attenuators, 3, 6, 10, and 20 dB. The following data for each attenuator are provided.

3 DC resistance values and insertion loss every 1.0 GHz from DC through 40.0 GHz.

✿ R.F Calibration Option -890: 100, 500, 1,000 and every 500 MHz to 26,500; 26,500 to 40,000 every 250 MHz.

Precision 2.92mm stainless steel M/F connectors per MIS-STD-348A, interface dimensions mate non-destructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** DC - 40 GHz.

**Power Coefficient:** < 0.005 dB/dB/W;  
Bidirectional in power.

**Power Rating:** **2 W** average to 25°C ambient temperature, de-rated linearly to 0.1W at 100° C, **200 W** peak (5 µsec pulse width, 0.5% duty cycle).

**Temperature Range:** -55°C to +100°C.

**Temperature Coefficient:** < 0.0004 dB/dB/°C.

## Maximum Deviation From Nominal Value:

| Attenuation (dB) | Accuracy ± dB |              |
|------------------|---------------|--------------|
|                  | DC to 26.5    | 26.5 to 40.0 |
| 3, 6             | 0.5           | 1.0          |
| 10, 20           | 1.0           | 1.0          |

## Maximum VSWR:

| Frequency (GHz) | VSWR |
|-----------------|------|
| DC - 26.5       | 1.25 |
| 26.5 - 40.0     | 1.45 |

## Individual Dimensions:

Length: 36.0 (1.42)  
Body Diameter: 7.1 (.28)  
Weight: .008 (.28)

**Case Dimensions:** 5 ½ in. (139.7 mm) long x 4 7/8 in. (123.8 mm) wide x 2 3/8 in. (60.3 mm) high.

**Weight:** Net 1 lb., 4 oz. (0.56 kg); Shipping weight, 2 lbs. 8 oz. (1.14 kg)

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant.

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# DC BLOCKS

9 kHz – 40 GHz

50—200 VOLTS

## DC Blocks (Inner Only)

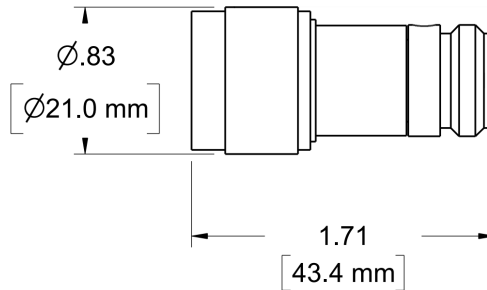
| Model Number | Frequency Range    | Insertion Loss (dB, max) | VSWR (max) | Working Voltage (V) | Connectors | Page No. |
|--------------|--------------------|--------------------------|------------|---------------------|------------|----------|
| WA6043       | 9 kHz to 18 GHz    | 0.9                      | 1.35       | 50                  | N          | 211      |
| WA6046/6     | 10 MHz to 6 GHz    | 0.8                      | 1.4        | 50                  | N          | 212      |
| WA6055H/6    | 10 MHz to 6 GHz    | 0.8                      | 1.4        | 50                  | SMA        | 213      |
| WA7046/6     | 10 MHz to 6 GHz    | 0.8                      | 1.5        | 100                 | N          | 217      |
| WA7055H/6    | 10 MHz to 6 GHz    | 0.8                      | 1.4        | 100                 | SMA        | 218      |
| WA8046/6     | 10 MHz to 6 GHz    | 0.8                      | 1.4        | 200                 | N          | 219      |
| WA8055H/6    | 10 MHz to 6 GHz    | 0.8                      | 1.4        | 200                 | SMA        | 220      |
| WA6046/12    | 10 MHz to 12.4 GHz | 0.8                      | 1.5        | 50                  | SMA        | 212      |
| WA6055H/12   | 10 MHz to 12.4 GHz | 0.8                      | 1.5        | 50                  | SMA        | 213      |
| WA7046/12    | 10 MHz to 12.4 GHz | 0.8                      | 1.5        | 100                 | SMA        | 217      |
| WA7055H/12   | 10 MHz to 12.4 GHz | 0.8                      | 1.5        | 100                 | SMA        | 218      |
| WA8046/12    | 10 MHz to 12.4 GHz | 0.8                      | 1.5        | 200                 | N          | 219      |
| WA8055H/12   | 10 MHz to 12.4 GHz | 0.8                      | 1.5        | 200                 | SMA        | 220      |
| WA6046       | 10 MHz to 18 GHz   | 0.8                      | 1.5        | 50                  | N          | 212      |
| WA6055H      | 10 MHz to 18 GHz   | 0.8                      | 1.5        | 50                  | SMA        | 213      |
| WA7046       | 10 MHz to 18 GHz   | 0.8                      | 1.5        | 100                 | N          | 217      |
| WA7055H      | 10 MHz to 18 GHz   | 0.8                      | 1.5        | 100                 | SMA        | 218      |
| WA8046       | 10 MHz to 18 GHz   | 0.8                      | 1.5        | 200                 | N          | 219      |
| WA8055H      | 10 MHz to 18 GHz   | 0.8                      | 1.5        | 200                 | SMA        | 220      |
| WA6055H/26   | 10 MHz to 26 GHz   | 1.0                      | 1.55       | 50                  | SMA        | 213      |
| WA6056H      | 9 kHz to 26.5 GHz  | 0.8                      | 1.7        | 50                  | SMA        | 214      |
| WA6057H      | 9 kHz to 30 GHz    | 1.0                      | 1.7        | 50                  | 3.5 mm     | 215      |
| WA6058H      | 9 kHz to 40 GHz    | 1.0                      | 1.7        | 50                  | 2.92 mm    | 216      |

## DC Blocks (Outer Only)

| Model Number | Frequency Range  | Insertion Loss (dB, max) | VSWR (max) | Working Voltage (V) | Connectors | Page No. |
|--------------|------------------|--------------------------|------------|---------------------|------------|----------|
| WA8038       | 10 MHz to 18 GHz | 0.5                      | 1.35       | 200                 | SMA        | 221      |

## DC Block (Inner/Outer)

| Model Number | Frequency Range  | Insertion Loss (dB, max) | VSWR (max) | Working Voltage (V) | Connectors | Page No. |
|--------------|------------------|--------------------------|------------|---------------------|------------|----------|
| WA8039       | 10 MHz to 18 GHz | 0.5                      | 1.35       | 200                 | SMA        | 222      |



### Features

Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

Low cut-in frequency, usable to 22 GHz.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** 9 kHz - 18 GHz

**Voltage:** 50 volts

**Power Rating:** 20 W maximum average rated power to 25°C ambient temperature, de-rated linearly to 0.5 W at 125°C (Bidirectional). 100 W peak power.

**Temperature Range:** -65°C to +125°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant.

### Maximum VSWR:

| Frequency       | VSWR   |
|-----------------|--------|
|                 | WA6043 |
| 9 kHz - 11 kHz  | 1.5    |
| 11 kHz - 18 GHz | 1.35   |

### Maximum Insertion Loss:

| Frequency      | Insertion Loss (dB) |
|----------------|---------------------|
|                | WA6043              |
| 9 kHz - 18 GHz | 0.9                 |

### Dimensions:

|           |             |
|-----------|-------------|
| Length:   | 43.4 (1.71) |
| Diameter: | 21.0 (0.83) |
| Weight:   | 70 (2.6)    |

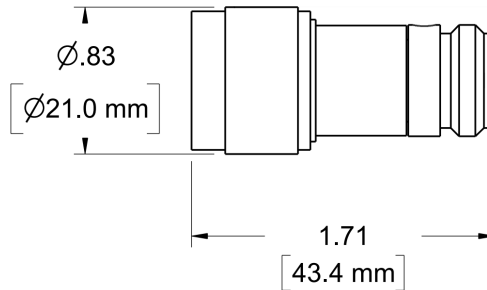
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# DC Block

# WA6046

WA6046/6: 10 MHz – 6.0 GHz  
WA6046/12: 10 MHz – 12.4 GHz  
WA6046: 10 MHz – 18.0 GHz

**50 VOLTS**



## Features

Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

Inner only– 6.0/12.4/18.0 GHz N-Type DC Block.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA6046: 10 MHz - 18.0 GHz.  
WA6046/6: 10 MHz - 6.0 GHz.  
WA6046/12: 10 MHz - 12.4 GHz.

**Voltage:** 50 volts

**Power Rating:** 5 W maximum average rated power to 25°C ambient temperature (Bidirectional).

**Temperature Range:** -65°C to +125°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency (GHz) | VSWR   |          |           |
|-----------------|--------|----------|-----------|
|                 | WA6046 | WA6046/6 | WA6046/12 |
| 0.01 - 1.0      | 1.2    | 1.2      | 1.2       |
| 1.0 - 4.0       | 1.3    | 1.3      | 1.3       |
| 4.0 - 8.0       | 1.4    | 1.4      | 1.4       |
| 8.0 - 18.0      | 1.5    | N/A      | 1.5       |

## Maximum Insertion Loss:

| Frequency (GHz) | Insertion Loss (dB) |          |           |
|-----------------|---------------------|----------|-----------|
|                 | WA6046              | WA6046/6 | WA6046/12 |
| 0.01 - 1.0      | 0.25                | 0.25     | 0.25      |
| 1.0 - 4.0       | 0.5                 | 0.5      | 0.5       |
| 4.0 - 8.0       | 0.8                 | 0.8      | 0.8       |
| 8.0 - 18.0      | 0.8                 | N/A      | 0.8       |

## Dimensions and Weight:

Length: 43.4 (1.71)  
Diameter: 21.0 (0.83)  
Weight: 70 (2.6)

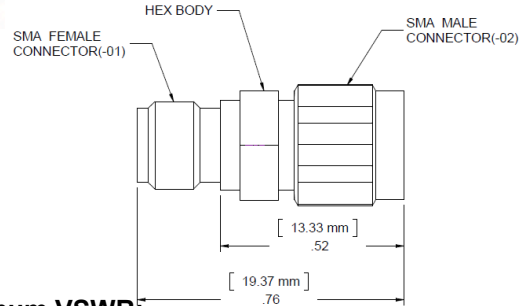
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# DC Block

# WA6055H

- WA6055H/6: 10 MHz – 6.0 GHz
- WA6055H/12: 10 MHz – 12.4 GHz
- WA6055H: 10 MHz – 18.0 GHz
- WA6055H/26: 10 MHz – 26.0 GHz

**50 VOLTS**



**Maximum VSWR:**

| Frequency (GHz) | VSWR    |            |             |             |
|-----------------|---------|------------|-------------|-------------|
|                 | WA6055H | WA6055H /6 | WA6055H /12 | WA6055H /26 |
| 0.01 - 1.0      | 1.2     | 1.2        | 1.2         | 1.2         |
| 1.0 - 4.0       | 1.3     | 1.3        | 1.3         | 1.3         |
| 4.0 - 8.0       | 1.4     | 1.4        | 1.4         | 1.4         |
| 8.0 - 18.0      | 1.5     | N/A        | 1.5         | 1.5         |
| 18.0 - 26.0     | N/A     | N/A        | N/A         | 1.55        |

## Features

SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

Inner Only– 6.0/12.4/18.0/26.0 GHz SMA DC Block. 5/16 hex provides a secure torquing surface.

## Specifications

**Nominal Impedance:** 50 ohms.

### Frequency Range:

- WA6046: 10 MHz - 18.0 GHz.
- WA6046/6: 10 MHz - 6.0 GHz.
- WA6046/12: 10 MHz - 12.4 GHz.
- WA6046/26: 10 MHz - 26.0 GHz.

**Voltage:** 50 volts

**Power Rating:** 2 W maximum average rated power to 25°C ambient temperature.

**Temperature Range:** -65°C to +125°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant.

**Maximum Insertion Loss:**

| Frequency (GHz) | Insertion Loss (dB) |            |             |             |
|-----------------|---------------------|------------|-------------|-------------|
|                 | WA6055H             | WA6055H /6 | WA6055H /12 | WA6055H /26 |
| 0.01 - 1.0      | 0.25                | 0.25       | 0.25        | 0.25        |
| 1.0 - 4.0       | 0.5                 | 0.5        | 0.5         | 0.5         |
| 4.0 - 8.0       | 0.8                 | 0.8        | 0.8         | 0.8         |
| 8.0 - 18.0      | 0.8                 | N/A        | 0.8         | 0.8         |
| 18.0 - 26.0     | N/A                 | N/A        | N/A         | 1.0         |

**Dimensions:**

Length: 19.37 (0.76)  
Weight: 4 (0.14)

*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

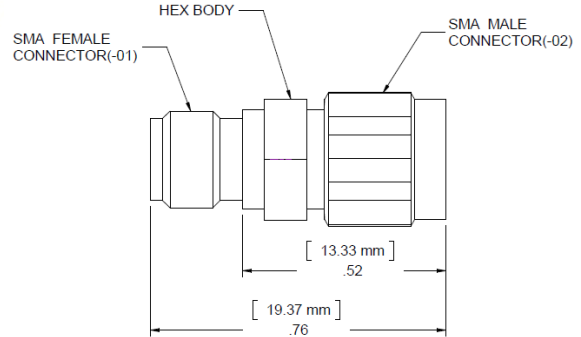


# DC Block

# WA6056H

## 9 kHz – 26.5 GHz

## 50 VOLTS



### Features

SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

5/16 hex provides secure torquing surface for mating in hard to get places. Low cut-in frequency.

Inner DC block combined with high frequency response.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** 9 kHz - 26.5 GHz

**Voltage:** 50 volts

**Power Rating:** **20 W** maximum average rated power to 25°C ambient temperature. **100 W** peak power.

**Temperature Range:** -45°C to + 105°C

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant .

### Maximum VSWR:

| Frequency           | VSWR    |
|---------------------|---------|
|                     | WA6056H |
| 9 kHz - 10 kHz      | 1.45    |
| 10 kHz - 20 kHz     | 1.35    |
| 20 kHz - 18.0 GHz   | 1.35    |
| 18.0 GHz - 26.5 GHz | 1.7     |

### Maximum Insertion Loss:

| Frequency        | Insertion Loss (dB) |
|------------------|---------------------|
|                  | WA6056H             |
| 9 kHz - 26.5 GHz | 0.8                 |

### Dimensions:

Length: 19.37 (0.76)  
Weight: 4 (0.14)

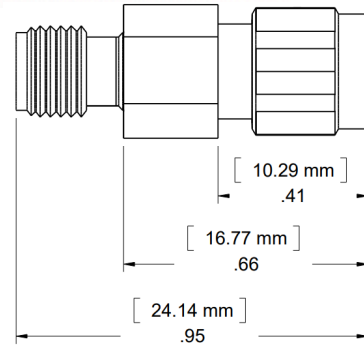
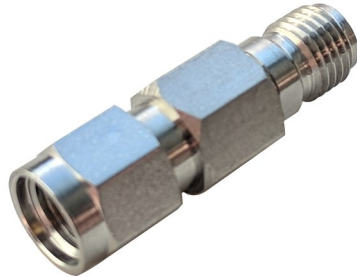
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# DC Block

# WA6057H

9 kHz – 30.0 GHz

50 VOLTS



## Features

3.5 mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

5/16 hex provides secure torquing surface for mating in hard to get places.

Inner DC block combined with high frequency response.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** 9 kHz - 30.0 GHz

**Voltage:** 50 volts

**Power Rating:** 20 W maximum average rated power to 25°C ambient temperature. 100 W peak power.

**Temperature Range:** -65°C to + 105°C

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant.

## Maximum VSWR:

| Frequency           | VSWR    |
|---------------------|---------|
|                     | WA6057H |
| 9 kHz - 10 kHz      | 1.45    |
| 10 kHz - 20 kHz     | 1.35    |
| 20 kHz - 18.0 GHz   | 1.35    |
| 18.0 GHz - 30.0 GHz | 1.7     |

## Maximum Insertion Loss:

| Frequency        | Insertion Loss (dB) |
|------------------|---------------------|
|                  | WA6057H             |
| 9 kHz - 30.0 GHz | 1.0                 |

## Dimensions:

Length: 24.2 (0.95)  
Weight: 0.004 (0.14)

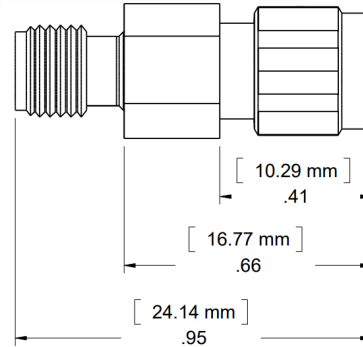
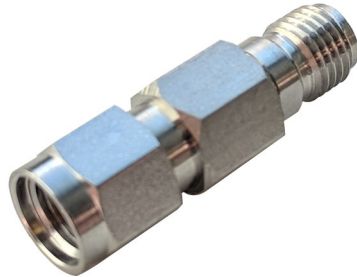
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# DC Block

# WA6058H

## 9 kHz – 40.0 GHz

## 50 VOLTS



### Features

Precision 2.92 mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

5/16 hex provides secure torquing surface for mating in hard to get places.

Inner DC block combined with high frequency response.

### Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** 9 kHz - 40.0 GHz

**Voltage:** 50 volts

**Power Rating:** 20 W maximum average rated power to 25°C ambient temperature. 100 W peak power.

**Temperature Range:** -65°C to + 105°C

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant.

### Maximum VSWR:

| Frequency           | VSWR    |
|---------------------|---------|
|                     | WA6058H |
| 9 kHz - 10 kHz      | 1.45    |
| 10 kHz - 20 kHz     | 1.4     |
| 20 kHz - 18.0 GHz   | 1.4     |
| 18.0 GHz - 40.0 GHz | 1.7     |

### Maximum Insertion Loss:

| Frequency        | Insertion Loss (dB) |
|------------------|---------------------|
|                  | WA6058H             |
| 9 kHz - 30.0 GHz | 1.0                 |

### Dimensions:

Length: 24.2 (0.95)  
Weight: 0.004 (0.14)

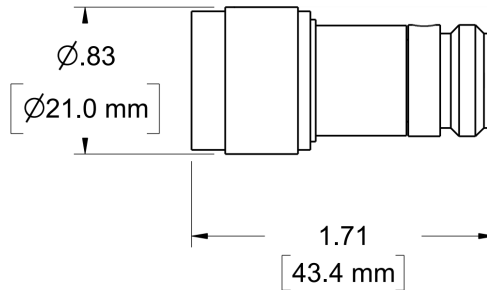
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# DC Block

# WA7046

**WA7046/6: 10 MHz – 6.0 GHz**  
**WA7046/12: 10 MHz – 12.4 GHz**  
**WA7046: 10 MHz – 18.0 GHz**

**100 VOLTS**



## Features

Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

Inner only– 6.0/12.4/18.0 GHz N-Type DC Block.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA7046: 10 MHz - 18.0 GHz.  
WA7046/6: 10 MHz - 6.0 GHz.  
WA7046/12: 10 MHz - 12.4 GHz.

**Voltage:** 100 volts

**Power Rating:** 5 W maximum average rated power to 25°C ambient temperature (Bidirectional).

**Temperature Range:** -65°C to +125°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |          |           |
|-----------------|--------|----------|-----------|
|                 | WA7046 | WA7046/6 | WA7046/12 |
| 0.01 - 1.0      | 1.2    | 1.2      | 1.2       |
| 1.0 - 4.0       | 1.3    | 1.3      | 1.3       |
| 4.0 - 8.0       | 1.4    | 1.4      | 1.4       |
| 8.0 - 18.0      | 1.5    | N/A      | 1.5       |

### Maximum Insertion Loss:

| Frequency (GHz) | Insertion Loss (dB) |          |           |
|-----------------|---------------------|----------|-----------|
|                 | WA7046              | WA7046/6 | WA7046/12 |
| 0.01 - 1.0      | 0.25                | 0.25     | 0.25      |
| 1.0 - 4.0       | 0.5                 | 0.5      | 0.5       |
| 4.0 - 8.0       | 0.8                 | 0.8      | 0.8       |
| 8.0 - 18.0      | 0.8                 | N/A      | 0.8       |

### Dimensions:

Length: 43.4 (1.71)  
Diameter: 21.0 (0.83)  
Weight: 70 (2.6)

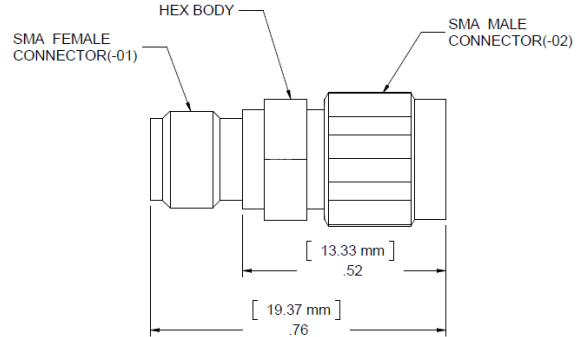
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# DC Block

# WA7055H

WA7055H/6: 10 MHz – 6.0 GHz  
 WA7055H/12: 10 MHz – 12.4 GHz  
 WA7055H: 10 MHz – 18.0 GHz

**100 VOLTS**



## Features

SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

Inner Only– 6.0/12.4/18.0 GHz SMA DC Block.

5/16 hex provides secure torquing surface.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA7055H: 10 MHz - 18.0 GHz.  
 WA7055H/6: 10 MHz - 6.0 GHz.  
 WA7055H/12: 10 MHz - 12.4 GHz.

**Voltage:** 100 volts

**Power Rating:** 2 W maximum average rated power to 25°C ambient temperature.

**Temperature Range:** -65°C to +125°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant.

### Maximum VSWR:

| Frequency (GHz) | VSWR    |           |            |
|-----------------|---------|-----------|------------|
|                 | WA7055H | WA7055H/6 | WA7055H/12 |
| 0.01 - 1.0      | 1.2     | 1.2       | 1.2        |
| 1.0 - 4.0       | 1.3     | 1.3       | 1.3        |
| 4.0 - 8.0       | 1.4     | 1.4       | 1.4        |
| 8.0- 18.0       | 1.5     | N/A       | 1.5        |

### Maximum Insertion Loss:

| Frequency (GHz) | Insertion Loss (dB) |           |            |
|-----------------|---------------------|-----------|------------|
|                 | WA7055H             | WA7055H/6 | WA7055H/12 |
| 0.01 - 1.0      | 0.25                | 0.25      | 0.25       |
| 1.0 - 4.0       | 0.5                 | 0.5       | 0.5        |
| 4.0 - 8.0       | 0.8                 | 0.8       | 0.8        |
| 8.0- 18.0       | 0.8                 | N/A       | 0.8        |

### Dimensions:

Length: 19.37 (0.76)  
 Weight: 4 (0.14)

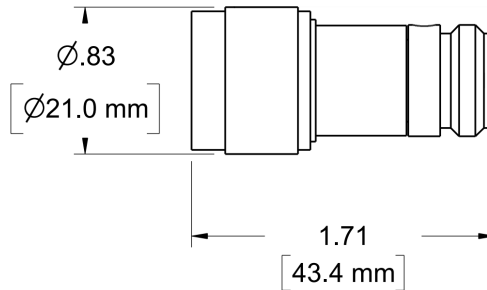
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# DC Block

# WA8046

WA8046/6: 10 MHz – 6.0 GHz  
WA8046/12: 10 MHz – 12.4 GHz  
WA8046: 10 MHz – 18.0 GHz

200 VOLTS



## Features

Type N stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

Inner only– 6.0/12.4/18.0 GHz N-Type DC Block.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA8046: 10 MHz - 18.0 GHz.  
WA8046/6: 10 MHz - 6.0 GHz.  
WA8046/12: 10 MHz - 12.4 GHz.

**Voltage:** 200 volts

**Power Rating:** 5 W maximum average rated power to 25°C ambient temperature (Bidirectional).

**Temperature Range:** -65°C to +125°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant.

### Maximum VSWR:

| Frequency (GHz) | VSWR   |          |           |
|-----------------|--------|----------|-----------|
|                 | WA8046 | WA8046/6 | WA8046/12 |
| 0.01 - 1.0      | 1.2    | 1.2      | 1.2       |
| 1.0 - 4.0       | 1.3    | 1.3      | 1.3       |
| 4.0 - 8.0       | 1.4    | 1.4      | 1.4       |
| 8.0 - 18.0      | 1.5    | N/A      | 1.5       |

### Maximum Insertion Loss:

| Frequency (GHz) | Insertion Loss (dB) |          |           |
|-----------------|---------------------|----------|-----------|
|                 | WA8046              | WA8046/6 | WA8046/12 |
| 0.01 - 1.0      | 0.25                | 0.25     | 0.25      |
| 1.0 - 4.0       | 0.5                 | 0.5      | 0.5       |
| 4.0 - 8.0       | 0.8                 | 0.8      | 0.8       |
| 8.0 - 18.0      | 0.8                 | N/A      | 0.8       |

### Dimensions:

Length: 43.4 (1.71)  
Diameter: 21.0 (0.83)  
Weight: 70 (2.6)

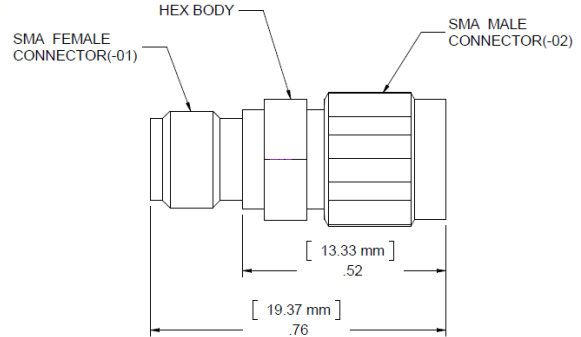
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# DC Block

# WA8055H

WA8055H/6: 10 MHz – 6.0 GHz  
 WA8055H/12: 10 MHz – 12.4 GHz  
 WA8055H: 10 MHz – 18.0 GHz

**200 VOLTS**



## Features

SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

Inner Only– 6.0/12.4/18.0 GHz SMA DC Block. 5/16 hex provides secure torquing surface for mating in hard to get places.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** WA8055H: 10 MHz - 18.0 GHz.  
 WA8055H/6: 10 MHz - 6.0 GHz.  
 WA8055H/12: 10 MHz - 12.4 GHz.

**Voltage:** 200 volts

**Power Rating:** 2 W maximum average rated power to 25°C ambient temperature (Up to 10 W).

**Temperature Range:** -65°C to +125°C.

**Construction:** Passivated stainless steel body and connectors. Gold plated beryllium copper contacts. RoHS Compliant

### Maximum VSWR:

| Frequency (GHz) | VSWR    |           |            |
|-----------------|---------|-----------|------------|
|                 | WA8055H | WA8055H/6 | WA8055H/12 |
| 0.01 - 1.0      | 1.2     | 1.2       | 1.2        |
| 1.0 - 4.0       | 1.3     | 1.3       | 1.3        |
| 4.0 - 8.0       | 1.4     | 1.4       | 1.4        |
| 8.0- 18.0       | 1.5     | N/A       | 1.5        |

### Maximum Insertion Loss:

| Frequency (GHz) | Insertion Loss (dB) |           |            |
|-----------------|---------------------|-----------|------------|
|                 | WA8055H             | WA8055H/6 | WA8055H/12 |
| 0.01 - 1.0      | 0.25                | 0.25      | 0.25       |
| 1.0 - 4.0       | 0.5                 | 0.5       | 0.5        |
| 4.0 - 8.0       | 0.8                 | 0.8       | 0.8        |
| 8.0- 18.0       | 0.8                 | N/A       | 0.8        |

### Dimensions:

Length: 19.37 (0.76)  
 Weight: 4 (0.14)

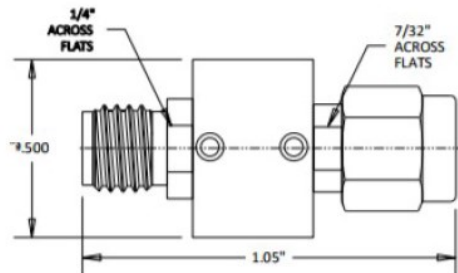
*Note: Dimensions are given in mm (in), or g (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# DC Block

# WA8038

10 MHz – 18.0 GHz

200 VOLTS



## Features

SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

Outer DC Block combined with high frequency response. Bi-directional.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** 10 MHz - 18.0 GHz.

**Voltage:** 200 volts

**Temperature Range:** -55°C to +105°C.

**Construction:** Passivated stainless steel connectors, PEEK body. Gold plated beryllium copper contacts. RoHS Compliant.

**Maximum VSWR:** 1.35

**Maximum Insertion Loss:** 0.5 dB

### Dimensions:

Length: 38.1 (1.05)  
Diameter: 12.7 (0.5)  
Weight: 0.004 (0.14)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

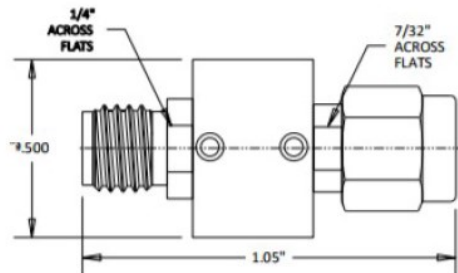


# DC Block

# WA8039

10 MHz – 18.0 GHz

200 VOLTS



## Features

SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Designed to meet MIL-DTL-3933 environmental specification.

Inner/Outer DC Block combined with high frequency response. Bi-directional.

## Specifications

**Nominal Impedance:** 50 ohms.

**Frequency Range:** 10 MHz - 18.0 GHz.

**Voltage:** 200 volts

**Temperature Range:** -55°C to +105°C.

**Construction:** Passivated stainless steel connectors, PEEK body. Gold plated beryllium copper contacts. RoHS Compliant.

**Maximum VSWR:** 1.35

**Maximum Insertion Loss:** 0.5 dB

### Dimensions:

Length: 38.1 (1.05)  
Diameter: 12.7 (0.5)  
Weight: 0.004 (0.14)

*Note: Dimensions are given in mm (in), or kg (oz). Weight figure is nominal, with our standard connector configuration. Additional connector options may be available.*

# High-Reliability and Environment Qualified Components

## *Introduction*

Ruggedness and reliability have been designed in across our product lines and proven in the field. This section of our catalog provides a brief overview of our capabilities and a sample of our products that have undergone formal qualification testing.

## *Designed In*

All of our connector interfaces have been designed for compliance to MIL-PRF-39012 and MIL-STD-348A standards. The materials and construction techniques employed are targeted towards compliance with MIL-DTL-3933 (Fixed Attenuators), MIL-DTL-24215 (Variable Attenuators), or MIL-DTL-39030 (Terminations) standards as applicable.

## *Proven Out*

Our products have undergone qualification and screening tests for a variety of environments including:

- Naval Shipboard
- Aircraft, Fixed Wing and Rotary Wing
- Satellite and low out-gassing environments

Standard testing is performed using MIL-STD-202 and MIL-STD-810 methodologies as applicable either at our facility in Mt Airy, Maryland, or at a certified environmental test lab.

| Sample of High-Reliability/Qualified Products |              |                       |            |          |
|---|--------------|-----------------------|------------|----------|
| Model Number                                  | Product Type | Frequency Range (GHz) | Connectors | Page No. |
| WA32  | Attenuator   | DC-18                 | SMA        | 213      |

# ORDERING INFORMATION

**HOW TO ORDER:** Please order by both catalogue number and description of the component to avoid confusion. Special features and configurations not listed in this catalogue may be available. Please contact the factory regarding any non-standard features.

**WHERE TO ORDER:** Address all purchase orders and other communication to:

**Weinschel Associates**

2505 Back Acre Circle, Mt Airy, MD 21771

Phone: 877.948.8342/301.963.4630

Fax: 301.963.8640

e-mail: [sales@weinschelassociates.com](mailto:sales@weinschelassociates.com)

**DOMESTIC TERMS:** Formal price quotations remain in effect for 60 days unless otherwise stated. Standard payment terms for approved customers are Net 30 days. Where credit has not been established, payment must be arranged prior to shipment or COD. All pricing is FOB Gaithersburg, Maryland unless otherwise stated and includes commercial inspection and packaging for shipment. **All major credit cards are accepted.**

**EXPORT TERMS:** Payment terms are cash in advance or irrevocable Letter of Credit payable through a bank to be specified by Weinschel Associates. All prices are in US Dollars, FOB Gaithersburg, Maryland. All bank charges are to be paid by the customer.

**SOURCE INSPECTION:** When source inspection is required, an additional charge of either \$100 or two (2%) of the purchase order value will be levied, whichever is greater.

**CERTIFICATES OF COMPLIANCE:** A Certificate of Compliance is shipped with every order along with the packing slip. Extra copies are available upon request at any time.

**TEST DATA:** Comprehensive test data is available for an extra charge. Weinschel Associates tests 100% of its shipped product against published specifications. Data is retained when required by the customer.

**TECHNICAL CONSULTATION:** Our engineering department is available for informal and formal consultation on technical, calibration, and service issues. Call or e-mail the factory.

**WARRANTY REPAIRS:** In the event of a problem with an item, please contact the factory. If a return is necessary, a Return Material Authorization (RMA) number will be provided by which the returned item will be identified and repaired or replaced. Please provide complete details of the complaint along with contact and shipping information for the items return.

**NON-WARRANTY REPAIRS:** If return of an item is desired for non-warranty repair and/or calibration, please contact the factory. A Return Material Authorization (RMA) number will be provided by which the returned item will be identified. Upon receipt, an evaluation of the item will be performed and the price to repair or recalibrate will be provided for approval (unless pre-approved). Weinschel Associates furnishes full warranty on all repairs for 90 days following shipment.

**SHIPPING INSTRUCTIONS:** Weinschel Associates will use best judgment and best method shipping for your items. Special instructions will be followed.

**SPECIFICATION CHANGES:** Changes to specifications may occur at any time without notification and without any obligation to Weinschel Associates to revise previously sold items. We reserve the right to discontinue any item without notice.

**CANCELLATIONS AND RETURNS:** Order cancellation must be authorized by Weinschel Associates and the customer may incur a cancellation charge. All returns are subject to a restocking charge dependent upon elapsed time.

**MAJOR CREDIT CARDS ACCEPTED**

