

# Coaxial N-Type Fixed Attenuator

## BW-30N100W+

50Ω 100W 30dB DC to 6000 MHz

### The Big Deal

- Wideband operation, DC to 6 GHz
- High power handling, 100W
- Good flatness,  $\pm 0.65$  dB typ.



CASE STYLE: GH986

### Product Overview

Mini-Circuits' BW-30N100W+ is a 30 dB coaxial precision fixed attenuator providing high-power handling of up to 100W over the DC to 6 GHz frequency range. This model supports many high-power applications requiring precise attenuation over a broad frequency range including high-power measurement, matching, instrumentation, and more. It provides good VSWR (1.25 typ.), outstanding attenuation flatness ( $\pm 0.65$  dB) and excellent thermal stability from -55 to 100°C. It features rugged construction with N-male to N-female connectors and heat dissipation fins for efficient cooling.

### Key Features

Feature	Advantages
Wideband operation, DC to 6 GHz	Wide frequency range makes the BW-30N100W+ suitable for a wide variety of applications.
High power handling to 100W	Supports high-power test lab and system applications including high-power measurement, matching, instrumentation, and more.
Good VSWR, 1.25:1 typ.	Well-matched for 50Ω systems; reduces effects of phase variation.
Good flatness, $\pm 0.65$ dB	Provides consistent attenuation performance across the entire frequency band.
Excellent thermal stability, -55 to 100°C	Designed with heat dissipation fins for efficient cooling, the BW-20N100W+ provides reliable performance without the need for external cooling equipment.
Compact size (3.46 x 3.46 x 6.36")	Outstanding performance capability and power handling with minimal space requirements.

#### 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-Circuit's 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/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



Coaxial

# N-Type Fixed Attenuator

50Ω 100W 30dB DC to 6000 MHz

Operating Temperature -55°C to 100°C

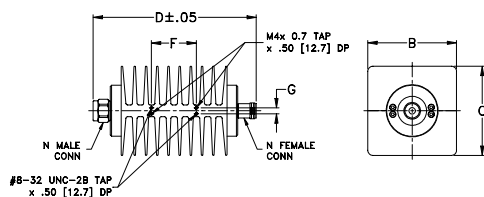
Storage Temperature -55°C to 125°C

Peak Power\* 1K Watt

\* 5μ second pulse 0.05% duty cycle.

Permanent damage may occur if any of these limits are exceeded.

## Outline Drawing



## Outline Dimensions (inch/mm)

B	C	D	E	F	G	wt.
3.46	3.46	6.36	--	1.75	.23	grams
87.88	87.88	161.54	--	44.45	5.84	1100.0

## Features

- wideband, DC to 6000 MHz
- excellent VSWR, 1.25:1
- N-Male and N-Female connectors

## Applications

- matching
- instrumentation
- test set-ups

# BW-30N100W+



CASE STYLE: GH986

Connectors Model  
N-Male-N-Fem BW-30N100W+

**+RoHS Compliant**

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

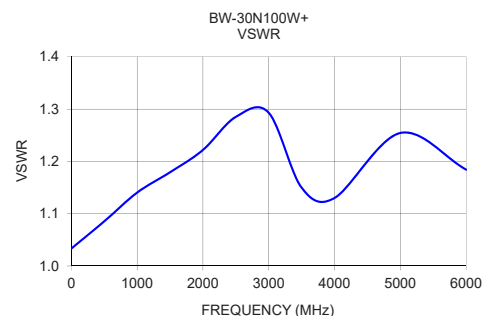
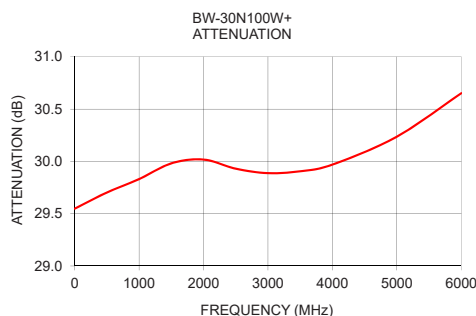
## Electrical Specifications at 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		DC	—	6000	MHz
Attenuation	DC - 6000	28.5	30	31.5	dB
VSWR	DC - 2500	—	1.15	1.35	:1
	2500 - 6000	—	1.30	1.45	
Input Power (Male) <sup>1</sup>	DC - 6000	—	—	100	W
Input Power (Female)	DC - 6000	—	—	20	W

1. Derate linearly to 20 Watt at 100°C.

## Typical Performance Data

Frequency (MHz)	Attenuation (dB)	VSWR (:1)
0.3	29.55	1.03
500.0	29.70	1.09
1000.0	29.83	1.14
1500.0	29.98	1.18
2000.0	30.02	1.22
2500.0	29.93	1.29
3000.0	29.89	1.29
3500.0	29.91	1.15
4000.0	29.97	1.13
5000.0	30.24	1.25
6000.0	30.65	1.18



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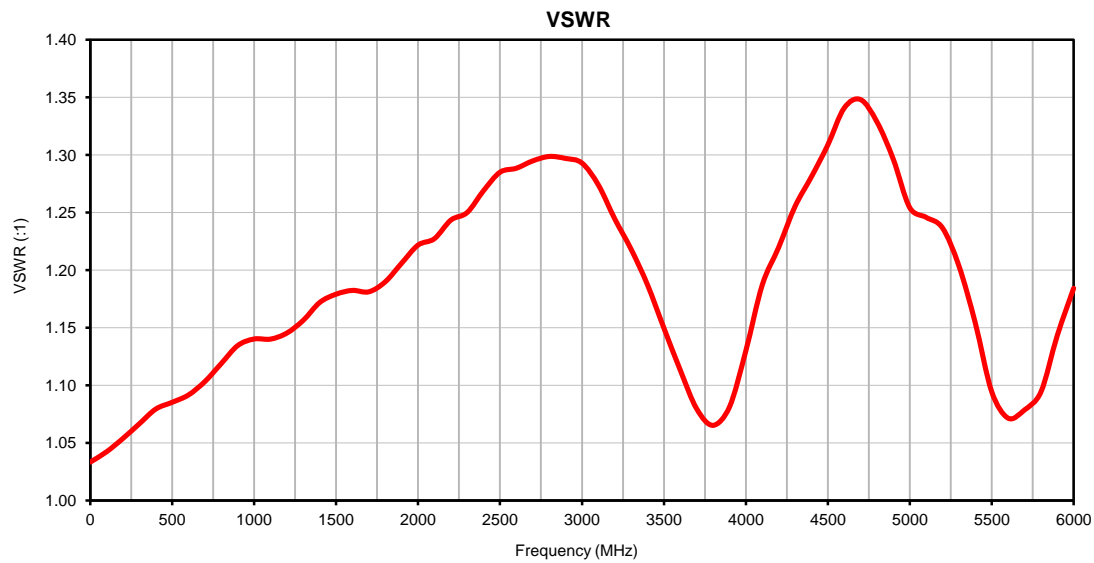
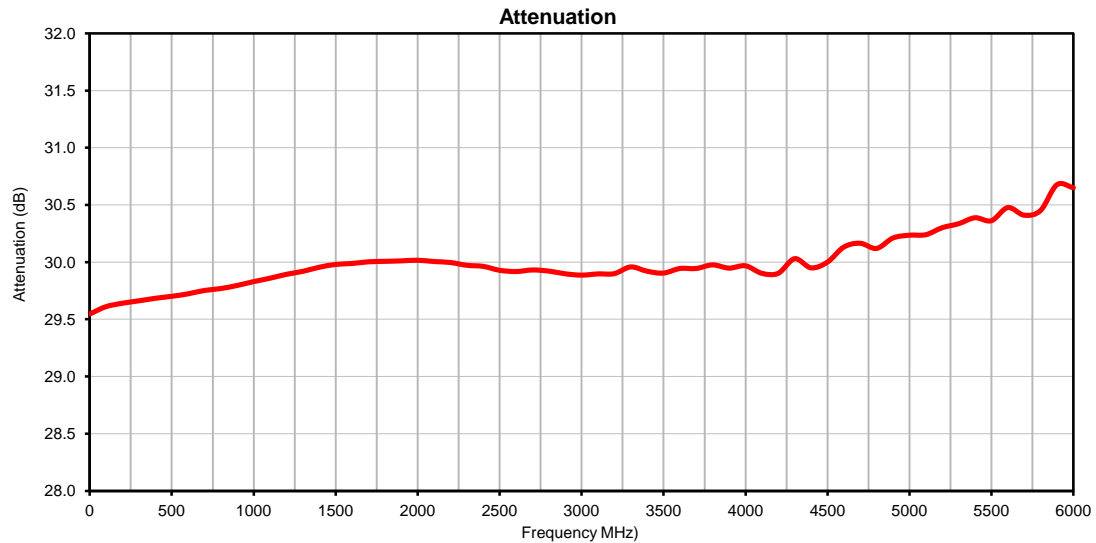


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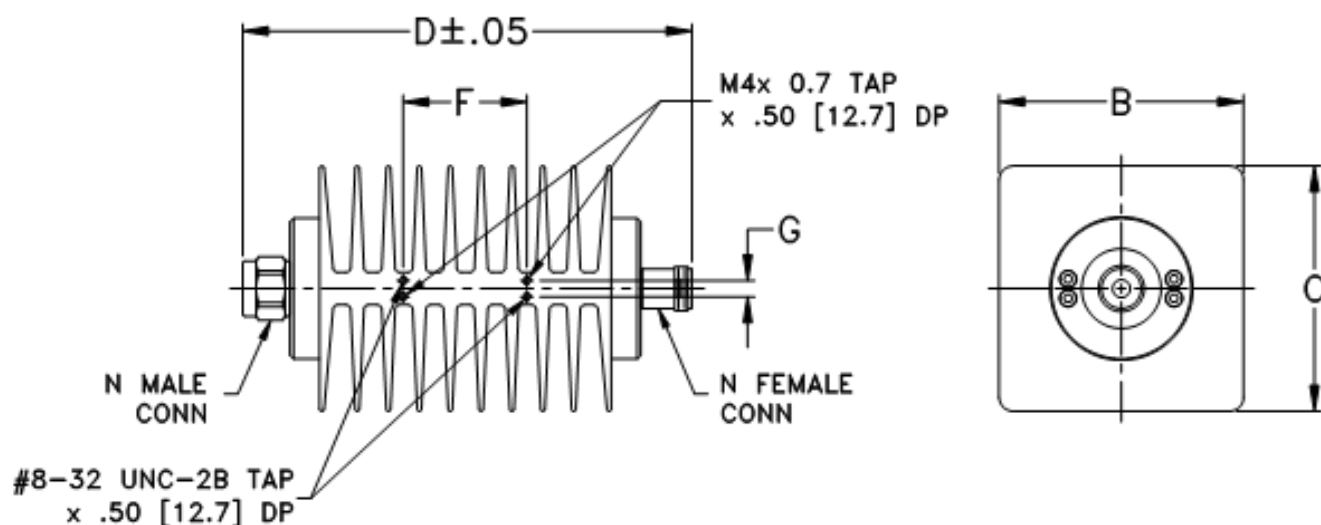
*Typical Performance Data*

FREQUENCY (MHz)	ATTENUATION (dB)	VSWR (:1)
0.3	29.55	1.03
100	29.61	1.04
200	29.64	1.05
300	29.66	1.07
400	29.69	1.08
500	29.70	1.09
600	29.72	1.09
700	29.75	1.10
800	29.77	1.12
900	29.80	1.13
1000	29.83	1.14
1100	29.86	1.14
1200	29.89	1.15
1300	29.92	1.16
1400	29.96	1.17
1500	29.98	1.18
1600	29.99	1.18
1700	30.00	1.18
1800	30.01	1.19
1900	30.01	1.21
2000	30.02	1.22
2100	30.01	1.23
2200	30.00	1.24
2300	29.97	1.25
2400	29.96	1.27
2500	29.93	1.29
2600	29.92	1.29
2700	29.93	1.29
2800	29.92	1.30
2900	29.90	1.30
3000	29.89	1.29
3100	29.90	1.27
3200	29.90	1.24
3300	29.96	1.22
3400	29.92	1.19
3500	29.91	1.15
3600	29.95	1.11
3700	29.95	1.08
3800	29.98	1.07
3900	29.95	1.08
4000	29.97	1.13
4100	29.90	1.19
4200	29.90	1.22
4300	30.03	1.26
4400	29.95	1.28
4500	30.00	1.31
4600	30.13	1.34
4700	30.17	1.35
4800	30.12	1.33
4900	30.21	1.30
5000	30.24	1.25
5100	30.24	1.25
5200	30.30	1.24
5300	30.34	1.20
5400	30.39	1.15
5500	30.36	1.09
5600	30.48	1.07
5700	30.41	1.08
5800	30.45	1.09
5900	30.68	1.14
6000	30.65	1.18

*Typical Performance Curves*

## Outline Dimensions

GH986



CASE #.	A	B	C	D	E	F	G	H	J	WT. GRAM
GH986	--	3.46 (87.88)	3.46 (87.88)	6.36 (161.54)	--	1.75 (44.45)	.23 (5.84)	--	--	1100

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

### Notes:

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



INTERNET <http://www.minicircuits.com>

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

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Mini-Circuits ISO 9001 & ISO 14001 Certified



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