COAXIAL

Precision Fixed Attenuator BW-N10W50+

50Ω 50 W 10 dB DC to 18 GHz N-Type Male to N-Type Female

THE BIG DEAL

- DC to 18 GHz
- High Power Handling, 50 W
- Excellent VSWR, 1.30:1 Typ.
- Passivated Stainless Steel N-Type Connectors
- Unidirectional

Generic photo used for illustration purposes only

APPLICATIONS

- Impedance Matching
- Instrumentation
- Test Setups
- High Power Measurements

Model No.	BW-N10W50+
Case Style	GH1788
Connectors	N-Type Male to N-Type Female

+RoHS Compliant
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

PRODUCT OVERVIEW

Mini-Circuits' BW-N10W50+ 10 dB precision fixed attenuator achieves great flatness versus frequency from DC to 18 GHz and handles high power signals up to 50 W. High power handling, excellent VSWR, and precise performance make the BW-N10W50+ ideal for applications including high-power measurements, improving matching, test setups, and other applications requiring accurate attenuation and high power capability.

KEY FEATURES

Feature	Advantages
Wide Frequency Range	DC to 18 GHz frequency range provides the BW-N10W50+ attenuator versatile application functionality.
Excellent VSWR, 1.30:1 Typ.	Well-matched for 50Ω systems; reduces effects of phase variation.
Flat Attenuation	Accurate performance within ±0.5 dB over the full frequency range.
Rugged Construction	Excellent durability for a long lifetime of use.
Heat Dissipation Fins	Designed to dissipate heat efficiently, the BW-N10W50+ requires no external cooling equipment.
Compact Size (2.65 × 2.65 × 4.5")	Outstanding performance capability and power handling without prohibitive space constraints.

REV. B
ECO-024522
BW-N10W50+
MCL NY
260811

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50Ω 50 W 10 dB DC to 18 GHz N-Type Male to N-Type Female

ELECTRICAL SPECIFICATIONS AT +25 °C

Parameter		Condition (GHz)	Min.	Typ.	Max.	Unit
Frequency Range			DC		18	GHz
Attenuation		DC–18	9.0	10.0	11.0	dB
VSWR	IN	DC–18	–	–	1.45	:1
	OUT	DC–18	–	–	1.5	
Input Power[1]		DC–18	–	–	50	W

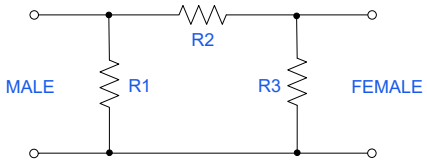
1. Max. power at +25 °C ambient, derate linearly to 20 W at +100 °C. Peak power 500 W Max. 5 µsec. pulse width, 100 Hz PRF, input N-Type Male. 5 W max. at N-Type Female.

ABSOLUTE MAXIMUM RATINGS[2]

Parameter	Ratings
Operating Temperature[3]	-55 °C to +100 °C
Storage Temperature	-55 °C to +100 °C

2. Permanent damage may occur if any of these limits are exceeded.
3. +85 °C with output into open or short.

ELECTRICAL SCHEMATIC



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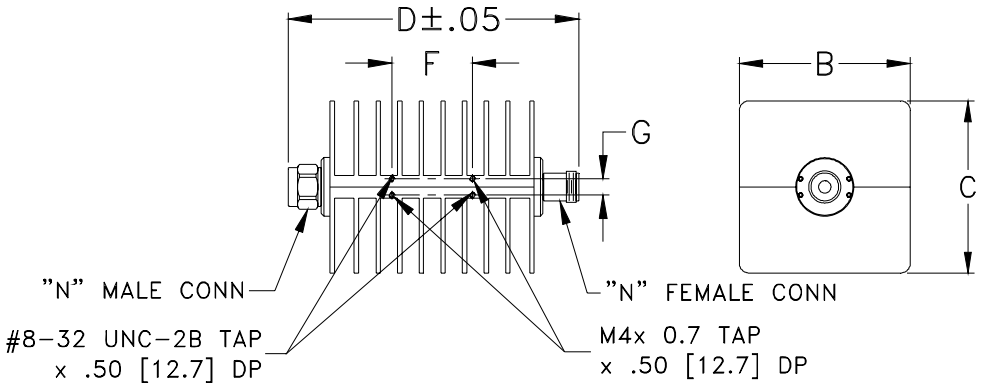
OUTLINE DRAWING



OUTLINE DIMENSIONS (Inch / mm)

B	C	D	E	F	G	wt.
2.65	2.65	4.50	--	1.25	.25	grams
67.31	67.31	114.30	--	31.75	6.35	720.0

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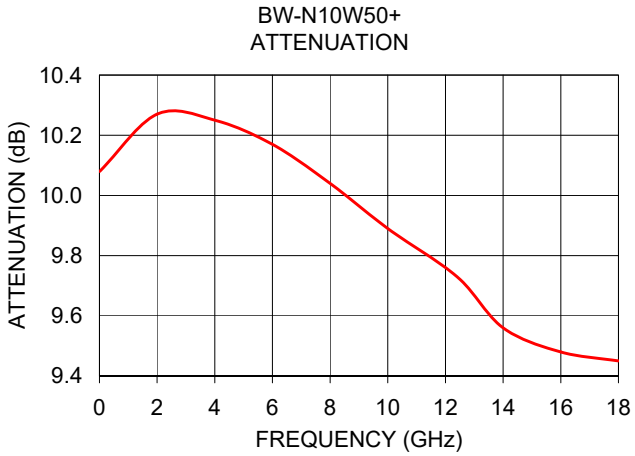
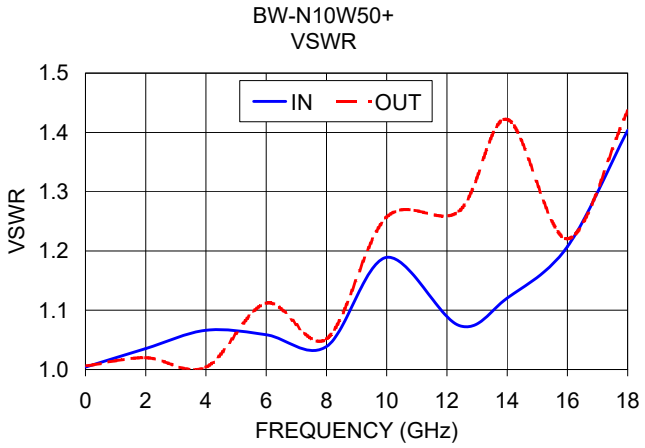
TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (GHz)	Attenuation (dB)	VSWR (:1) IN	VSWR (:1) OUT
0.01	10.1	1.00	1.01
2.0	10.3	1.04	1.02
4.0	10.3	1.07	1.00
6.0	10.2	1.06	1.11
8.0	10.0	1.04	1.05
10.0	9.9	1.19	1.26
12.4	9.7	1.07	1.27
14.0	9.6	1.12	1.42
16.0	9.5	1.21	1.22
18.0	9.5	1.40	1.44





NOTES

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits' standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html

Fixed Attenuator BW-N10W50+

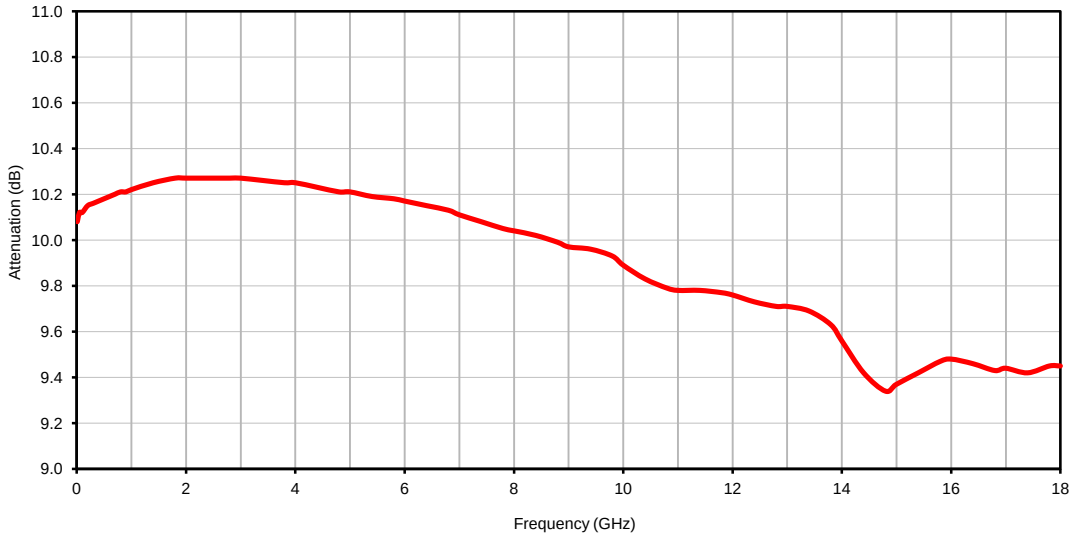
Typical Performance Data

FREQUENCY (GHz)	ATTENUATION (dB)	VSWR (:1)
0.01	10.08	1.00
0.05	10.12	1.00
0.1	10.12	1.00
0.2	10.15	1.00
0.3	10.16	1.00
0.4	10.17	1.01
0.5	10.18	1.01
0.6	10.19	1.02
0.7	10.20	1.02
0.8	10.21	1.02
0.9	10.21	1.03
1.0	10.22	1.03
1.4	10.25	1.04
1.8	10.27	1.04
2.0	10.27	1.04
2.4	10.27	1.04
2.8	10.27	1.05
3.0	10.27	1.05
3.4	10.26	1.04
3.8	10.25	1.06
4.0	10.25	1.07
4.4	10.23	1.06
4.8	10.21	1.03
5.0	10.21	1.01
5.4	10.19	1.03
5.8	10.18	1.06
6.0	10.17	1.06
6.4	10.15	1.02
6.8	10.13	1.04
7.0	10.11	1.05
7.4	10.08	1.04
7.8	10.05	1.02
8.0	10.04	1.04
8.4	10.02	1.07
8.8	9.99	1.06
9.0	9.97	1.06
9.4	9.96	1.09
9.8	9.93	1.15
10.0	9.89	1.19
10.4	9.83	1.22
10.8	9.79	1.15
11.0	9.78	1.10
11.4	9.78	1.02
11.8	9.77	1.03
12.0	9.76	1.05
12.4	9.73	1.07
12.8	9.71	1.11
13.0	9.71	1.13
13.4	9.69	1.14
13.8	9.63	1.12
14.0	9.56	1.12
14.4	9.42	1.22
14.8	9.34	1.32
15.0	9.37	1.32
15.4	9.42	1.29
15.8	9.47	1.24
16.0	9.48	1.21
16.4	9.46	1.10
16.8	9.43	1.13
17.0	9.44	1.20
17.4	9.42	1.34
17.8	9.45	1.41
18.0	9.45	1.40

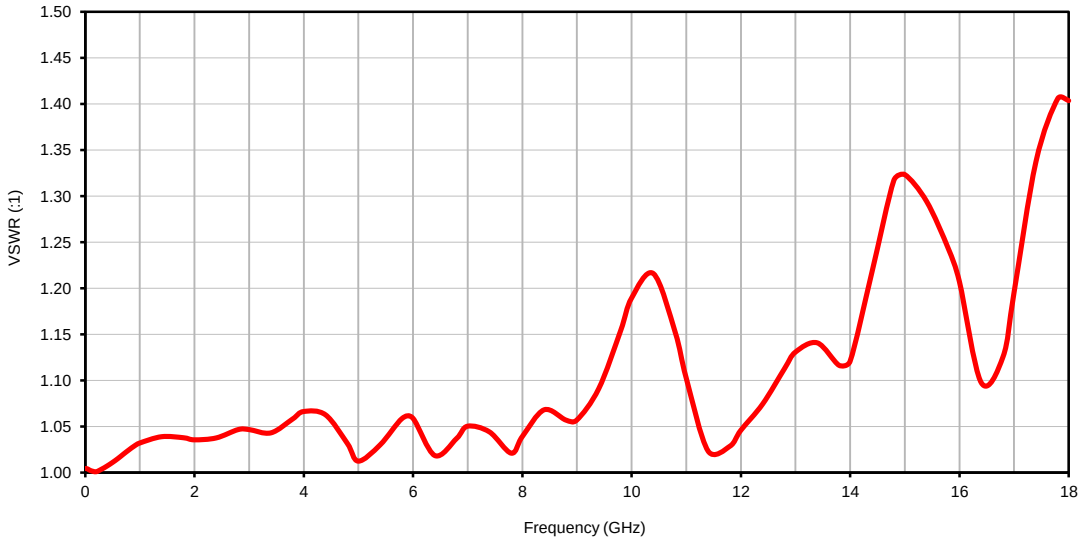
Fixed Attenuator BW-N10W50+

Typical Performance Curves

Attenuation

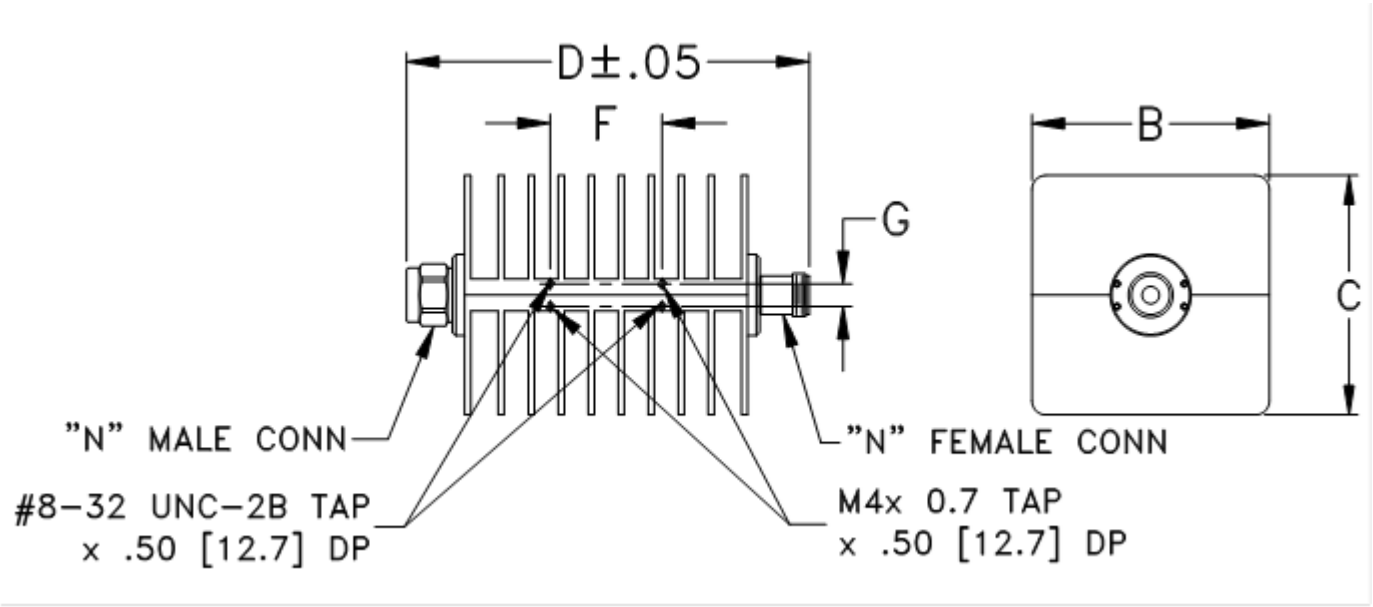


VSWR



Case Style GH

Outline Dimensions GH1788



CASE #.	A	B	C	D	E	F	G	H	J	WT. GRAM
GH1788	-- --	2.65 (67.31)	2.65 (67.31)	4.50 (114.30)	-- --	1.25 (31.76)	.25 (6.35)	-- --	-- --	720

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015

Notes:

1. Case Material: Aluminum alloy.
2. Case finish: Black anodize.

Mini-Circuits®
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Environmental Specifications ENV28

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I

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