FIXED COAXIAL ATTENUATORS

DC – 40.0 GHz **2 – 1000 WATTS**

Low Power Fixed Attenuators: 2 Watts to 25 Watts						
Model Number	**Frequency Range DC - (GHz)**	**Average Power (W)**	**Peak Power (kW)**	**Standard* Attenuation Values (dB)**	**Connectors and Mounting Notes**	**Page No.**
WA50	3	2	0.5	1 to 50	N	47
WA1W/6	6	2	0.5	1 to 60	N	5
WA18	12.4	2	0.5	1 to 30	BNC	14
WA1W	12.4	2	0.5	1 to 60	N	5
WA3	12.4	2	0.5	1 to 60	SMA	10
WA3C	12.4	2	0.25	0 to 30	SMA	6
WA3H	12.4	2	0.25	1 to 60	SMA	7
WA3M	12.4	2	0.5	1 to 60	SMA	8
WA3T	12.4	2	0.5	1 to 60	SMA	9
WA12	18	2	0.25	1 to 12	SMA, Flange Mount	14
WA2W	18	2	0.5	1 to 60	N	5
WA32	18	2	0.5	3 to 60	SMA	167
WA4	18	2	0.5	1 to 60	SMA	10
WA4C	18	2	0.25	0 to 30	SMA	6
WA4H	18	2	0.25	1 to 60	SMA	7
WA4M	18	2	0.5	1 to 60	SMA	8
WA4T	18	2	0.5	1 to 60	SMA	9
WA9	26.5	2	0.25	1 to 60	SMA	13
WA54	40	2	0.25	3 to 30	2.92 mm	50
WA18/6	6	2	1	1 to 30	BNC	16
WA1	12.4	5	1	1 to 60	N	4
WA19/6	6	5	1	1 to 30	BNC	17
WA17	18	5	1	1 to 60	7 mm	15
WA2	18	5	1	1 to 60	N	4
WA44	18	5	1	1 to 60	N	41
WA7	18	5	1	1 to 60	SMA	11
WA75	40	5	0.25	3 to 30	2.92 mm	64
WA200271	3	10	1.8	3 to 30	SMA, Low-Profile	70
WA37	8.5	10	1	1 to 60	N	34
WA41	18	10	1	1 to 60	SMA	38
WA41T	18	10	1	1 to 60	TNC	39
WA8	18	10	1	1 to 60	N	12
WA76	40	10	0.20	6, 10, 20, 30	2.92 mm	65

* Other attenuation values and connector configurations are available

Custom solutions at "off-the-shelf" prices

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FIXED COAXIAL ATTENUATORS

DC – 40.0 GHz **2—1000 WATTS**

Low Power Fixed Attenuators: 2 Watts to 25 Watts—Continued						
Model Number	**Frequency Range DC - (GHz)**	**Average Power (W)**	**Peak Power (kW)**	**Standard* Attenuation Values (dB)**	**Connectors and Mounting Notes**	**Page No.**
WA34L	4	20	5	3 to 40	N, SMA, 7/16 DIN	31
WA33L	8.5	20	5	3 to 40	N, SMA, 7/16 DIN	27
WA89	40	20	0.20	10, 20, 30	2.92 mm	66
WA21	4	25	5	3 to 40	N, SMA, Low-Profile, Mountable	18
WA34	4	25	5	3 to 40	N, SMA, 7/16 DIN	29
WA34B	4	25	5	3 to 40	N, SMA, Square Body Mount	30
WA22	8.5	25	5	3 to 40	N, SMA, Low-Profile, Mountable	18
WA33	8.5	25	5	3 to 40	N, SMA, 7/16 DIN	28
WA33B	8.5	25	5	3 to 40	N, SMA, Square Body Mount	26
WA46	18	25	1	3 to 40	N, SMA, TNC	43
WA74	26.5	25	0.50	3 to 30	3.5 mm	63

Medium Power Fixed Attenuators: 50 Watts to 150 Watts						
Model Number	**Frequency Range DC - (GHz)**	**Average Power (W)**	**Peak Power (kW)**	**Standard* Attenuation Values (dB)**	**Connectors and Mounting Notes**	**Page No.**
WA23	4	50	5	3 to 40	N, SMA	19
WA23B	4	50	5	3 to 40	N, SMA, Square Body Mount	20
WA71	4	50	5	3 to 40	N, SMA, Low-Profile, Mountable	61
WA24	8.5	50	5	3 to 40	N, SMA	21
WA24B	8.5	50	5	3 to 40	N, SMA, Square Body Mount	22
WA72	8.5	50	5	3 to 40	N, SMA, Low-Profile, Mountable	62
WA47	18	50	1	6 to 40	N, SMA, TNC	44
WA90	18	50	1	3 to 40	N, SMA, TNC	67
WA29	8.5	75	5	3 to 40	N, SMA, 7/16 DIN	23

* Other attenuation values and connector configurations are available

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FIXED COAXIAL ATTENUATORS

DC – 40.0 GHz **2—1000 WATTS**

Medium Power Fixed Attenuators: 50 Watts to 150 Watts—Continued						
Model Number	Frequency Range DC - (GHz)	Average Power (W)	Peak Power (kW)	Standard* Attenuation Values (dB)	Connectors and Mounting Notes	Page No.
WA59	2.5	100	10	10 to 40	N, SMA, Low-Profile, Mountable	53
WA30	4	100	5	3 to 40	N, SMA, 7/16 DIN	24
WA68	6	100	5	3 to 40	N, SMA, 7/16 DIN	59
WA31	8.5	100	5	3 to 40	N, SMA, 7/16 DIN	25
WA48	18	100	1	10 to 40	N, SMA, TNC	45
WA91	18	100	1	10 to 40	N, SMA, TNC	68
WA40	2.5	150	5	3 to 40	N, SMA, 7/16 DIN	37
WA42	2.5	150	5	3 to 40	N, SMA, Low-Profile, Mountable	40
WA65	2.5	150	10	3 to 30	N, SMA, 7/16 DIN	56
WA39	4	150	5	3 to 40	N, SMA, 7/16 DIN	36
WA61	4	150	5	3 to 40	N, SMA	55
WA57	5	150	10	3 to 40	N, SMA, 7/16 DIN	51
WA49	8.5	150	5	3 to 40	N, SMA, 7/16 DIN	46
WA62	8.5	150	5	3 to 40	N, SMA	55
WA66	18	150	1	20 to 40	N	57

High Power Fixed Attenuators: 200 Watts to 1000 Watts						
Model Number	Frequency Range DC - (GHz)	Average Power (W)	Peak Power (kW)	Standard* Attenuation Values (dB)	Connectors and Mounting Notes	Page No.
WA95	18	200	1	10, 20, 30, 40	N	69
WA45	2.5	250	10	3 to 40	N, SMA, 7/16 DIN	42
WA58	5	250	10	3 to 40	N, SMA, 7/16 DIN	52
WA35	8.5	250	5	10 to 40	N, SMA, 7/16 DIN	32
WA38	5	300	5	3 to 40	N, SMA, 7/16 DIN	35
WA36	8.5	300	5	10 to 40	N, SMA, 7/16 DIN	33
WA67	12.4	350	1	20 to 40	N	58
WA53	2.5	500	10	3 to 40	N, SMA, 7/16 DIN	49
WA60	5	500	10	10 to 40	N, SMA, 7/16 DIN	54
WA51	8.5	500	5	10 to 40	N, SMA, 7/16 DIN	48
WA70	3	1000	10	10 to 40	N, 7/16 DIN	60

* Other attenuation values and connector configurations are available

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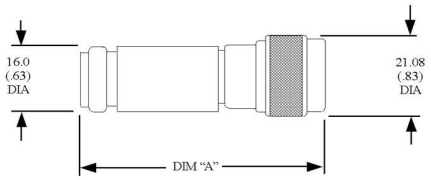
Fixed Coaxial Attenuator MODEL WA1 & WA2

DC – 12.4 GHz
DC – 18.0 GHz

5 WATTS

Model WA1

Model WA2



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: DC - 12.4 GHz.
WA2: DC - 18.0 GHz.

Nominal dB Values: 1 - 60 dB.

Power Sensitivity: < 0.005 dB/dB/W Bidirectional in power.

Power Rating: 5 watts average. Maximum rated average power to 25°C ambient temperature, de-rated linearly. 1 kilowatt 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.

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.

Maximum VSWR:

Frequency (GHz)	VSWR	
	WA1	WA2
DC - 4.0	1.15	1.15
4.0 - 8.0	1.20	1.20
8.0 - 12.4	1.25	1.25
12.4 - 18.0	N/A	1.35

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	WA1	WA2
1, 2	0.4	0.5
3-9	0.3	0.3
10, 20	0.5	0.5
30, 40	0.75	1.0
50	0.75	1.25
60	1.0	1.50

Weight (Both Models):

1-30 dB .07 kg/ 2.6 oz.
31-60 dB .10 kg/ 3.6 oz.

Physical Dimensions:

Attenuation (dB)	Dim "A"
1 – 30	57.15 (2.25)
31 – 60	67.31 (2.70)

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

Fixed Coaxial Attenuator MODEL WA1W & WA2W

DC – 6.0 GHz
DC – 12.4 GHz
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 - 6.0 GHz.
WA1W/12: DC - 12.4 GHz.
WA2W: DC -18.0 GHz.

Nominal dB Values: 1 - 60 dB.

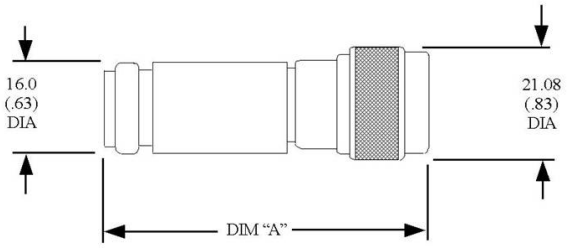
Power Sensitivity: < 0.005 dB/dB/W Bidirectional in power.

Power Rating: 2 watts average. Maximum rated average power to 25°C ambient temperature, de-rated linearly to 0.5 watts @ 105 C. 250 watts peak (5 µsec pulse width; 0.4% duty cycle).

Temperature Range: -55°C to +125°C.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB		
	WA1W/6	WA1W/12	WA2W/18
1, 2	0.4	0.4	0.5
3-9	0.3	0.3	0.3
10, 20	0.5	0.5	0.5
30, 40	0.75	0.75	1.00
50	0.75	0.75	1.25
60	1.0	1.0	1.50



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

Construction: Passivated stainless steel body and connectors. Gold plated beryllium copper female contact, passivated stainless steel male contact..

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

Maximum VSWR:

Frequency (GHz)	VSWR		
	WA1W/6	WA1W/12	WA2W/18
DC - 4.0	1.15	1.15	1.15
4.0 - 8.0	1.20	1.20	1.20
8.0 -12.4	N/A	1.25	1.25
12.4-18.0	N/A	N/A	1.40

Weight (All Models):

1-30 dB	.07 kg/ 2.6 oz.
31-60 dB	.10 kg/ 3.6 oz.

Physical Dimensions:

Attenuation (dB)	Dim "A"
1 – 30	50.8 (2.00)
31-60	64.77 (2.55)

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

Fixed Coaxial Attenuator MODEL WA3C & WA4C

DC – 12.4 GHz
DC – 18.0 GHz **2 WATTS**

Features

Type 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: WA3C: DC - 12.4 GHz.
WA4C: DC - 18.0 GHz.

Nominal dB Values: 0 - 30 dB.

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

Power Rating: 2 watts average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at +125° C, 250 watts peak.

Temperature Range: -65°C to +125°C.

Standard Nominal Values and Deviations:

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

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

Construction: Passivated stainless steel body and connectors. Gold plated beryllium copper female contacts Stainless steel male contacts.

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

Maximum VSWR:

Frequency (GHz)	VSWR	
	WA3H	WA4H
DC - 4.0	1.15	1.15
4.0 - 8.0	1.20	1.20
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.

Physical Dimensions:

Length:

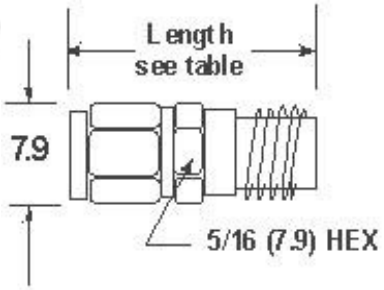
Attenuation (dB)	Length
1 – 12	19.3 (0.76)
13 – 30	22.6 (0.89)

Diameter: 7.1 (0.28).

Note: Dimensions are given in mm (inches) and are ± 0.8 (0.03), unless otherwise specified.

Fixed Coaxial Attenuator MODEL WA3H & WA4H

DC – 12.4 GHz
DC – 18.0 GHz **2 WATTS**



Features

Type 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: WA3H: DC - 12.4 GHz.
WA4H: DC - 18.0 GHz.

Nominal dB Values: 1 - 60 dB.

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

Power Rating: 2 watts average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at +125° C, 500 watts peak.

Temperature Range: -55°C to +125°C.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	WA3H	WA4H
3 - 6	0.3	0.3
1,2,7 - 12	0.3	0.5
20	0.5	0.7
30, 40	0.75	1.0
50, 60	1.00	1.50

Temperature Coefficient: < 0.0004 dB/dB/°C

Construction: Passivated stainless steel body and connectors. Gold plated beryllium copper female contacts Stainless steel male contacts.

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

Maximum VSWR:

Frequency (GHz)	VSWR	
	WA3H	WA4H
DC - 4.0	1.15	1.15
4.0 - 8.0	1.20	1.20
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.
13-25 dB	4.3 gm/ 0.15 oz.
26-30 dB	4.9 gm/ 0.17 oz.
31-60 dB	6.5 gm/ 0.23 oz.

Physical Dimensions:

Attenuation (dB)	Length
1 – 12	22.35 (0.88)
13 – 25	24.38 (0.96)
26 – 30	26.92 (1.06)
31 – 60	34.54 (1.36)

Note: Dimensions are given in mm (inches) and are ± 0.8 (0.03), unless otherwise specified.

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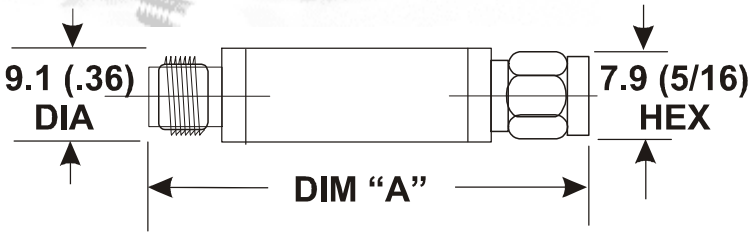
Fixed Coaxial Attenuator MODEL WA3M & WA4M

DC – 12.4 GHz
DC – 18.0 GHz **2 Watts**



Features

Type 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.

Usable to 22 GHz.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: WA3M: DC - 12.4 GHz.
WA4M: DC - 18.0 GHz.

Nominal dB Values: 1 - 60 dB.

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

Power Rating: 2 watts average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at +125° C, 500 watts peak.

Temperature Range: -55°C to +125° C.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	WA3M	WA4M
1 - 2	0.3	0.5
3 - 6	0.3	0.3
7 - 10	0.3	0.5
20	0.5	0.7
30, 40	0.75	1.0
50, 60	1.00	2.00

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

Construction: Passivated stainless steel body and connectors. Gold plated beryllium copper (female) contacts.

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

Maximum VSWR:

Frequency (GHz)	VSWR	
	WA3M	WA4M
DC - 4.0	1.15	1.15
4.0 - 8.0	1.20	1.20
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.
13-20 dB	4.3 gm/ 0.15 oz.
21-30 dB	4.9 gm/ 0.17 oz.
31-60 dB	6.5 gm/ 0.23 oz.

Physical Dimensions:

Attenuation (dB)	Dim "A"
1 – 12	31.24 (1.23)
13 – 20	33.27 (1.31)
21 – 30	35.31 (1.41)
31 – 60	43.43 (1.71)

Note: Dimensions are given in mm (inches). Dimensions are maximum unless otherwise specified.

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Fixed Coaxial Attenuator MODEL WA3T & WA4T

DC – 12.4 GHz
DC – 18.0 GHz **2 WATTS**

Features

Type 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: WA3T: DC - 12.4 GHz.
WA4T: DC - 18.0 GHz.

Nominal dB Values: 1 - 60 dB.

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

Power Rating: 2 watts average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at +125° C, 500 watts peak.

Temperature Range: -55°C to +125° C.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	WA3T	WA4T
3 - 6	0.3	0.3
1,2,7 - 12	0.3	0.5
20	0.5	0.7
30, 40	0.75	1.0
50, 60	1.00	1.50

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

Construction: Passivated stainless steel body and connectors. Gold plated beryllium copper female contacts Stainless steel male contacts.

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

Maximum VSWR:

Frequency (GHz)	VSWR	
	WA3T	WA4T
DC - 4.0	1.15	1.15
4.0 - 8.0	1.20	1.20
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.
13-25 dB	4.3 gm/ 0.15 oz.
26-30 dB	4.9 gm/ 0.17 oz.
31-60 dB	6.5 gm/ 0.23 oz.

Physical Dimensions:

Attenuation (dB)	Length
1 – 12	22.35 (0.88)
13 – 25	24.38 (0.96)
26 – 30	26.92 (1.06)
31 – 60	34.54 (1.36)

Note: Dimensions are given in mm (inches) and are ± 0.8 (0.03), unless otherwise specified.

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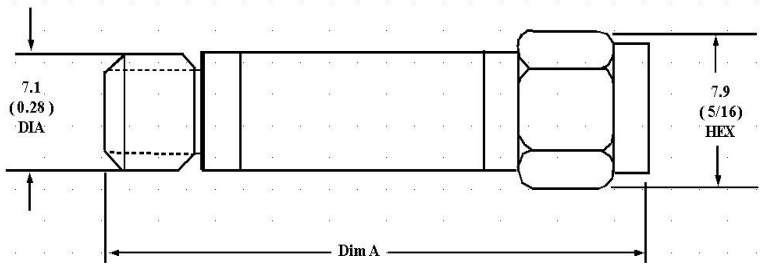
Fixed Coaxial Attenuator MODEL WA3 & WA4

DC – 12.4 GHz
DC – 18.0 GHz **2 WATTS**



Features

Type 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: WA3: DC - 12.4 GHz.
WA4: DC - 18.0 GHz.

Nominal dB Values: 1 - 60 dB.

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

Power Rating: 2 watts average to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75° C and 0.5W at +125° C, 500 watts peak.

Temperature Range: -55°C to +125° C.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	WA3	WA4
1 - 6	0.3	0.3
7 - 12	0.3	0.5
20	0.5	0.7
30, 40	0.75	1.0
50, 60	1.00	1.50

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

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

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

Maximum VSWR:

Frequency (GHz)	VSWR	
	WA3	WA4
DC - 4.0	1.15	1.15
4.0 - 8.0	1.20	1.20
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.
13-20 dB	4.3 gm/ 0.15 oz.
21-30 dB	4.9 gm/ 0.17 oz.
31-60 dB	6.5 gm/ 0.23 oz.

Physical Dimensions:

Attenuation (dB)	Dim "A"
1 – 12	31.24 (1.23)
13 – 20	33.27 (1.31)
21 – 30	35.31 (1.41)
31 – 60	43.43 (1.71)

Note: Dimensions are given in mm (inches). Dimensions are maximum unless otherwise specified.

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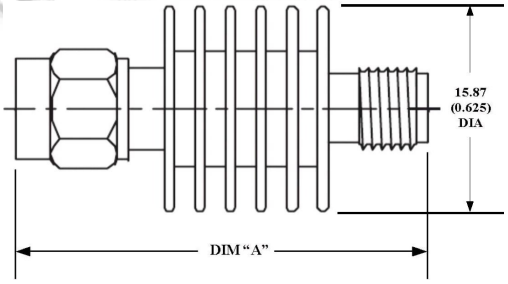
Fixed Coaxial Attenuator MODEL WA7

DC – 18.0 GHz 5 WATTS



Features

Stainless steel M/F, M/M, F/F SMA connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. Compact design for one of the lowest size/power ratios available. 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.

Nominal dB Values: 1- 60 dB.

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

Power Rating: 5 watts average. Maximum rated average power to 25°C ambient temperature, de-rated linearly to 0.5 watts at 125°C. 1 kilowatt peak (5 µsec pulse width; 0.05% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation(dB)	Accuracy ± dB
1,2,10,20	0.5
3 - 9	0.3
30, 40	1.0
50	1.25
60	1.5

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

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 4.0	1.15
4.0 – 8.0	1.20
8.0 – 12.4	1.25
12.4 – 18.0	1.40

Weight:

1 – 30 dB 11 g (0.36 oz).
31 – 60 dB 18 g (0.41 oz).

Physical Dimensions:

Attenuation (dB)	Dim A
1 - 30	30.5 ± 1.3 (1.20 ± .05)
31 - 60	38.1 ± 1.3 (1.50 ± .05)

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

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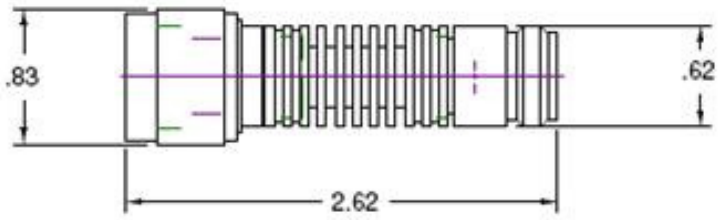
Fixed Coaxial Attenuator MODEL WA8

DC – 18.0 GHz 10 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. Unit may be mounted in any position.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC -18.0 GHz.

Nominal dB Values: 1 - 60 dB.

Power Sensitivity: < 0.005 dB/dB/W: Bidirectional in power.

Power Rating: 10 watts average, 1 KW peak. Full power from -55°C to +25°C: De-rated linearly to 0 W at +125° C.

Temperature Range: -55°C to +125°C.

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

Construction: Black aluminum alloy body with passivated stainless steel connectors.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
1,2,10	0.5
3,6	0.3
20	0.5
30	1.0
50	1.25
60	1.50

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 8.0	1.20
8.0 – 12.4	1.30
12.4 – 18.0	1.35

Length:
67.30 (2.62).

Weight:
.074 kg/ 2.6 oz.

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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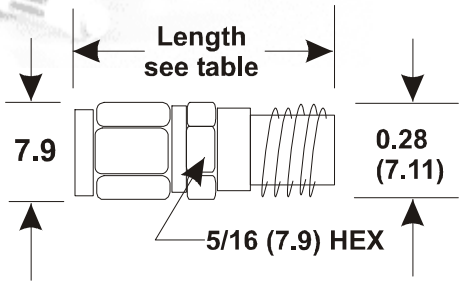
Fixed Coaxial Attenuator MODEL WA9

DC – 26.5 GHz 2 WATTS



Features

Type 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. **Usable to 30 GHz.**

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 26.5 GHz.

Nominal dB Values: 1 - 60 dB.

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

Power Rating: 2 watts average, 500 watts peak to 25°C ambient temperature, de-rated linearly to 1.25 watts at 75°C and 0.5W at +125° C.

Temperature Range: -55°C to +125° C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
3	0.50
6	0.60
10	0.80
20, 30	1.00
40, 50, 60	2.00

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

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.15
4.0 - 8.0	1.20
8.0 - 12.4	1.25
12.4 - 18.0	1.35
18.0 - 26.5	1.50

Weight:

1-12 dB	3.9 gm/ 0.14 oz.
13-25 dB	4.3 gm/ 0.15 oz.
26-30 dB	4.9 gm/ 0.17 oz.
31-60 dB	6.5 gm/ 0.23 oz.

Physical Dimensions:

Attenuation (dB)	Length
1 – 12	22.35 (0.88)
13 – 25	24.38 (0.96)
26 – 30	26.92 (1.06)
31 – 60	34.54 (1.36)

Calibrated Attenuator Set (WAS-19): Model WA9 is also available in Calibrated Attenuator Set which includes four different attenuators (3, 6, 10, 20 dB). Refer to Attenuator Sets data sheet for specifications.

Note: Dimensions are given in mm (inches) and are ± 0.8 (0.03), unless otherwise specified.

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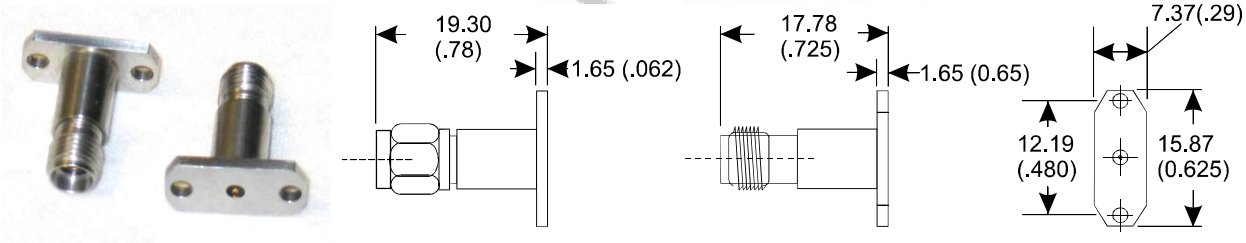
Fixed Coaxial Attenuator Flange Mount

MODEL WA12

DC – 18.0 GHz

2 WATTS



Features

2 hole flange mount.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC – 18.0 GHz.

Nominal dB Values: 0 – 12 dB.

Input Power: 2 watts average, 250watts peak to 25°C ambient temperature, de-rated linearly to 0.5 watts at + 125°C, (5µsec pulse width 0.5% duty cycle).

Temperature Coefficient: < 0.0004 dB/dB/°C

Temperature Range: -55°C to + 125°C.

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.15
4.0 - 12.4	1.25
12.4 - 18.0	1.50

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
0 - 9	0.3
10 - 12	0.5

Connectors: SMA passivated stainless steel connectors per MIL-STD-348. Interface dimension mate nondestructively with MIL-PRF-39012 connectors.

Construction: Stainless steel body with stainless steel connectors with gold plated beryllium copper female contact and stainless steel male contact.

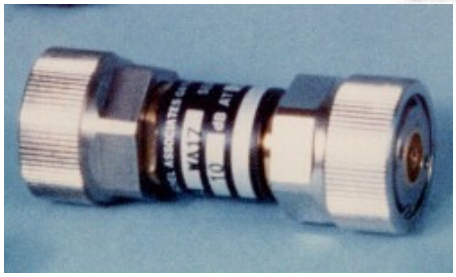
Calibration: Insertion Loss and VSWR performed across frequency range. Calibration test data available at additional cost.

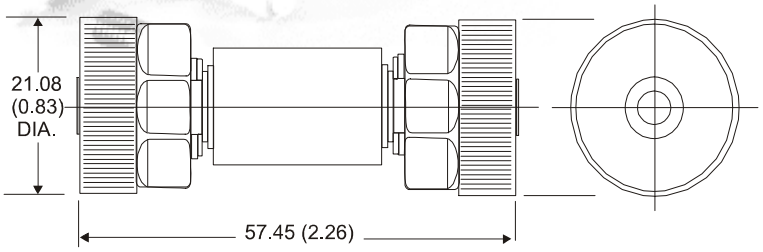
Weight: 1 oz.

Note: Dimensions are given in mm (inched). Dimensions are maximum unless otherwise specified.

Fixed Coaxial Attenuator MODEL WA17

DC – 18.0 GHz 5 WATTS





Features

Precision 7mm, 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 Sensitivity: < 0.005 dB/dB/W; Bidirectional in power.

Power Rating: 5 watts average. Maximum rated average power to 25°C ambient temperature, derated linearly to 0.5 watts at 125°C. 1 kilowatt peak (5 µsec pulse width; 0.05% duty cycle).

Temperature Range: -55°C to +125°C.

Temperature Coefficient: < 0.0004 dB/dB/°C

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
1 – 9	0.30
10 – 20	0.50
30, 40, 50	0.75
60	1.00

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 4.0	1.10
4.0 – 12.4	1.15
12.4 – 18.0	1.20

Weight:

1 – 30 dB 0.07 kg / 2.5 oz.
31 – 60 dB 0.10 kg / 6 oz.

Physical Dimensions:

Length:

Attenuation (dB)	Length
1 – 30	50.8 (2.0)
31 – 60	57.5 (2.3)

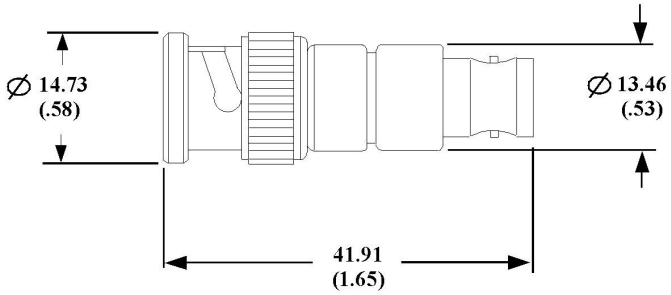
Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

Fixed Coaxial Attenuator BNC Connectors

MODEL WA18/6

DC – 6.0 GHz

2 WATTS



Features

Available attenuation values from 1 – 30dB. BNC Connectors mate nondestructively with MIL-PRF-39012 connectors. Optimized for broadband wireless applications.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 6.0 GHz.

Nominal dB Values: 1-30 dB.

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

Power Rating: 2 watts average, 1kilowatt peak. Maximum rated average power to 25°C ambient temperature, de-rated linearly to 0 watts at 125°C.

Temperature Range: -55°C to +125°C.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	WA18/6
1 - 6	0.4
7 - 30	0.9

Temperature Coefficient: < 0.0004 dB/dB/°C

Construction: Passivated stainless steel body with Nickel plated brass connectors. Gold plated beryllium copper female contact, stainless steel male contact.

Calibration: Insertion Loss and VSWR performed across frequency range.

Maximum VSWR:

Frequency (GHz)	VSWR
	WA18/6
DC - 4.0	1.25
4.0 - 6.0	1.30

Weight (Both Models):
1-30 dB .10 kg/ 3.6 oz

Physical Dimensions:

Attenuation (dB)	Length
1 – 30	41.91(1.65)

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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Fixed Coaxial Attenuator
BNC Connectors

Model WA19/6

DC – 6.0 GHz

5 WATTS

Features

Available attenuation values from 1 - 30dB. BNC connectors mate nondestructively with MIL-PRF-39012 connectors. Optimized for broadband wireless applications.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 6.0 GHz

Nominal dB values: 1 - 30 dB.

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

Power Rating: 5 watts average, 1 kilowatt peak. Maximum rated average power to 25° C ambient temperature de-rated linearly to 0 watts at 125° C.

Temperature Range: -55° C to +125° C.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	WA19/6
1 – 6	0.4
7– 30	0.9

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

Construction: Passivated stainless steel body with Nickel plated brass connectors. Gold plated beryllium female contact, stainless steel male contact.

Calibration: Insertion Loss and VSWR performed across frequency range.

Maximum VSWR:

Frequency (GHz)	VSWR
	WA19/6
DC - 4.0	1.25
4.0 - 6.0	1.30

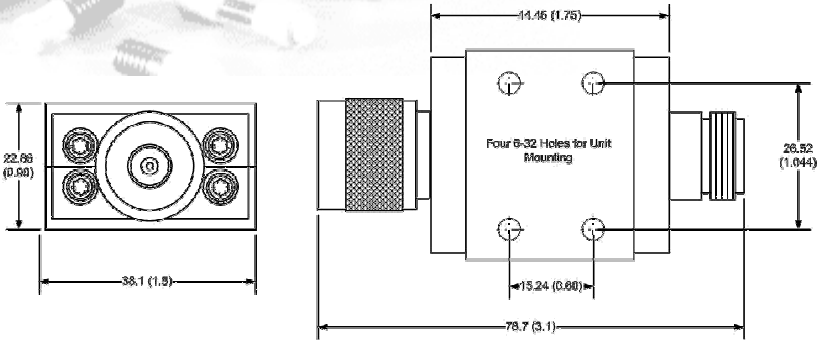
Weight:

1-30 dB .10 kg/ 3.6 oz.

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

Fixed Coaxial Attenuator Model WA21 & WA22
Low-Profile Mountable

DC – 4.0 GHz WA21 **25 Watts**
DC – 8.5 GHz WA22 **25 Watts**



Features

Designed to meet environmental requirements of MIL-DTL-3933. Conductive Cooling. Flat base with mounting holes

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: WA21 DC - 4.0 GHz.
WA22 DC - 8.5 GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 25 watts average, 5 kilowatt peak (5 µsec pulse width; 1.5% duty cycle) with case temperature held to +100°C maximum using conductive heat sink.

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB			
	DC - 4.0 GHz		4.0 - 8.5 GHz	
	WA21	WA22	WA21	WA22
3,6 10,20 30	0.3 0.3 0.6	0.3 0.3 0.6	-- -- --	0.60 0.60 1.00
40	0.8	0.8	--	1.50

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

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 4.0	1.2
4.0 – 8.5	1.3

Connectors: Type N, SMA, and TNC stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012.

Add –LIM after connector option for Low Intermediation option. Example: WA21-XX-XX-LIM

Weight:
Type N .17 kg/ 6 oz.

Physical Dimensions:

Length:

Connector Type	DIM "A"
Type N	78.7 (3.1)
SMA	71.1 (2.8)

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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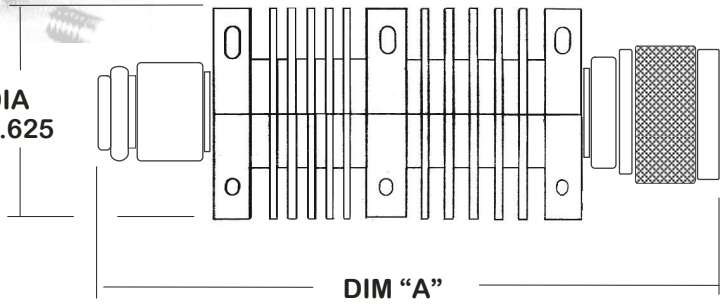
Fixed Coaxial Attenuator MODEL WA23

DC – 4.0 GHz **50 WATTS**

Bi-directional



Features

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

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 4.0 GHz.

Nominal dB Values: 3 - 40 dB (50 dB unidirectional version also available).

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

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC – 4.0 GHz
3,6,10,20	0.4
30,40	0.6

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.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.20

Physical Dimensions:

Length:

Connector Type	DIM "A"
SMA	101.09 (3.98)
Type N	111.76 (4.37)

Weight: .28 kg/ 10 oz.

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

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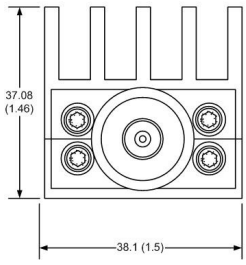
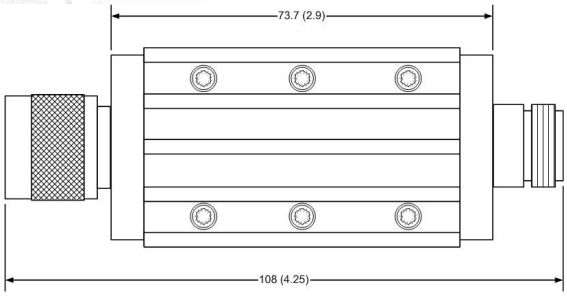
Fixed Coaxial Attenuator MODEL WA23B

DC – 4.0 GHz 50 WATTS

Bi-directional





Features

Designed to comply with MIL-DTL-3933. Bidirectional in power. Natural Convection Cooling. Flat base with mounting holes.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC – 4.0 GHz.

Nominal dB Value: 3 – 40 dB (50 dB unidirectional version also available).

Power Sensitivity: < 0.005 dB/dB x W

Power: 50W CW average bi-directional to 25°C; de-rated linearly to 2.5 W at 125°C. Peak power of 5Kw; 5 µsec pulse width; 0.5% duty cycle.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC – 4.0 GHz
3,6,10,20	0.4
30,40	0.6

Temperature Range: -55°C to 125°C.

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

Connectors: Type N or SMA stainless steel M/F connectors per MIL-STD-3448A, interface dimensions mate nondestructively with MIL-PRF-39012.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.20

Physical Dimensions:

Length:

Connector Type	Length
SMA	114.3 (4.50)
Type N	112.5 (4.43)

Weight: .28 kg/10 oz.

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

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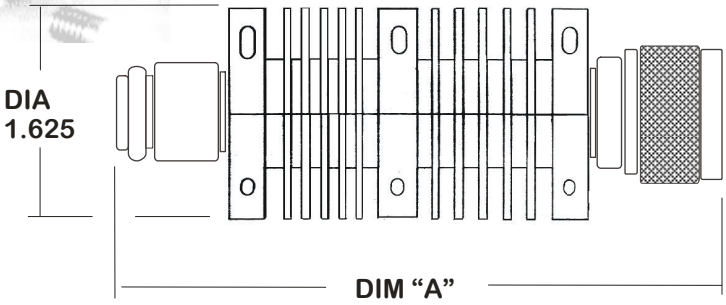
Fixed Coaxial Attenuator MODEL WA24

DC – 8.5 GHz
Bi-directional

50 WATTS



Features

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

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 8.5 GHz.

Nominal dB Values: 3 - 40 dB (50 dB unidirectional version also available).

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

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	DC – 4.0 GHz	4.0 – 8.5 GHz
3,6,10,20	0.4	0.75
30,40	0.6	1.00

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.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.20
4.0 - 8.5	1.30

Physical Dimensions:

Length:

Connector Type	DIM "A"
SMA	101.09 (3.98)
Type N	111.76 (4.37)

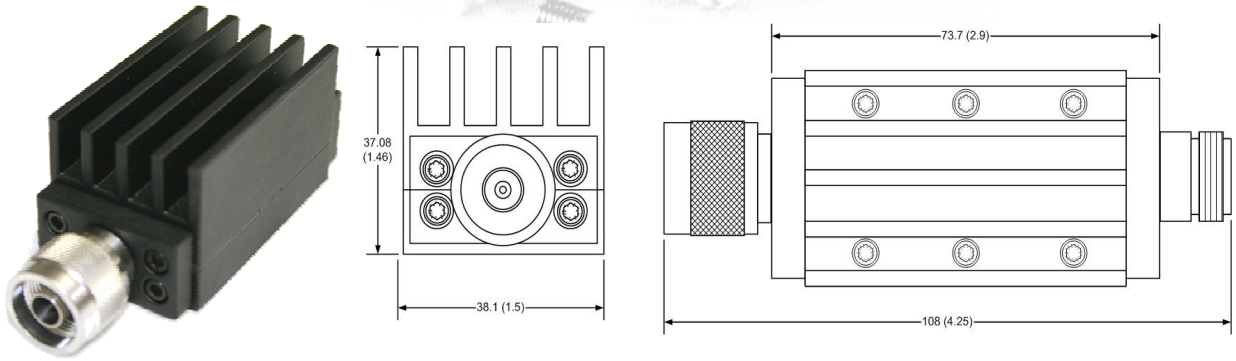
Weight: .28 kg/ 10 oz.

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

Fixed Coaxial Attenuator MODEL WA24B

DC – 8.5 GHz **50 WATTS**

Bi-directional



Features

Designed to comply with MIL-DTL-3933. Bidirectional in power. Natural Convection Cooling. Flat base with mounting holes.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC – 8.5 GHz.

Nominal dB Value: 3 – 40 dB (50 dB unidirectional version also available).

Power Sensitivity: < 0.005 dB/dB/W.

Power: 50W CW average bi-directional to 25°C; de-rated linearly to 2.5 W at 125°C. Peak power of 5Kw; 5 µsec pulse width; 0.5% duty cycle.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	DC – 4.0 GHz	4.0 – 8.5 GHz
3,6,10,20	0.4	0.75
30,40	0.6	1.00

Temperature Range: -55°C to 125°C.

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

Connectors: Type N or SMA stainless steel M/F connectors per MIL-STD-3448A, interface dimensions mate nondestructively with MIL-PRF-39012.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.20
4.0 - 8.5	1.30

Physical Dimensions:

Length:

Connector Type	Length
SMA	114.3 (4.50)
Type N	112.5 (4.43)

Weight: .28 kg/10 oz.

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

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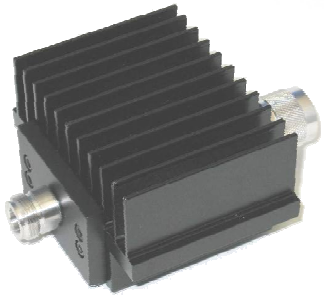
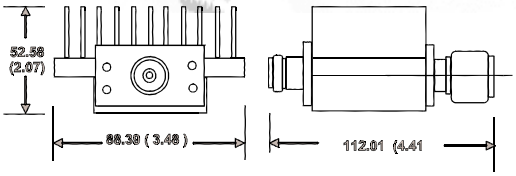
Fixed Coaxial Attenuator High Power

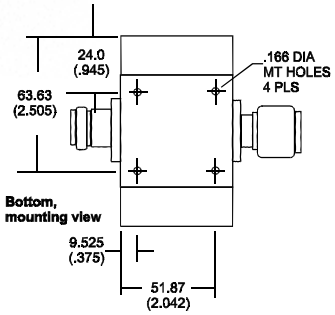
MODEL WA29

DC – 8.5 GHz

75 WATTS







Features

Type N, SMA 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. Unit may be mounted in any position.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 8.5 GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 75 watts average. Maximum rated average power to 25°C ambient temperature, de-rated linearly to 15 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 1.5% duty cycle).

Temperature Range: -55°C to +125°C.

Temperature Coefficient: < 0.0004 dB/dB/°C

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	DC - 4.0 GHz	4.0 - 8.5 GHz
3,6,10,20	0.4	0.75
30,40	0.6	1.0

Construction: Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper female contact, stainless steel male contact.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 4.0	1.20
4.0 – 8.5	1.30

Weight:

Type N	1.5 kg/ 3.3 lb.
SMA	1.3 kg/ 3.0 lb.
DIN 7/16	1.7 kg/ 3.7 lb.

Physical Dimensions:

Length:

Connector	Length
Type N	112.01 (4.41)
SMA	97.41 (3.84)

Width: **89.0 (3.5)**

Height: **54.0 (2.1)**

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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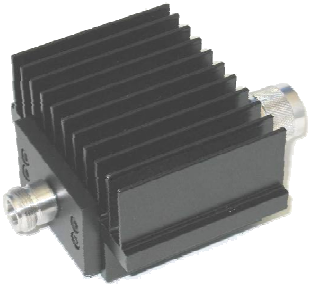
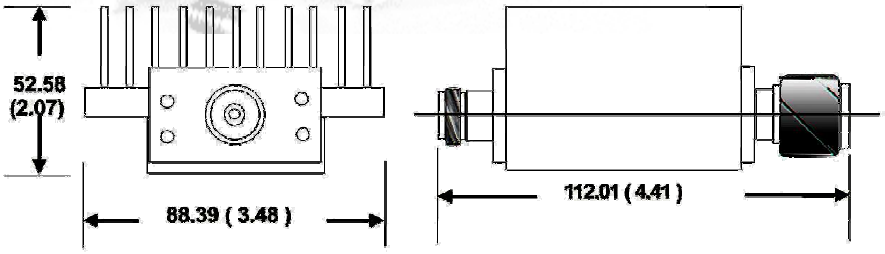
Fixed Coaxial Attenuator High Power

MODEL WA30

DC – 4.0 GHz

100 WATTS





Features

Type N, SMA or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-C-9012. 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.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 100 watts average. Maximum rated average power to 25°C ambient temperature, derated linearly to 15 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 0.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC – 4.0 GHz
3,6,10,20	0.4
30, 40	0.6

Construction: Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper female contact, stainless steel male contact.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 4.0	1.20

Weight:

Type N	1.5 kg/ 3.3 lb.
SMA	1.3 kg/ 3.0 lb.
DIN 7/16	1.7 kg/ 3.7 lb.

Physical Dimensions:

Length:

Connector	Length
Type N	112.01 (4.41)
SMA	97.41 (3.84)

Width: **89.0 (3.5).**

Height: **54.0 (2.1).**

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

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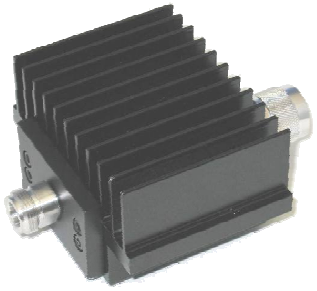
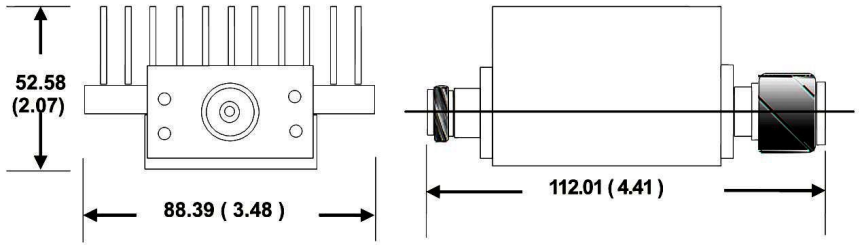
Fixed Coaxial Attenuator High Power

MODEL WA31

DC – 8.5 GHz

100 WATTS





Features

Type N, SMA or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-C-9012. 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.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 100 watts average. Maximum rated average power to 25°C ambient temperature, derated linearly to 15 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 1.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	DC - 4.0 GHz	4.0 - 8.5 GHz
3,6,10,20	0.4	0.75
30, 40	0.6	1.0

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

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 4.0	1.20
4.0 – 8.5	1.30

Weight:

Type N	1.5 kg/ 3.3 lb.
SMA	1.3 kg/ 3.0 lb.
DIN 7/16	1.7 kg/ 3.7 lb.

Physical Dimensions:

Length:

Connector	Length
Type N	112.01 (4.41)
SMA	97.41 (3.84)

Width: **89.0 (3.5)**

Height: **54.0 (2.1)**

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

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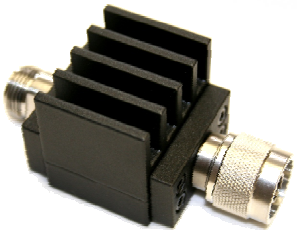
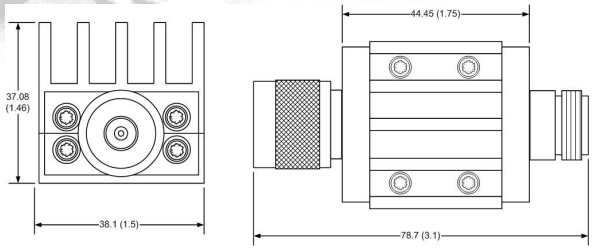
Fixed Coaxial Attenuator MODEL WA33B

DC – 8.5 GHz 25 WATTS





Features

Designed to meet environmental requirements of MIL-DTL-3933.

- Low Intermodulation option available on 10, 20, 30, and 40dB.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 8.5 GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 25 watts average to 25°C ambient temperature, de-rated linearly to 15 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 1.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

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

Standard Nominal Values and Deviations:

Atten. (dB)	Accuracy ± dB			
	DC - 4.0 GHz		4.0 - 8.5 GHz	
	WA33B	WA33B-LIM	WA33B	WA33B-LIM
3,6	0.3	--	0.6	--
10,20	0.3	0.4	0.6	0.7
30	0.6	0.7	1.0	1.20
40	0.8	1.0	1.5	1.30

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 4.0	1.20
4.0 – 8.5	1.30

Connectors: Type N or SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012.

Add –LIM after connector option for Low Intermodulation option. Example: WA33-XX-XX-LIM

Weight:

Type N .17 kg/ 6 oz.

Physical Dimensions:

Connector Type	Length
Type N	81.53 (3.21)
SMA	71.12 (2.80)

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

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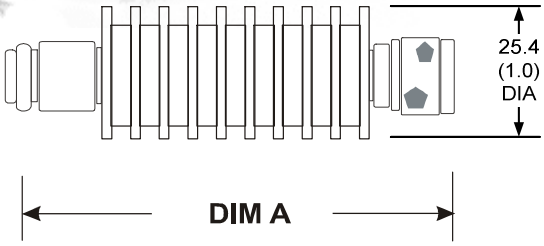
Fixed Coaxial Attenuator MODEL WA33L

DC – 8.5 GHz 20 WATTS



Features

Type N, SMA, 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.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC – 8.5 GHz.

Nominal dB Values: 3 - 40 dB.

Power Sensitivity: < 0.0005 dB/dB x W; Bidirectional in power.

Power Rating: 20 watts average to 25°C ambient temperature, derated linearly to 2.0 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 0.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC – 8.5 GHz
3,6,10,20,30	0.6
40	1.0

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

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.20
4.0 - 8.5	1.30

Weight:

Type N	.17 kg / 6 oz.
DIN 7/16	.18 kg / 7 oz.

Physical Dimensions:

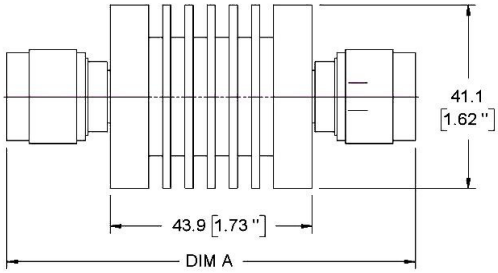
Length:

Connector Type	DIM "A"
Type N	78.23 (3.08)
DIN 7/16	106.68 (4.80)
SMA	71.12 (2.80)

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

Fixed Coaxial Attenuator MODEL WA33

DC – 8.5 GHz 25 WATTS



Features

Designed to meet environmental requirements of MIL-DTL-3933.

- Low Intermodulation option available on 10, 20, 30, and 40dB.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 8.5 GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 25 watts average to 25°C ambient temperature, derated linearly to 2.5 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 1.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Atten. (dB)	Accuracy ± dB			
	DC - 4.0 GHz		4.0 - 8.5 GHz	
	WA33	WA33-LIM	WA33	WA33-LIM
3,6 10,20 30	0.3 0.3 0.6	-- 0.4 0.7	0.6 0.6 1.0	-- 0.7 1.20
40	0.8	1.0	1.5	1.30

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

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.20
4.0 – 8.5	1.30

Connectors: Type N, SMA, or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012.

Add –LIM after connector option for Low Intermodulation option. Example: WA33-XX-XX-LIM

Weight:

Type N	.17 kg/ 6 oz.
DIN 7/16	.18 kg / 7 oz.

Physical Dimensions:

Connector Type	DIM "A"
Type N	81.03 (3.19)
DIN 7/16	106.68 (4.80)
SMA	71.12 (2.80)

Length:

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

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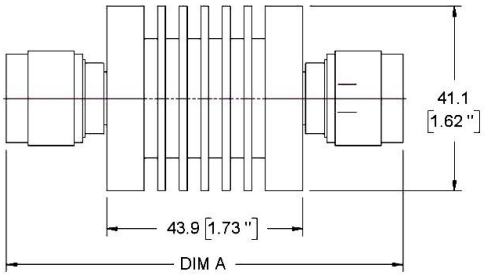
Fixed Coaxial Attenuator MODEL WA34

DC – 4.0 GHz 25 WATTS



Features

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

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 4.0 GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 25 watts average to 25°C ambient temperature, derated linearly to 2.5 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 0.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Attenuation (dB)	Accuracy ± dB
	DC – 4.0 GHz
3,6,10,20,30	0.6
40	1.0

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

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 2.0	1.10
2.0 - 4.0	1.20

Weight:

Type N	.17 kg/ 6 oz.
DIN 7/16	.18 kg / 7 oz.

Physical Dimensions:

Length:

Connector Type	DIM "A"
Type N	81.03 (3.19)
DIN 7/16	106.68 (4.80)
SMA	71.12 (2.80)

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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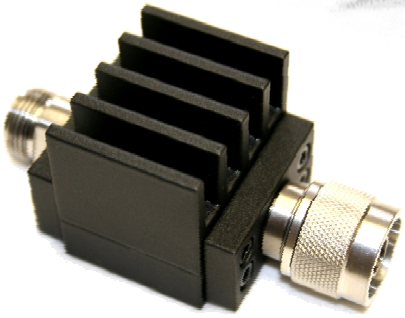
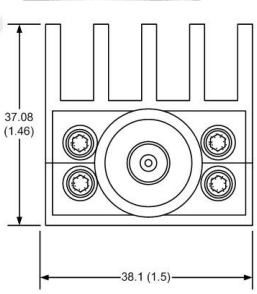
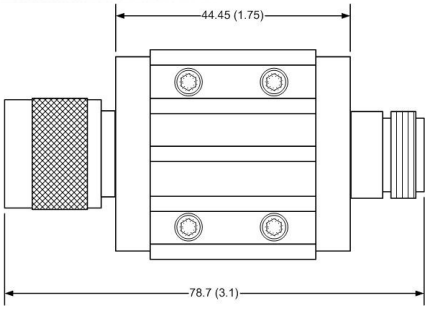
Fixed Coaxial Attenuator MODEL WA34B

DC – 4.0 GHz **25 WATTS**







Features

Type N, SMA, 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.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 4.0 GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 25 watts average to 25°C ambient temperature, derated linearly to 2.5 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 0.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC – 4.0 GHz
3,6,10,20,30	0.6
40	1.0

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

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 2.0	1.10
2.0 - 4.0	1.20

Weight:

Type N	.17 kg/ 6 oz.
DIN 7/16	.18 kg / 7 oz.

Physical Dimensions:

Length:

Connector Type	Length
Type N	81.53 (3.21)
DIN 7/16	106.68 (4.80)
SMA	71.12 (2.80)

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

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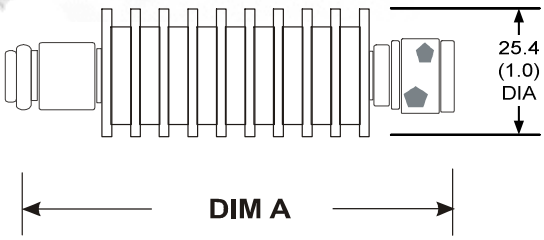
Fixed Coaxial Attenuator MODEL WA34L

DC – 4.0 GHz 20 WATTS



Features

Type N, SMA, 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.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 4.0 GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 20 watts average to 25°C ambient temperature, derated linearly to 2.5 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 0.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC – 4.0 GHz
3,6,10,20,30	0.6
40	1.0

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

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 2.0	1.10
2.0 - 4.0	1.20

Weight:

Type N .17 kg/ 6 oz.
7/16 .18 kg / 7 oz.

Physical Dimensions:

Length:

Connector Type	DIM "A"
Type N	78.23 (3.08)
DIN 7/16	106.68 (4.80)
SMA	71.12 (2.80)

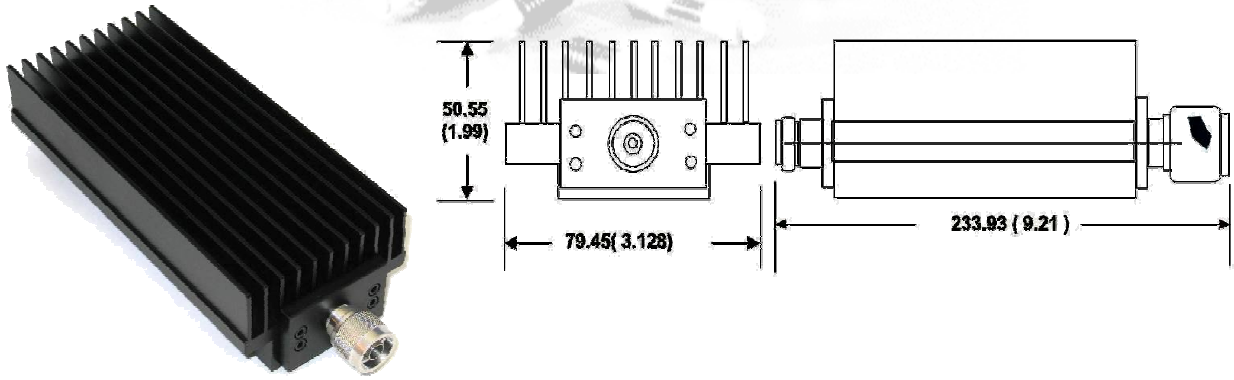
Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

Fixed Coaxial Attenuator High Power

MODEL WA35

DC – 8.5 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 - 8.5 GHz.

Nominal dB Values: 10 - 40 dB.

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

Power Rating: 250 watt CW/ 5KW peak. Maximum rated average power to 25°C ambient temperature, derated linearly to 25 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 1.5% duty cycle).

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC - 8.5 GHz
10,20,30	0.75
40	1.0

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.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.30
4.0 – 8.5	1.45

Weight: 1.28 kg/ 2.75 lbs.

Length: 233.93 (9.21).

Width: 79.45 (3.128).

Height: 50.55 (1.99).

Note: Dimensions are given in mm (inches) and are maximum ± .05 in., unless otherwise specified.

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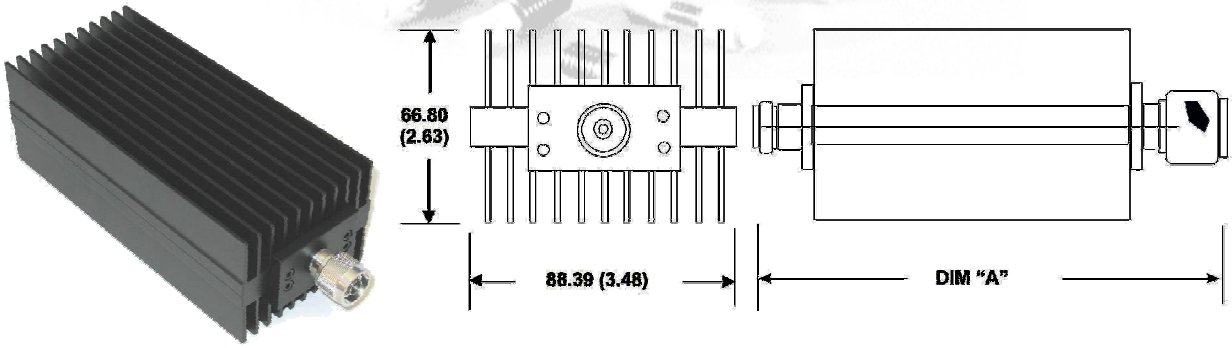
Fixed Coaxial Attenuator High Power

MODEL WA36

DC – 8.5 GHz

300 WATTS



Features

Type N or 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 - 8.5 GHz.

Nominal dB Values: 10 - 40 dB.

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

Power Rating: 300 watt CW/ 5KW peak. Maximum rated average power to 25°C ambient temperature, derated linearly to 25 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 1.5% duty cycle).

Temperature Range: -55°C to +125°C.

Temperature Coefficient: < 0.0004 dB/dB/°C

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.30
4.0 – 8.5	1.45

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC - 8.5 GHz
10,20,30	0.75
40	1.0

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

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

Weight: 1.28 kg/ 2.75 lbs.

Length: 233.93 (9.21).

Width: 79.45 (3.13).

Height: 50.55 (1.99).

Note: Dimensions are given in mm (inches) and are maximum ± .05 in., unless otherwise specified.

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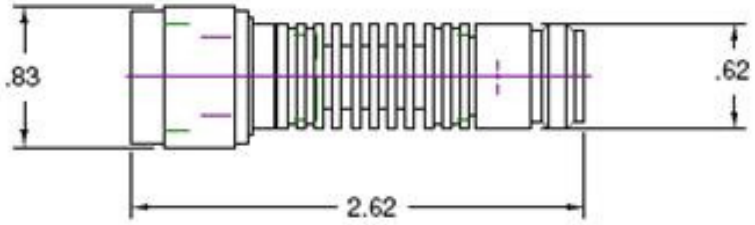
Fixed Coaxial Attenuator MODEL WA37

DC – 8.5 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: DC - 8.5 GHz.

Nominal dB Values: 1 – 30 dB.

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

Power Rating: 10 watts average, 1 KW peak. Full power from -55°C to +25°C ambient, de-rated linearly to 1 Watt at +125° C. Peak power rated for 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.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
1, 2, 10	0.5
3, 6	0.3
20	0.7
30	0.8

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

.

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.15
4.0 – 8.5	1.20

Length: 67.3 (2.62).

Weight: .085 kg/ 3 oz.

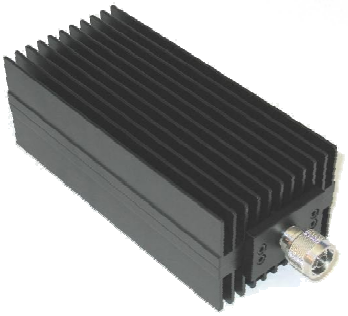
Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

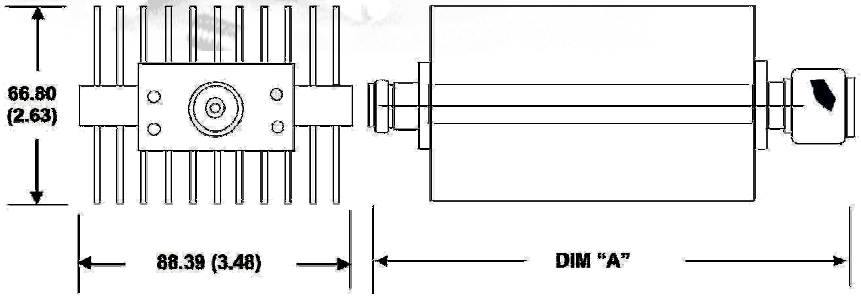
Fixed Coaxial Attenuator High Power

MODEL WA38

DC – 5.0 GHz

300 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 - 5.0 GHz.

Nominal dB Values: 10 - 40 dB.

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

Power Rating: 300 watt CW/ 10KW peak. Maximum rated average power to 25°C ambient temperature, derated linearly to 25 watts at 125° C. 10 kilowatt peak (5 µsec pulse width; 1.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	DC - 2.0 GHz	2.0 - 5.0 GHz
10,20,30	0.4	0.75
40	0.5	1.0

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

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 2.0	1.25
2.0 - 5.0	1.45

Weight: 1.28 kg/ 2.75 lbs.

Length: 233.93 (9.21).

Width: 79.45 (3.13).

Height: 50.55 (1.99).

Note: Dimensions are given in mm (inches) and are maximum ± .05 in., unless otherwise specified.

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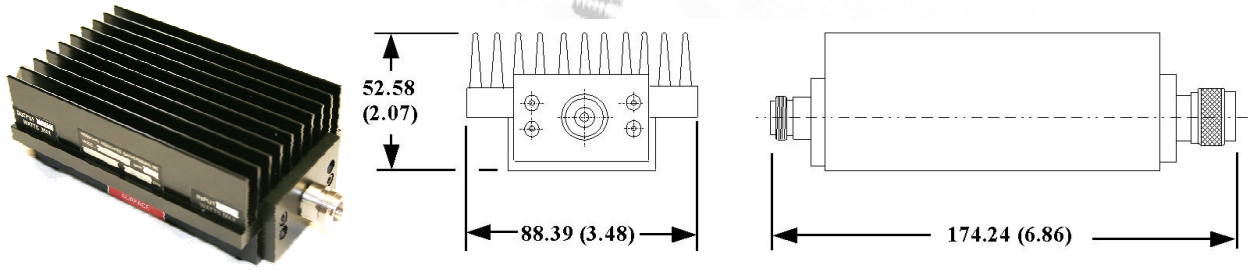
Fixed Coaxial Attenuator High Power

MODEL WA39

DC – 4.0 GHz

150 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. Unit may be mounted in any position.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 4.0 GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 150 watts average. Maximum rated average power to 25°C ambient temperature, derated linearly to 15 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 1.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Value & Deviations:

Attenuation (dB)	Accuracy ± dB DC – 4.0 GHz
3,6,10,10,30	0.4
40	0.5

Construction: Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper female contacts, stainless steel male.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.25

Weight:

Type N	1.5 kg/ 3.3 lb.
DIN 7/16	1.7 kg/ 3.7 lb.

Physical Dimensions:

Length:

Connector	Length
Type N	174.24 (6.86)
DIN 7/16	226 (8.5)
SMA	183 (7.2)

Width: 89.0 (3.5) (max).

Height: 54.0 (2.1) (max).

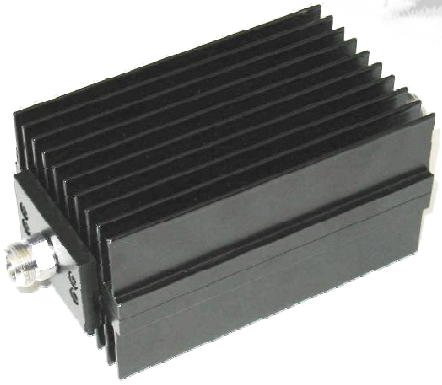
Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

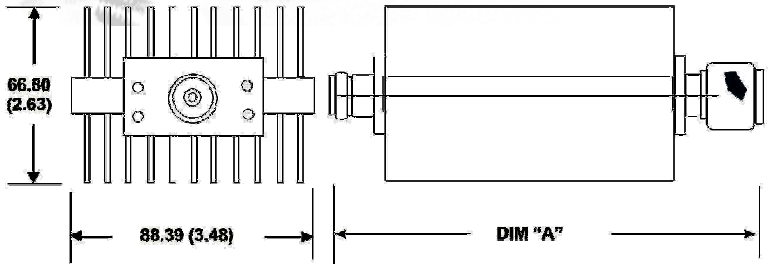
Fixed Coaxial Attenuator High Power

MODEL WA40

DC – 2.5 GHz

150 WATTS





Features

Type N, SMA, 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. Unit may be mounted in any position.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 2.5 GHz.

Nominal dB Values: 3 - 40 dB.

Power Sensitivity: < 0.0001 dB/dB/W.

Power Rating: 150W CW / 10 KW peak; Unidirectional. Full power from -55°C to +25°C. Derated linearly to 15 watts at 125°C. 10 kilowatt peak (5 µsec pulse width; 1.5% duty cycle).

Temperature Range: -55°C to +125°C.

Temperature Coefficient: < 0.0004 dB/dB/°C

Standard Nominal Value & Deviations:

Attenuation (dB)	Accuracy ± dB DC – 2.5 GHz
3,6,10,10,30,40	0.5

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 2.5	1.10

Construction: Black aluminum alloy body with passivated stainless steel connectors.

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

Physical Dimensions & Weight:

Connector Type	Dim "A"	Weight kg/oz.
N SMA DIN 7/16	174.24 (8.86) 189.89 (7.47) 265.68 (10.46)	.85/30 .79/28 1.02/36

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

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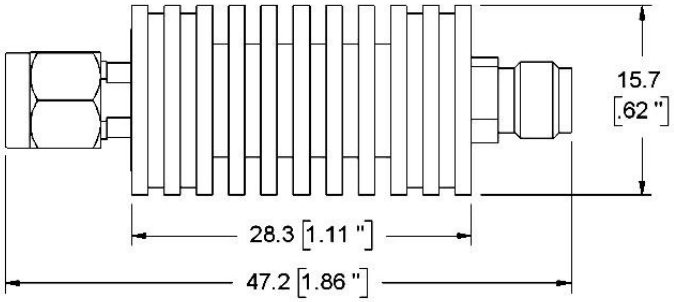
Fixed Coaxial Attenuator MODEL WA41

DC – 18.0 GHz 10 WATTS



Features

SMA stainless steel M/F SMA 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.

Nominal dB Values: 1 - 30 dB.

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

Power Rating: 10W CW / 1 KW peak. Full power from -55°C to +25°C. Derated linearly to 0 watts at 125°C.

Temperature Range: -55°C to +125°C.

Temperature Coefficient: < 0.0004 dB/dB/°C

Construction: Black aluminum alloy body with passivated stainless steel connectors.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
1, 2, 10	0.5
3, 6	0.3
20	0.7
30	1.0

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

Maximum VSWR:

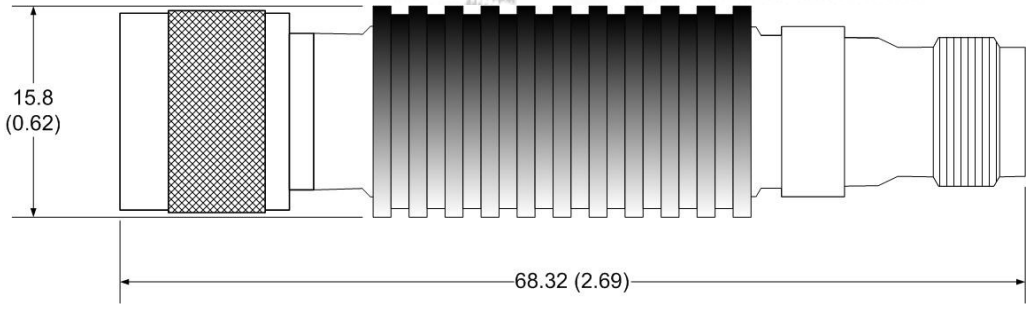
Frequency (GHz)	VSWR
DC – 8.0	1.20
8.0 – 12.4	1.30
12.4 – 18.0	1.35

Weight:
.028 kg/ 1 oz.

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

Fixed Coaxial Attenuator MODEL 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. Unit may be mounted in any position.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 18.0 GHz.

Nominal dB Values: 1 - 30 dB.

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

Power Rating: 10W CW / 1 KW peak. Full power from -55°C to +25°C. Derated linearly to 0 watts at 125°C.

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
1, 2, 10	0.5
3, 6	0.3
20	0.7
30	1.0

Construction: Black aluminum alloy body with passivated stainless steel connectors.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 8.0	1.20
8.0 – 12.4	1.35
12.4-18.0	1.45

Weight:
.056 kg/ 2 oz.

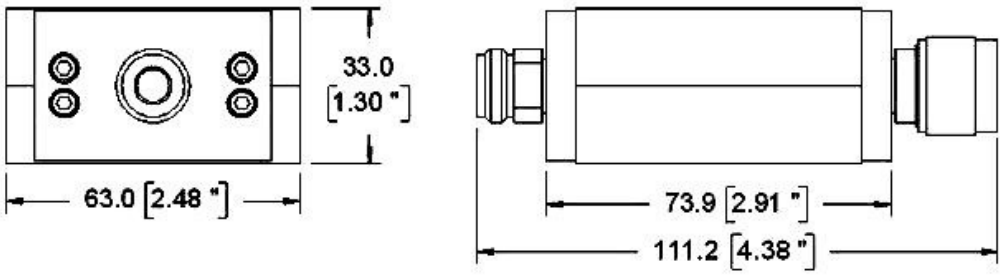
Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

Fixed Coaxial Attenuator
Low-Profile Mountable

Model WA42

DC – 2.5 GHz

150 Watts



Features

Type N, SMA, 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. Unit may be mounted in any position.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 2.5 GHz.

Nominal dB Values: 3 - 40 dB.

Power Sensitivity: < 0.0001 dB/dB/W.

Power Rating: 150W CW / 10 KW peak; Unidirectional. Peak power of 5Kw; 5 µsec pulse width; 0.5% duty cycle, with case temperature held to +100°C maximum using conductive heat sink.

Temperature Range: -55°C to +100°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
3 – 40	0.5

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 2.5	1.10

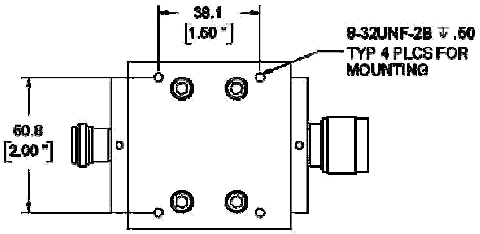
Construction: Aluminum alloy body with passivated stainless steel connectors.

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

Physical Dimensions:

Connector Type	Length	Weight kg/oz
N Type	174.24 (8.86)	.85/30
SMA	189.89 (7.47)	.79/28
DIN 7/16	265.68 (10.46)	1.02/36

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

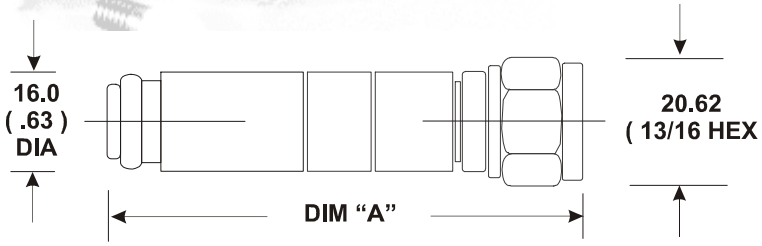


Fixed Coaxial Attenuator Precision

MODEL WA44

DC –18.0 GHz

5 WATTS



Features

Precision N-Type stainless steel connectors with hex coupling nut 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: DC - 18.0 GHz.

PowerRating: 5W CW / 1kW peak. Full power from -55°C to +25°C.Derated linearly to 0 watts at 125°C.

Power Sensitivity: <0.005 dB /dB/W; Bidirectional

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
1 - 9	0.3
10, 20	0.5
30, 40	1.0
50, 60	1.5

Physical Dimensions:

Attenuation (dB)	Length
1 – 30	74.42 (2.93)
31 – 60	84.58 (3.33)

Temperature Range: -55°C to +125°C.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.15
4.0 - 12.4	1.20
12.4 - 18.0	1.25

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

Construction: Stainless steel barrels with Type N stainless steel male and female connectors to mate nondestructively with connectors per MIL-PRF-39012 and MIL-STD-348A.

Weight:

1 to 30 dB: Net 0.10 kg (3.5 oz.)
31 to 60 dB: Net 0.13 kg (4.5 oz.)

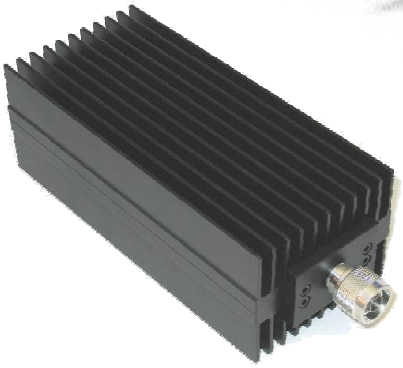
Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

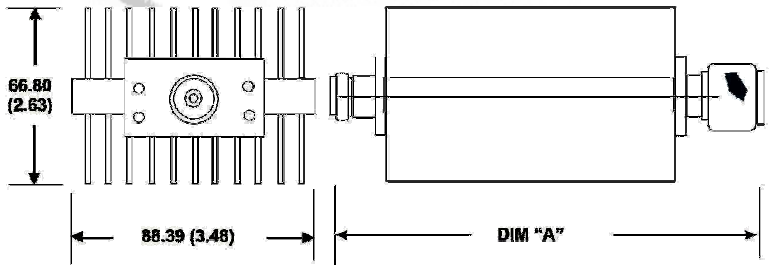
Fixed Coaxial Attenuator High Power

MODEL WA45

DC – 2.5 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. Unit may be mounted in any position.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 2.5 GHz.

Nominal dB Values: 3 - 40 dB.

Power Sensitivity: < 0.0001 dB/dB/W.

Power Rating: 250W CW / 10 Kw peak; Unidirectional. Full power from -55°C to +25°C.

Temperature Range: -55°C to +125°C.

Temperature Coefficient: < 0.0004 dB/dB/°C

Attenuation (dB)	Accuracy ± dB
	DC – 2.5 GHz
3,6,10,10,30,40	0.5

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 2.5	1.10

Construction: Black aluminum alloy body with passivated stainless steel connectors.

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

Physical Dimensions & Weight:

Connector Type	Dim "A"	Weight kg/oz
Type N DIN 7/16	235.71 (9.28) 276.35 (10.88)	1.54 kg/ 3.4 lbs 1.72 kg/ 3.8 lbs

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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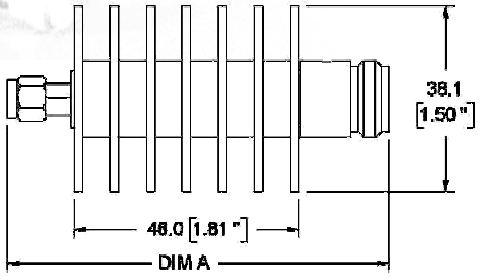
Fixed Coaxial Attenuator MODEL WA46
High Power - High Frequency

DC – 18.0 GHz 25 WATTS
Bidirectional



Features

Designed to meet environmental requirements of MIL-DTL-3933. Low Intermodulation option available on 10, 20, 30, and 40 dB.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 18.0 GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 25W CW / 1kw peak. Maximum rated average power to 25°C ambient temperature, derated linearly to 2.5 watts at 125°C. 1 kilowatt peak (5 µsec pulse width; 1.25% duty cycle).

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	WA46-LIM	
	DC – 18.0 GHz	DC– 8.0 GHz	8.0 – 18.0 GHz
3, 6	0.50	--	--
10	0.50	0.5	+1.0/-0.0
20	0.75	0.5	+1.0/-0.0
30, 40	1.00	0.5	+1.0/-0.0

Note: Dimensions are given in mm (inches) and are maximum unless otherwise specified.

Connectors: 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. High power input is unidirectional: Input connector optional; Female if not specified.

* Add –LIM after connector option for Low Intermodulation option.

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. Gold plated beryllium copper female contacts, stainless steel male contacts.

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 8.0	1.20
8.0 – 12.4	1.25
12.4 – 18.0	1.35

Weight:

Type N	0.11 kg/ 4 oz.
SMA	0.08 kg/ 2.7 oz.

Physical Dimensions:

Length:

Connector	Dimension A
Type N	83.8 (3.3)
SMA	73.7 (2.9)

Diameter: 38.1 (1.5).

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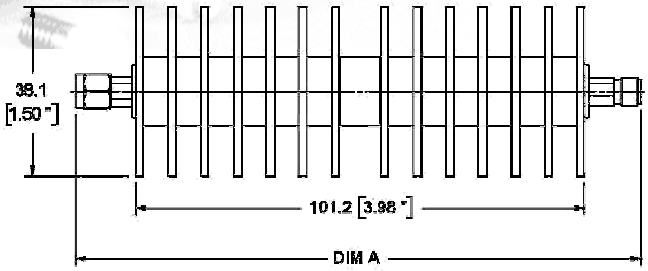
Fixed Coaxial Attenuator MODEL WA47
High Power - High Frequency

DC – 18.0 GHz 50 WATTS
Bidirectional



Features

Designed to meet MIL-DTL-3933 environmental specification. Low Intermodulation option in 10, 20, 30, and 40dB models.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC -18.0 GHz.

Nominal dB Values: 6 - 40 dB.

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

Power Rating: 50W CW/ 1 KW peak to 25°C ambient temperature, derated linearly to 10 watts at 125°C, 1 kilowatt peak (5 µsec pulse width; 5% duty cycle).

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB		
	WA47	WA47-LIM	
	DC – 18.0 GHz	DC-8 GHz	8–18 GHz
6	0.75	--	--
10	0.50	0.75	+1.5/-0.5
20	0.75	0.75	+1.5/0.5
30, 40	1.00	0.75	+1.5/-0.5

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

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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. Gold plated beryllium copper contacts.

Connectors: Type N or SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. High power input is unidirectional: Input connector optional; Female if not specified.

*Add –LIM for Low Intermodulation option after connector option. Example: WA47-dB-XX-LIM

Maximum VSWR:

Frequency (GHz)	VSWR 6 dB	VSWR 10, 20,30,40 dB
DC – 8.0	1.25	1.20
8.0 – 12.4	1.35	1.25
12.4 – 18.0	1.45	1.35

Weight:

Type N 0.21 kg / 7.5 oz.
SMA 0.17 kg / 6 oz.

Physical Dimensions:

Length:

Connector	Dimension A
Type N	119.4 (4.7)
SMA	109.2 (4.3)

Diameter: 38.1 (1.5)

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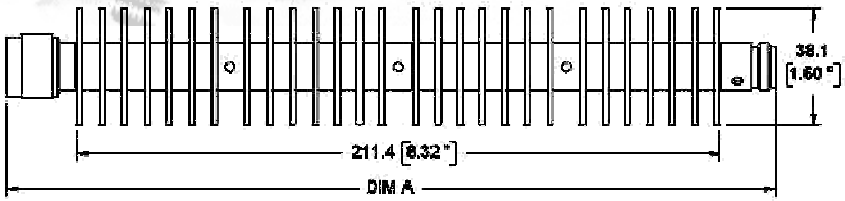
Fixed Coaxial Attenuator MODEL WA48
High Power - High Frequency

DC –18.0 GHz 100 WATTS



Features

Designed to meet MIL-DTL-3933 environmental specification. Low Intermodulation option available.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC -18.0 GHz.

Nominal dB Values: 10 - 40 dB.

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

Power Rating: 100 watts average. Maximum rated average power to 25°C ambient temperature, derated linearly to 10 watts at 125°C. 1 kilowatt peak (5 µsec pulse width; 5% duty cycle).

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	WA48-LIM	
	DC – 18.0 GHz	DC-8.0 GHz	8.0–18.0 GHz
10	1.25	1.00	+3.0/-0.0
20	0.75	1.00	+3.0/-0.0
30, 40	1.00	1.00	+3.0/-0.0

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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. Gold plated beryllium copper female contacts, stainless steel male contacts.

Connectors: Type N or SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012. High power input is unidirectional: Input connector optional; Female if not specified.

* Add –LIM for Low Intermodulation option after connector option. Example: WA48-dB-XX-LIM

Maximum VSWR:

Frequency (GHz)	VSWR 10 dB	VSWR 20,30,40 dB	WA48-LIM
DC – 8.0	1.40	1.25	1.40
8.0 – 12.4	1.40	1.35	1.45
12.4 – 18.0	1.55	1.45	1.45

Weight:

Type N	0.36 kg / 13 oz.
SMA	0.28 kg / 10 oz.

Physical Dimensions:

Length:

Connector	Dimension A
Type N	256.6 (10.1)
SMA	246.4 (9.7)

Diameter: 38.1 (1.5)

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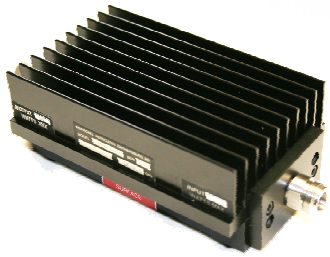
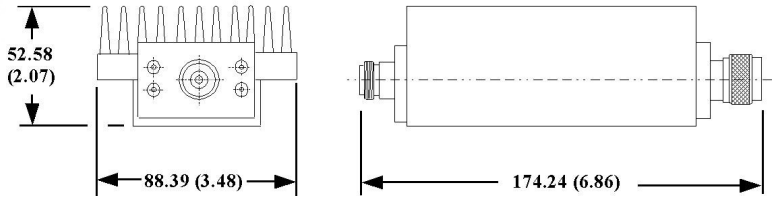
Fixed Coaxial Attenuator High Power

MODEL WA49

DC – 8.5 GHz

150 WATTS





Features

Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position. Low Intermodulation option available.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 8.5 GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 150 watts average. Maximum rated average power to 25°C ambient temperature, derated linearly to 15 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 1.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

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

Standard Nominal Values/ Deviations:

Attenuation (dB)	Accuracy ± dB DC - 8.5 GHz	
	WA49	WA49-LIM
3,6	0.75	----------
10,20	0.75	1.25
30	0.75	1.75
40	1.0	1.75

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

Connectors: Type N, SMA, and DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012.

Add –LIM for Low Intermodulation option after connector option.
Example: WA49-dB-XX-LIM

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.20
4.0 – 8.5	1.35

Weight:

Type N 1.5 kg/ 3.3 lb.
DIN 7/16 1.7 kg/ 3.7 lb.

Physical Dimensions:

Length:

Connector	Length
Type N	174.24 (6.86)
DIN 7/16	226 (8.5)

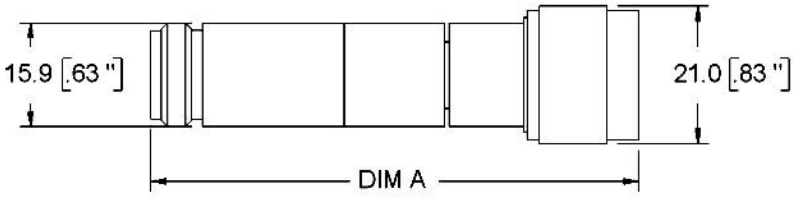
Width: 89.0 (3.5) Max

Height: 54.0 (2.1) Max

Note: Dimensions are given in mm (inches) unless otherwise specified.

Fixed Coaxial Attenuator MODEL WA50

DC – 3.0 GHz 2 WATTS



Specifications

Nominal Impedance: 50 ohms.

Frequency: DC to 3.0 GHz.

Standard Nominal Values and Deviations:

Standard Nominal Value (dB)	Deviation		
	From Nominal At DC (± dB)	From DC	
		2 GHz (± dB)	3 GHz (± dB)
1 thru 5	0.02	0.1	0.2
6 thru 10	0.05	0.1	0.2
20 thru 50	0.10	0.15	0.3

Maximum VSWR:

DC: 50 ± 1 ohms
1.0 GHz: 1.15
3.0 GHz 1.20

Power Rating:

1 to 50 dB: 2 watts average, 1kW peak.

Physical Dimensions:

Attenuation (dB)	Dim "A" Max
1 – 30	76.2 (3.0)
31 – 50	88.9 (3.5)

Temperature Range: -30°C to +70°C (no derating)

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

Accuracy of Calibration:

Fre-quency	VSWR	Insertion Loss	
		1 40 dB	50 dB
DC	1%	005 dB / 10 dB	0.02 dB
1 GHz	2%	dB or 0.1 dB/ 10 dB, whichever is greater.	
2 & 3 GHz	4%		

Construction: Stainless steel barrels. Type N stainless steel male and female connectors to mate nondestructively with connectors per MIL-PRF-39012 and MIL-STD-348A.

Weight:
1 to 30 dB: Net 0.10 kg (3.6 oz.)
31 to 50 dB: Net 0.13 kg (4.5 oz.)

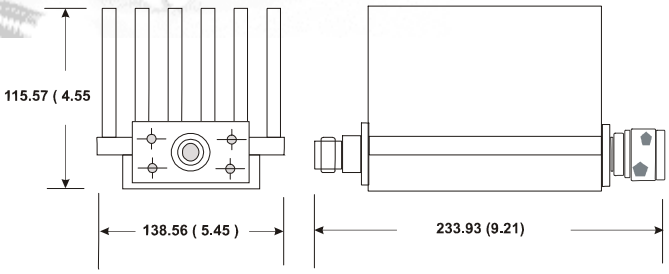
Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

Fixed Coaxial Attenuator High Power

MODEL 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 - 8.5 GHz.

Nominal dB Values: 10 - 40 dB.

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

Power Rating: 500 watt CW/ 5KW peak. Maximum rated average power to 25°C ambient temperature, derated linearly to 25 watts at 125°C. 5 kilowatt peak (5 µsec pulse width; 1.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC - 8.5 GHz
10,20,30	0.75
40	1.0

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

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.25
4.0 – 8.5	1.45

Weight: 4.1 kg / 9.0 lbs.

Width: 139.7 (5.5)

Height: 116.9 (4.6)

Length:

Connector	Length
Type N	297 (11.7)
DIN 7/16	338 (13.3)

Note: Dimensions are given in mm (inches) and are maximum ± .05 in., unless otherwise specified.

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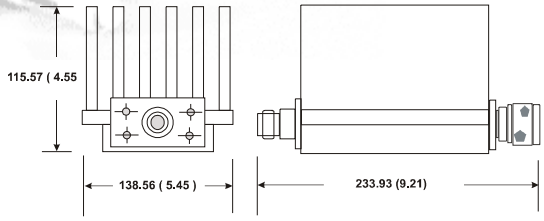
Fixed Coaxial Attenuator High Power

MODEL WA53

DC – 2.5 GHz

500 WATTS



Features

Designed to meet MIL-DTL-3933 environmental specifications. Unit may be mounted in a horizontal or vertical position. Convection cooled, full power rating without forced air cooling.

Low Intermodulation option; 10, 20, 30, and 40dB models.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC -2.5 GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 500 watts average. Maximum rated average power to from –55°C to 35°C ambient temperature, de-rated linearly to 50 watts at 125°C. 10-kilowatt peak (5 µsec pulse width; 2.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB DC - 2.5GHz	
	WA53	WA53 LIM
3 6 10	0.50 1.00 1.00	N/A N/A 1.20
20,30,40	0.50	1.20

Construction: Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper female contacts, stainless steel male contacts.

Connectors: Type N or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012.

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

Maximum VSWR:

Frequency (GHz)	VSWR	
	WA53	WA53-LIM
DC – 2.5 GHz	1.10	1.15

Weight: 4.1 kg / 9.0 lbs.

Width: 139.7 (5.5)

Height: 116.9 (4.6)

Length:

Connector	Length
Type N	297 (11.7)
DIN 7/16	338 (13.3)

Note: Dimensions are given in mm (inches) unless otherwise specified.

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Fixed Coaxial Attenuator 2.92 mm Connectors

MODEL WA54

DC – 40.0 GHz **2 WATTS**

Features

Designed to meet MIL-DTL-3933 environmental specifications.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 40.0 GHz.

Nominal dB Values: 3 - 30 dB.

Power Sensitivity: < 0.01 dB/dB/W; Bidirectional in power.

Power Rating: 2 watts average, 200 watts peak to 25°C ambient temperature, derated linearly to 0.1 watts at 100°C.

Connectors: Type 2.92 mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012 connectors. Designed to meet MIL-DTL-3933 environmental specifications.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	DC - 26.5	26.5 - 40.0
3, 6	0.50	1.00
10, 20	1.00	1.00
30	2.00	2.00

Temperature Range: -55°C to +100°C.

Temperature Coefficient: < 0.001 dB/dB/°C

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

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

Maximum VSWR:

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

Physical Dimensions:

Connector Option	Dim "A"
54-XX-12 (F/M)	36.07 (1.42)
54-XX-11 (F/F)	34.80 (1.37)
54-XX-22 (M/M)	37.34 (1.47)

Note: Dimensions are given in mm (inches) and are maximum unless otherwise specified.

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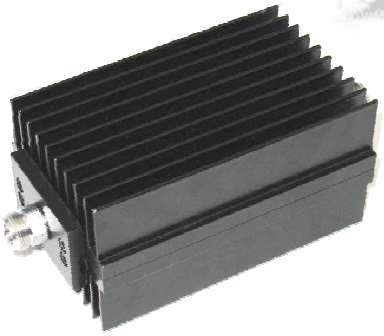
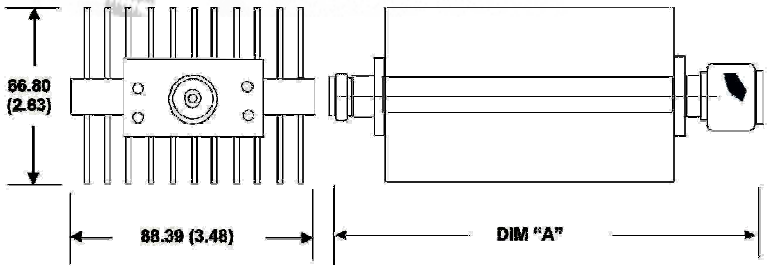
Fixed Coaxial Attenuator High Power

MODEL WA57

DC – 5.0 GHz

150 WATTS





Features

Type N, SMA, 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. Unit may be mounted in any position.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 5.0 GHz.

Nominal dB Values: 3 - 40 dB

Standard Nominal Values and Deviations:

Attenuation (dB)	Deviation ± dB DC - 5.0 GHz	
	WA57	WA57-LIM
3*, 6	1.25	N/A
10, 20	1.25	2.00
30, 40	1.50	3.00

Maximum VSWR:

Frequency (GHz)	Input	Output
DC - 2.0 (1.5*)	1.10	1.20 (1.10*)
2.0 - 5.0	1.15	1.20

Temperature Range: -55°C to +125°C.

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

Power Sensitivity: < 0.0001 dB/dB/W.

Power Rating: 150W CW / 10 KW peak; Unidirectional. Full power from -55°C to +25°C.

Construction: Black aluminum alloy body with passivated stainless steel connectors.

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

Physical Dimensions:

Connector Type	Dim "A"	Weight kg/oz
Type N	174.24 (8.86)	.85/30
SMA	189.89 (7.47)	.79/28
DIN 7/16	265.68 (10.46)	1.02/36

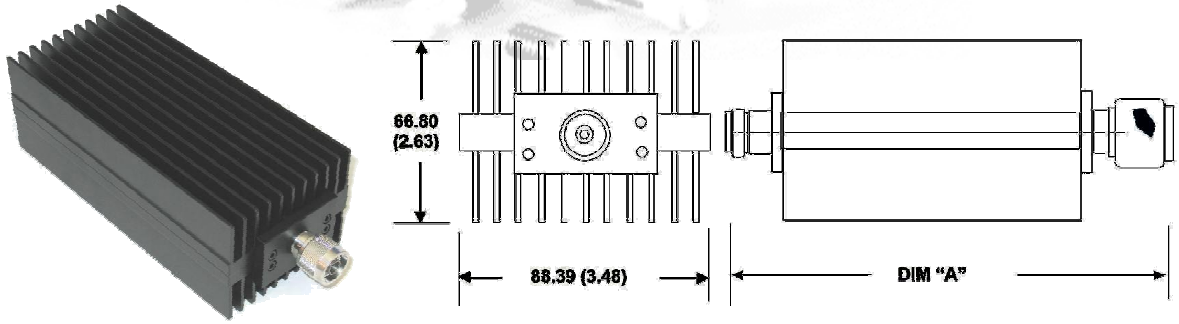
Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

Fixed Coaxial Attenuator High Power

MODEL WA58

DC – 5.0 GHz

250 WATTS



Features

Designed to meet MIL-DTL-3933 environmental specification. Unit may be mounted in any position.

Low Intermodulation Option in 10, 20, 30, and 40dB models.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 5.0 GHz.

Nominal dB Values: 3 - 40 dB.

Power Sensitivity: < 0.0001 dB/dB/W.

Power Rating: 250W CW / 10 KW peak; Unidirectional. Full power from -55°C to +25°C.

Temperature Range: -55°C to +125°C.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 2.0	1.20
2.0 - 5.0	1.25

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

Construction: Black aluminum alloy body with passivated stainless steel connectors.

Connectors: Type N or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012.

Add –LIM for Low Intermodulation option after connector option.
Example: WA58-dB-XX-LIM

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB DC - 5.0 GHz	
	WA58	WA58-LIM
3,6	1.50	N/A
10,20	1.50	2.00
30,40	1.75	3.00

Physical Dimensions:

Connector Type	Dim "A"	Weight kg/lb
Type N	235.71 (9.28)	1.54 / 3.4
DIN 7/16	276.35 (10.88)	1.72 / 3.8

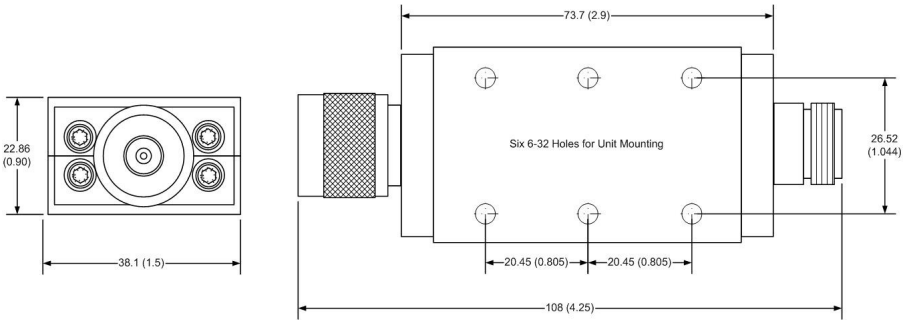
Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

Fixed Coaxial Attenuator
Low-Profile Mountable

MODEL WA59

DC – 2.5 GHz

100 WATT



Features

Designed to comply with MIL-DTL-3933.

Conductive Cooling

Flat base with mounting holes

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC – 2.5 GHz.

Nominal dB Value: 3 – 40 dB.

Connectors: Type N or SMA stainless steel M/F connectors per MIL-STD-3448A, interface dimensions mate nondestructively with MIL-PRF-39012.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC - 2.5 GHz
3 - 40	0.70

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 2.5	1.20

Power: 100W average unidirectional, peak power of 10KW (5 µsec pulse width; 0.5% duty cycle) with case temperature held to +100°C maximum using conductive heat sink.

Construction: Black Aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper male/female contacts.

Power Sensitivity: < 0.0005 dB/dB/W.

Temperature Range: -55°C to 125°C.

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

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

Weight: .14 kg / 5 oz.

Length:

Connector Type	Length
Type N	108.5 (4.25)
SMA	120.65 (4.75)

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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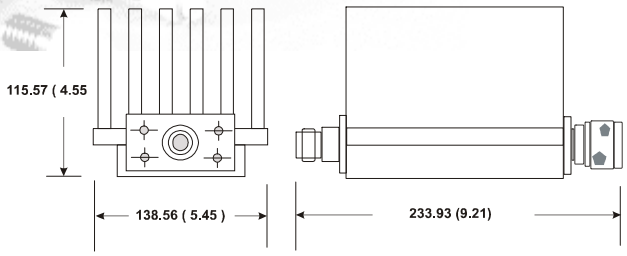
Fixed Coaxial Attenuator High Power

MODEL WA60

DC – 5.0 GHz

500 WATTS



Features

Designed to meet MIL-DTL-3933 environmental specifications. Unit may be mounted in a horizontal or vertical position. Convection cooled, full power rating without forced air cooling. Low Intermodulation option; 10, 20, 30,and 40dB models.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 5.0GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 500 watts average. Maximum rated average power to from –55°C to 35°C ambient temperature, derated linearly to 50 watts at 125°C. 10-kilowatt peak (5 µsec pulse width; 2.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB DC - 5.0GHz	
	WA60	WA60 LIM
3 6 10	0.50 1.00 1.00	N/A N/A 1.20
20,30,40	0.50	1.20

Construction: Black aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper female contacts, stainless steel male contacts.

Connectors: Type N or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012.

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

Maximum VSWR:

Frequency (GHz)	VSWR	
	WA60	WA60-LIM
DC – 2.5	1.15	1.20
2.5 – 5.0	1.35	1.40

Weight: 4.1 kg / 9.0 lbs.

Width: 139.7 (5.5)

Height: 116.9 (4.6)

Length:

Connector	Length
Type N	297 (11.7)
DIN 7/16	338 (13.3)

Note: Dimensions are given in mm (inches) unless otherwise specified.

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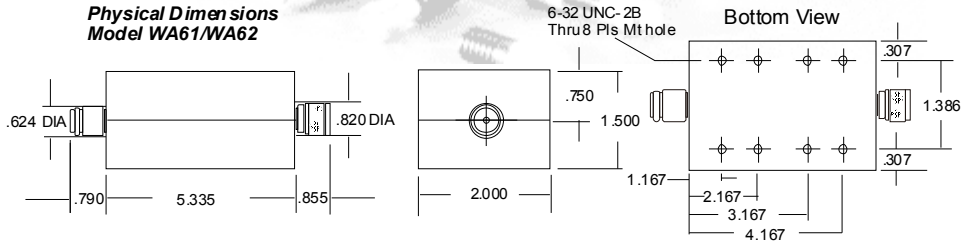
Fixed Coaxial Attenuator Model WA61 & WA62
Low-Profile Mountable

DC – 4.0 GHz WA61 **150 Watts**
DC – 8.5 GHz WA62 **150 Watts**



Features

Designed to meet MIL-DTL-3933 environmental specification. Conduction cooled.

Specifications

Nominal Impedance: 50 ohms

Frequency Range: WA61: DC - 4.0 GHz.
WA62: DC - 8.5 GHz.

Nominal dB Values: 3 - 40 dB.

Power Sensitivity: < 0.0005 dB/dB/W; Unidirectional in power.

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

Temperature Range: -55°C to +125°C.

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

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	
	WA61	WA62	WA61	WA62
3,6 10,20 30	0.4 0.4 0.4	0.4 0.4 0.4	0.75 0.75 0.75	0.75 0.75 0.75
40	0.5	0.5	1.00	1.00

Construction: Black Aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper male/female contacts.

Connectors: Type N or DIN 7/16 stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012.

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 4.0	1.20
4.0 – 8.5	1.35

Weight:

Type N	1.5 kg/ 3.3 lb.
DIN 7/16	1.7 kg/ 3.7 lb.

Physical Dimensions:

Length:

Connector	Length
Type N	174.24 (6.86)
DIN 7/16	226.0 (8.5)

Width: 50.8 (2.0).

Height: 38.1 (1.5).

Note: Dimensions are given in mm (inches) unless otherwise specified.

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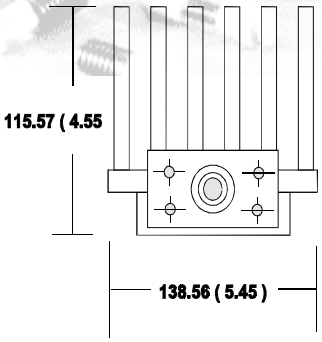
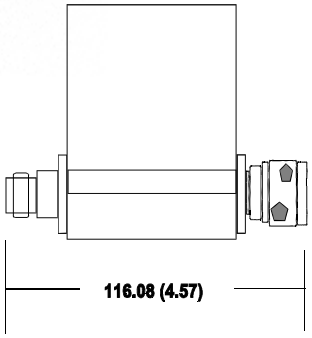
Fixed Coaxial Attenuator High Power

MODEL WA65

DC – 2.5 GHz

150 WATTS





Features

Type N or DIN 7/16 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 – 2.5 GHz.

Nominal dB Values: 6 - 30 dB.

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

Power Rating: 150 watt CW/ 10KW peak (5 µsec pulse width; 1.5% duty cycle). Maximum power into output port is 20 watts average.

Temperature Range: -55°C to 100°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
3,6,10,20,30	1.00

Construction: Black aluminum alloy body with passivated stainless steel connectors. Female gold plated beryllium copper contacts, stainless steel male contacts.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC - 2.5	1.20

Physical Dimensions:

Length: 116.08 (4.57).

Width: 138.56 (5.45).

Height: 115.57 (4.55).

Weight: .86 kg / 1.9 lbs.

Note: Dimension are given in mm (inches) and are maximum unless otherwise specified.

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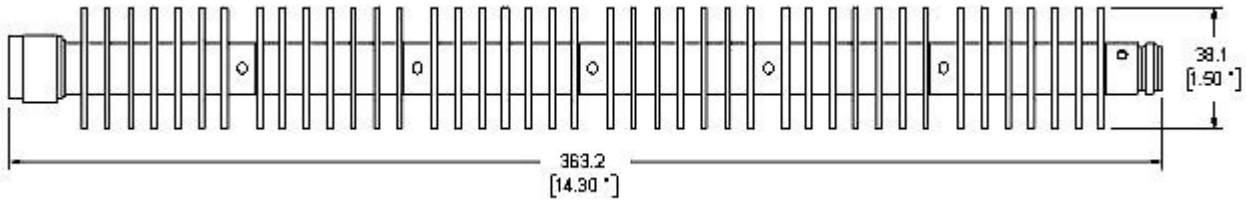
Fixed Coaxial Attenuator MODEL WA66
High Power - High Frequency

DC – 18 GHz **150 WATTS**



Features

Designed to meet the environmental requirements of MIL-DTL-3933.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC – 18 GHz.

Nominal dB Values: 10 - 40 dB.

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

Power Rating: 150 watts average. Maximum rated average power to 25°C ambient temperature, derated linearly to 10 watts at 125°C. 1 kilowatt peak (5 µsec pulse width; 5% duty cycle).

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB DC – 18.0 GHz
10	2.00
20, 30, 40	1.50

Temperature Range: -55°C to +125°C.

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

Connectors: Type N female/male connectors per MIL-STD-348 interface dimension, mate non-destructively with MIL-PRF-39012 connectors.

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

Construction: Black aluminum alloy body with stainless steel connectors; gold plated beryllium copper female contact and stainless steel male contacts.

Maximum VSWR:

Frequency (GHz)	VSWR 10 dB	VSWR 20,30,40 dB
DC – 18.0	1.90	1.50

Length:

Connector	Dimension A
Type N	363.5 (14.3)

Weight: 510 g/ 18 oz.

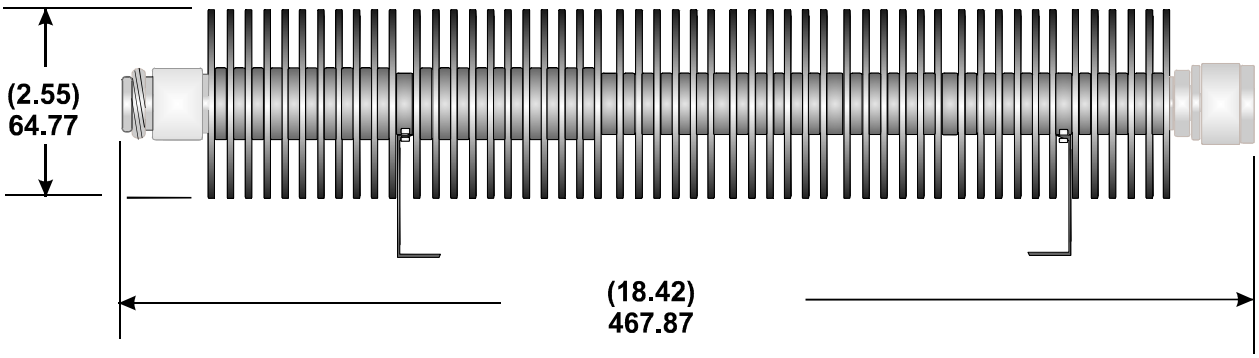
Note: Dimensions are given in mm (inched). Dimensions are maximum unless otherwise specified.

Fixed Coaxial Attenuator
High Power - High Frequency

Model WA67

DC – 12.7 GHz

350 WATTS



Features

High power combined with high frequency response. Designed to meet the environmental requirements of MIL-DTL-3933. Convection cooling.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC – 12.7 GHz.

Nominal dB Values: 10, 20, and 30 dB.

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

Power Rating: 350 watts average. Maximum rated average power @ 25°C ambient temperature, derated linearly to 10 watts at 100°C. (*Case temperature must be held to 100°C maximum*), 5 kilowatts peak (5 µsec pulse width; 3.5% duty cycle).

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	DC - 8.0 GHz	8.0 – 12.7 GHz
10	2.00	+6.00 / -0.00
20, 30	2.50	+ 5.00 / -0.00

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

Temperature Range: -25° C to 100° C.

Connectors: Type N connectors per MIL-STD-348 interface dimensions mate nondestructively with MIL-PRF-39012 connectors.

Construction: Aluminum alloy body, stainless steel connectors, gold plated beryllium copper female contacts, stainless steel male contacts. Optional mounting stands.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 8.0	1.30
8.0—12.7	1.60

Weight: 123 g (44 oz).

Length: 467.87 (18.42).

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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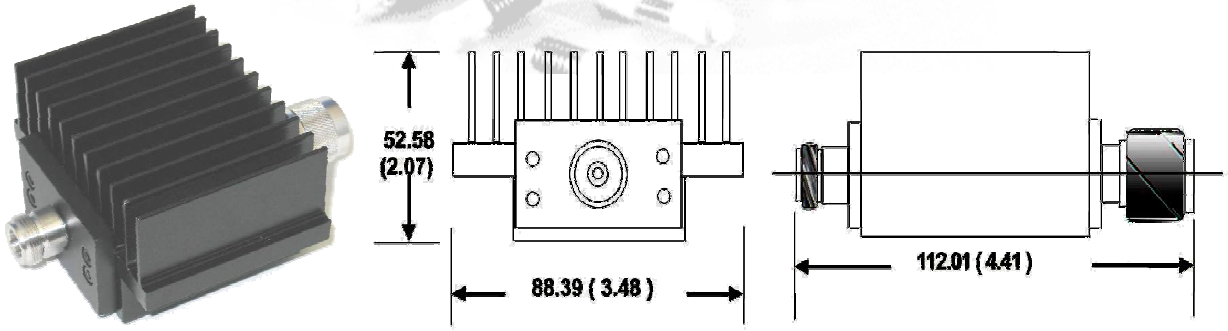
Fixed Coaxial Attenuator High Power

MODEL 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. Unit may be mounted in any position. Mounting holes provided on bottom of unit.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC - 6.0 GHz.

Nominal dB Values: 1 - 30 dB.

Power Sensitivity: < 0.0005 dB/dB/W; Unidirectional in power.

Power Rating: 100 watts average. Maximum rated average power to 25°C ambient temperature, derated linearly to 10 watts at 125°C. 10 kilowatt peak (5 µsec pulse width; 0.5% duty cycle).

Temperature Range: -55°C to +125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC - 6.0 GHz
1,2	1.20
3,6,10,20,30	1.25

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

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 6.0	1.30

Weight:

Type N	1.5 kg/ 3.3 lb.
DIN 7/16	1.7 kg/ 3.7 lb.

Physical Dimensions:

Length:

Connector	Length
Type N	112.1 (4.4)
DIN 7/16	139.7 (5.5)

Width: 89.0 (3.5).

Height: 54.0 (2.1).

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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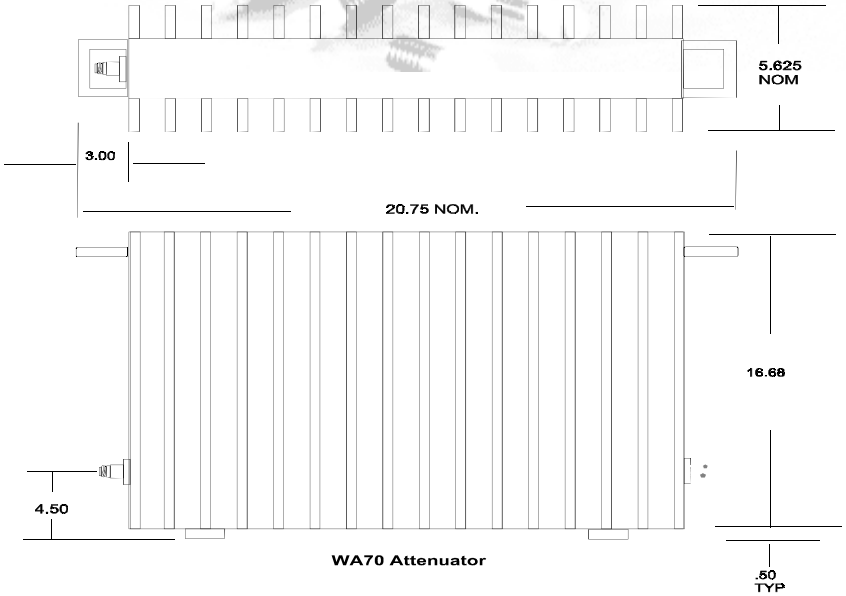
Fixed Coaxial Attenuator MODEL WA70
Ultra-High Power

DC – 2.5 GHz (Usable to 3.0 GHz) 1000 WATTS



Features

Designed to meet environmental requirements of MIL-D-39030. Type N or DIN 7/16 connectors. Natural convection cooling (*Air flow should not be obstructed around unit*)

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC – 2.5 GHz.
Usable to 3.0 GHz.

Operating Position: Horizontal.

Nominal dB Value: 20, 30, 40dB.

Power Rating: 1,000 watts average to 25° C ambient temperature, derated linearly to 100 watts @ 125° C (5 µsec pulse width; 0.5% duty cycle). 10 kilowatt peak. Unidirectional in power.

Power Sensitivity: <0.0001 dB/dB/W.

Temperature: -55° C to +125° C.

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

Temperature Sensitivity: <0.0004 dB/dB/°C.

Connectors: Type N stainless steel mate non-destructively with MIL-PRF-39012 connector or DIN 7/16 connector, conforms to DIN 47223, IEC 169-4, VG 95250, CECC 22190.

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 2.5	1.35

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy (dB)
	DC - 2.5 GHz
20, 30, 40	+0.5 / –1.5

Physical Dimensions:

Length	527 / (20.75) nom.
Width	143 / (5.625) nom.
Height	437 / (17.20) max.
Weight	20.41 kg/ 45 lbs

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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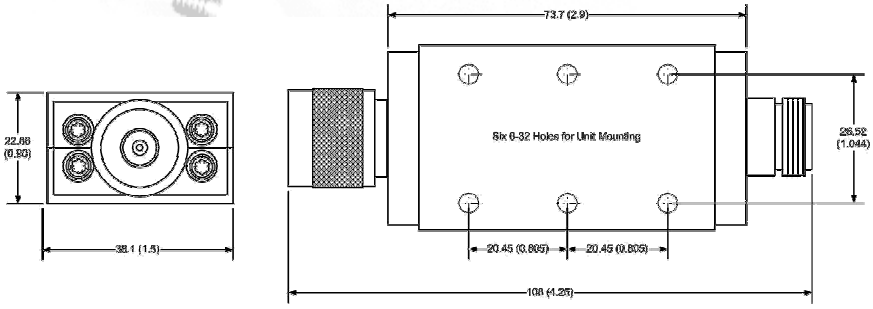
Fixed Coaxial Attenuator Low-Profile Mountable

MODEL WA71

DC – 4.0 GHz Bi-directional

50 WATTS



Features

Designed to comply with MIL-DTL-3933. Bidirectional in power. Conductive Cooling. Flat base with mounting holes.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC – 4.0 GHz.

Nominal dB Value: 1 – 40 dB.

Power: 50W average bi-directional, Peak power of 5Kw; 5 µsec pulse width; 0.5% duty cycle, with case temperature held to +100°C maximum using conductive heat sink.

Power Sensitivity: < 0.005 dB/dB/W.

Temperature Range: -55°C to 125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC – 4.0 GHz
1 - 40	0.40

Connectors: Type N or SMA stainless steel M/F connectors per MIL-STD-3448A, interface dimensions mate nondestructively with MIL-PRF-39012.

Construction: Black Aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper male/female contacts.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 4.0	1.20

Weight: .14 kg/5 oz.

Physical Dimensions:

Length:

Connector	Length
Type N	120.7 (4.3)
SMA	104.2 (4.1)

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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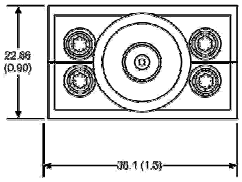
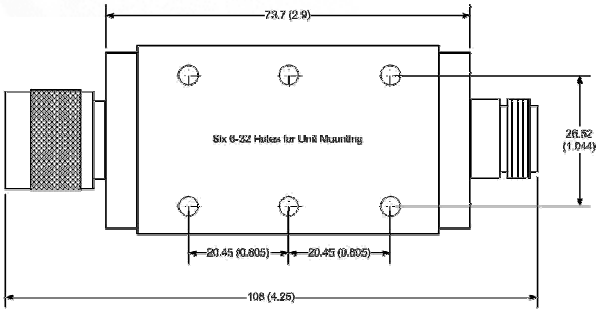
Fixed Coaxial Attenuator
Low-Profile Mountable

MODEL WA72

DC – 8.5 GHz
Bi-directional

50 WATT





Features

Designed to comply with MIL-DTL-3933.

Bidirectional in power.

Conductive Cooling.

Flat base with mounting holes.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC – 8.5 GHz.

Nominal dB Value: 1 – 40 dB.

Power: 50W CW average bi-directional to 25°C; Peak power of 5KW; 5 µsec pulse width; 0.5% duty cycle, with case temperature held to +100°C maximum using conductive heat sink.

Power Sensitivity: < 0.005 dB/dB/W.

Temperature Range: -55°C to 125°C.

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

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	DC – 4.0 GHz	4.0 – 8.5 GHz
1 - 40	0.40	0.75

Connectors: Type N or SMA stainless steel M/F connectors per MIL-STD-3448A, interface dimensions mate nondestructively with MIL-PRF-39012.

Construction: Black Aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper male/female contacts.

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

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 4.0	1.20
4.0 – 8.5	1.30

Weight: .14 kg/5 oz.

Physical Dimensions:

Length:

Connector	Length
Type N	120.7 (4.3)
SMA	104.2 (4.1)

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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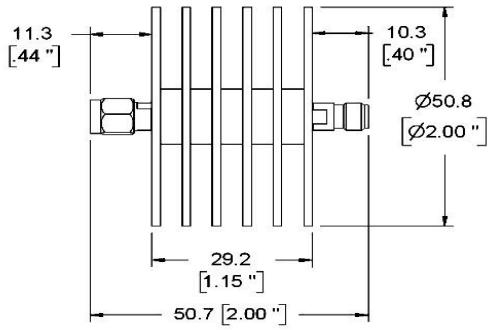
Fixed Coaxial Attenuator 3.5mm Connectors

MODEL WA74

DC – 26.5 GHz

25 WATTS



Features

Designed to meet MIL-DTL-3933 environmental specification. Compact construction to meet a wide range of design requirements.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC -26.5 GHz.

Nominal dB Values: 3 - 30 dB.

Power Sensitivity: < 0.0015 dB/dB/W.

Power Rating: 25W CW / 500W peak to 25°C ambient temperature, derated linearly to 2.5 watts at 125°C, 500 watt peak (5 µsec pulse width; 2.5% duty cycle). Power rating into output is 10% of the average power rating.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC – 26.5 GHz
3	0.70
6, 10	1.00
20, 30	1.50

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

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

Temperature Range: -55°C to +125°C.

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

Connectors: 3.5mm stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012.

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 18.0	1.25
18.0 – 26.5	1.30

Weight:

100g / 3.5 oz.

Physical Dimensions:

Length:

Connector	Length
3.5mm M/F	50.7 (2.00)

Diameter: **50.8 (2.00).**

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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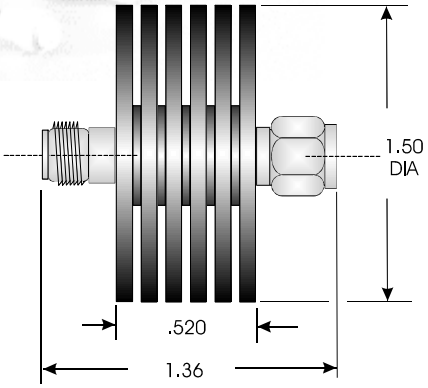
Fixed Coaxial Attenuator MODEL WA75

DC – 40.0 GHz Bi-directional

5 WATTS



Features

► **Compact Construction –** Low size/power ratio.

► **Precision 2.92mm connectors.**

► **Flat Response.**

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC to 40.0 GHz.

Nominal dB Values: 3, 6, 10, 20, 30 dB.

Power Rating: 5 watts average (bi-directional) to 25°C ambient temperature, derated linearly to 0 Watts @ 125°C. 200 watts peak (5 µsec pulse width; 1.25% duty cycle).

Power Sensitivity: <0.005 dB/dB/W.

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

Temperature Range: -55°C to 125°C.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	DC – 18.0 GHz	18.0 – 40.0 GHz
3	0.50	1.00
6, 10, 20, 30	0.80	1.50

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

Connectors: 2.92mm (Male/Female) connectors – mate nondestructively with SMA per MIL-PRF-39012, 3.5mm and other 2.92mm connectors.

Construction: Black finned aluminum alloy body. Stainless steel connector body with gold plated beryllium copper contacts.

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 18.0	1.20
18.0 – 40.0	1.35

Physical Dimensions:

Length: 34.54 (1.36).

Diameter: 38.10 (1.50).

Weight: 0.06kg / 2.0 oz.

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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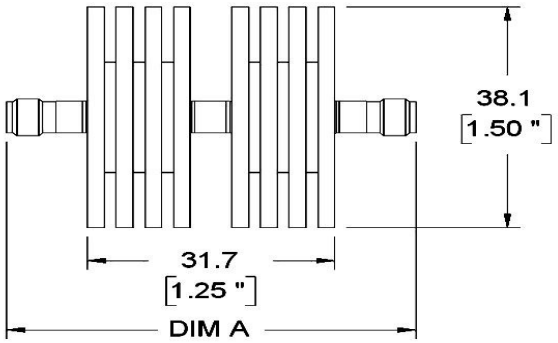
Fixed Coaxial Attenuator MODEL WA76

DC – 40.0 GHz 10 WATTS



Features

► **Compact Construction –** Low size/power ratio.

► **Precision 2.92mm connectors.**

► **Flat Response.**

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC to 40.0 GHz.

Nominal dB Values: 6, 10, 20, 30 dB.

Power Rating: 10 watts average to 25°C ambient temperature, derated linearly to 0 Watts @ 125°C. 200 watts peak (5 µsec pulse width; 1.25% duty cycle).

Power Sensitivity: <0.005 dB/dB/W.

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

Temperature Range: -55°C to 125°C.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	DC – 18.0 GHz	18.0 – 40.0 GHz
6, 10, 20, 30	1.00	1.75

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

Connectors: 2.92mm (Male/Female) connectors – mate nondestructively with SMA per MIL-PRF-39012, 3.5mm and other 2.92mm connectors.

Construction: Black finned aluminum alloy body. Stainless steel connector body with gold plated beryllium copper contacts.

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 18.0	1.25
18.0 – 40.0	1.40

Physical Dimensions:

Length:

Connector	Dimension A
2.92mm M/F	68.6 (2.7)
2.92mm M/M	71.1 (2.8)
2.92mm F/F	66.1 (2.6)

Diameter: 38.10 (1.50).

Weight: 145g (5 oz) maximum

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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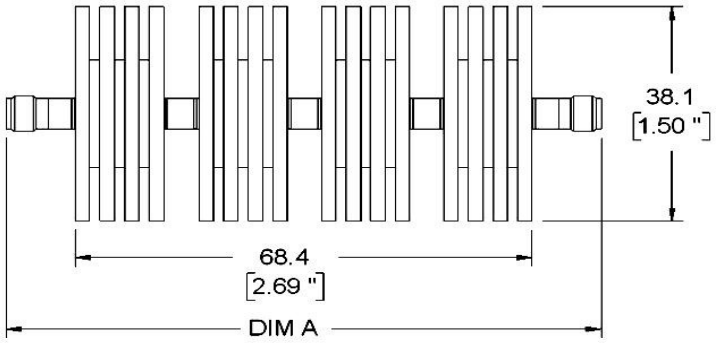
Fixed Coaxial Attenuator MODEL WA89

DC – 40.0 GHz 20 WATTS



Features

► **Compact Construction –** Low size/power ratio.

► **Precision 2.92mm connectors.**

► **Flat Response.**

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC to 40.0 GHz.

Nominal dB Values: 10, 20, 30 dB.

Power Rating: 20 watts average to 25°C ambient temperature, derated linearly to 0 Watts @ 125°C. 200 watts peak (5 µsec pulse width; 1.25% duty cycle).

Power Sensitivity: <0.005 dB/dB/W.

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

Temperature Range: -55°C to 125°C.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	DC – 18.0 GHz	18.0 – 40.0 GHz
10, 20, 30	1.25	+2.5 / -0.0

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

Connectors: 2.92mm (Male/Female) connectors – mate nondestructively with SMA per MIL-PRF-39012, 3.5mm and other 2.92mm connectors.

Construction: Black finned aluminum alloy body. Stainless steel connector body with gold plated beryllium copper contacts.

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 18.0	1.25
18.0 – 40.0	1.40

Physical Dimensions:

Length:

Connector	Dimension A
2.92mm M/F	106.7 (4.2)
2.92mm M/M	109.2 (4.3)
2.92mm F/F	104.2 (4.1)

Diameter: 38.10 (1.50).

Weight: 200g (7.1oz) maximum

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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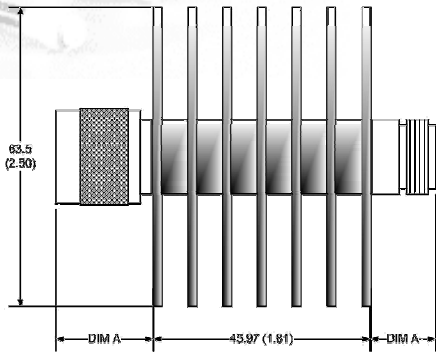
Fixed Coaxial Attenuator MODEL WA90
High Power - High Frequency

DC – 18.0 GHz 50 WATTS
Bi-directional



Features

Designed to meet MIL-DTL-3933 environmental specification. Compact construction to meet a wide range of design requirements.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC -18.0 GHz.

Nominal dB Values: 3 - 40 dB.

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

Power Rating: 50W CW/ 1 KW peak to 25°C ambient temperature, derated linearly to 5 watts at 125°C, 1 kilowatt peak (5 µsec pulse width; 2.5% duty cycle).

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC – 18.0 GHz
3, 6, 10	0.50
20	0.75
30, 40	1.00

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

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

Temperature Range: -55°C to +125°C.

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

Connectors: Type N or SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012.

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 8.0	1.20
8.0 – 12.4	1.25
12.4 – 18.0	1.35

Weight:

Type N	0.18 kg/ 6.1 oz.
SMA	0.16 kg/ 5.7 oz.

Physical Dimensions:

Length:

Connector	Length
Type N	19.1 (0.75)
SMA	15.3 (0.6)

Diameter: 63.50 (2.50).

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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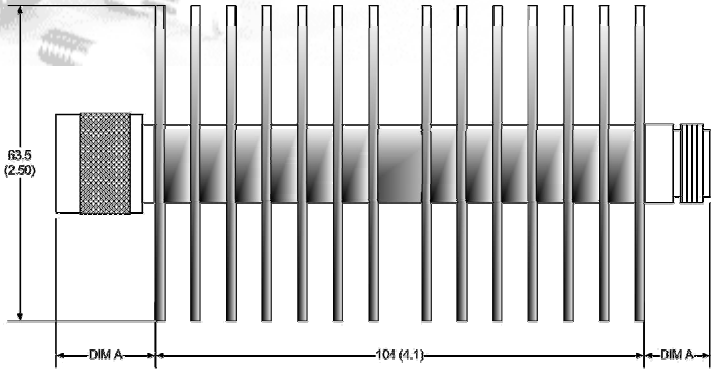
Fixed Coaxial Attenuator MODEL WA91
High Power - High Frequency

DC – 18.0 GHz **100 WATTS**



Features

High power combined with high frequency response to cover a wide range of design requirements. Designed to meet MIL-DTL-3933 environmental specifications.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC -18.0 GHz.

Nominal dB Values: 10 - 40 dB.

Power Sensitivity: < 0.005 dB/dB/W.

Power Rating: 100W CW/ 1 KW peak to 25°C ambient temperature, derated linearly to 10 watts at 125°C, 1 kilowatt peak (5 µsec pulse width; 2.5% duty cycle). Unidirectional in power.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC – 18.0 GHz
10	0.75
20	1.00
30, 40	1.20

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

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. Gold plated beryllium copper contacts.

Connectors: Type N or SMA stainless steel M/F connectors per MIL-STD-348A, interface dimensions mate nondestructively with MIL-PRF-39012.

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 8.0	1.20
8.0 – 12.4	1.25
12.4 – 18.0	1.35

Weight:

Type N	0.33kg / 12 oz.
SMA	0.30 kg / 10.5 oz.

Length:

Connector	Length
Type N	24.1 (0.95)
SMA	30.1 (1.23)

Diameter: 63.50 (2.50).

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

TEL: 877.948.8342 / 301.963.4630 ♦ Fax: 301.963.8640
WEB: http://www.WeinschelAssociates.com
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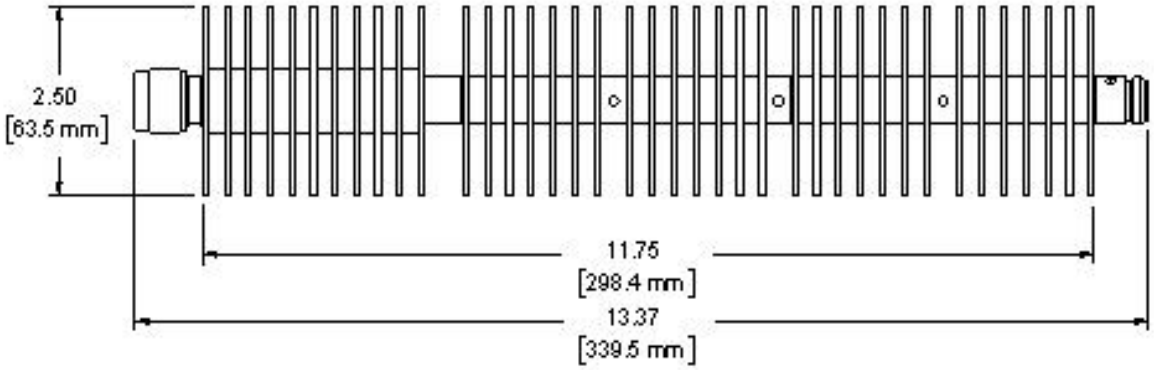
Fixed Coaxial Attenuator
High Power - High Frequency

Model WA95

DC – 18.0 GHz **200 WATTS**



Features

High power combined with high frequency response to cover a wide range of design requirements. Designed to meet MIL-DTL-3933 environmental specifications.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC – 18.0 GHz

Nominal dB Values: 10, 20, 30, 40 dB.

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

Power Rating: 200 Watts CW/1 kW peak (5 µsec pulse width; 3.5% duty cycle) to 25°C ambient temperature, derated linearly to 20 watts at 100°C.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB	
	DC - 8.0 GHz	8.0 – 18.0 GHz
10	1.50	+3.00 / -1.00
20, 30	2.00	+ 3.00 / -2.00
40	2.00	+ 3.00 / -2.00

Temperature Range: -55° C to 100°C.

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

Connectors: Type N connectors per MIL-STD-348A interface dimensions mate nondestructively with MIL-PRF-39012 connectors.

Construction: Aluminum alloy body, stainless steel connectors, gold plated beryllium copper contacts.

Maximum VSWR:

Frequency (GHz)	VSWR
DC – 18.0	1.50

Physical Dimensions:

Length: 339.5 (13.4)

Diameter: 63.50 (2.50).

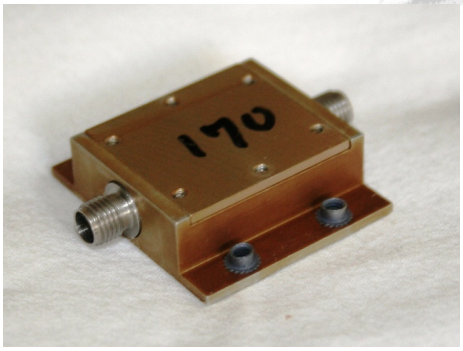
Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified.

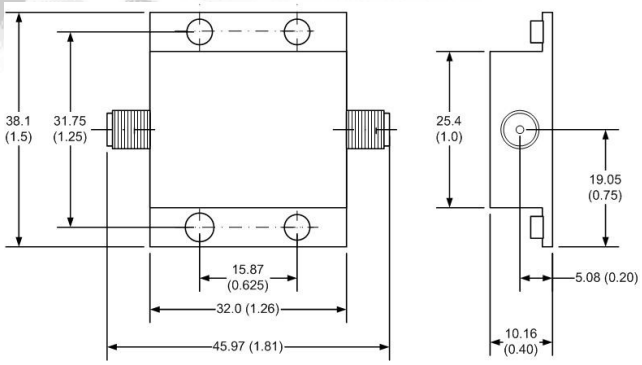
Fixed Coaxial Attenuator Low-Profile/Flange Mount

MODEL WA200271

DC – 3.0 GHz

10 WATTS





Features

SMA, stainless steel, F/F connectors per MIL-STD-348A, interface dimensions mate nondestructively per MIL-PRF-39012.

Designed and tested to meet the standards of MIL-DTL-3933. Additional dB values available upon request.

Specifications

Nominal Impedance: 50 ohms.

Frequency Range: DC – 3.0 GHz.

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

Power Rating (over temperature):

10 W CW
800 W pk, 33 microsec pulse width, 1% Duty Cycle.
1.8 kW pk, 1 microsec pulse width, .025% Duty Cycle.

Standard Nominal Values and Deviations:

Attenuation (dB)	Accuracy ± dB
	DC – 3.0 GHz
3	0.25

Temperature Range:

-65°C to +125°C, Storage.
-54°C to +95°C, Operating.

Temperature Coefficient: < 0.0004 dB/dB/°C

Construction: Gold Irridite aluminum alloy body with passivated stainless steel connectors. Gold plated beryllium copper contacts.

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

Maximum VSWR:

Frequency (GHz)	VSWR 3 dB
DC – 3.0	1.40

Weight: 0.14 kg/5 oz max.

Physical Dimensions:

45.97 x 38.1 x 10.16 mm.
1.81 x 1.50 x 0.40 inches.

Mounting: Flange mount with four (4) 4-40 self-clinching fasteners.

Note: Dimensions are given in mm (inches) and are maximum, unless otherwise specified

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