Coaxial

Precision Fixed Attenuator

BW-S3W10+

50Ω 10W DC to 12400 MHz

The Big Deal

- Wideband, DC to 12.4 GHz
- Outstanding attenuation flatness
- Excellent VSWR, 1.15 typ up to 12.4 GHz

CASE STYLE: DC737-1

Product Overview

The BW-S3W10+ is a precision fixed attenuator operating over a wide frequency range with excellent flatness of attenuation. Precise attenuation excellent VSWR 1.15:1 typ and passivated stainless steel construction make these models ideal solutions for systems requiring precise attenuation across very wide frequency range.

Key Features

Feature	Advantages
Wideband, DC to 12.4 GHz	Ideal for an exceptionally wide variety of applications.
Excellent VSWR, 1.15 dB typ up to 12.4 GHz	Efficient power utilization with low power reflected back to source.
Outstanding attenuation flatness, ±0.3	Provides precise, consistent attenuation across the entire frequency band, ideal for broadband and multi-band usage.
Passivated stainless steel connectors	Rugged construction withstands harsh environmental conditions for high reliability and long life of use.

Coaxial

Precision Fixed Attenuator

BW-S3W10+

50Ω 10W 3dB DC to 12.4 GHz

CASE STYLE: DC737-1

Connectors	Model
SMA-Fem to SMA-Male	BW-S3W10+

+RoHS Compliant

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

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C**

**With mated connectors. Unmated, 85°C max.

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

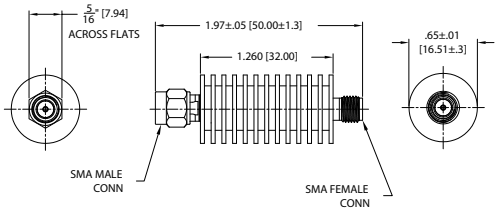
Features

- DC to 12.4 GHz
- precise attenuation
- excellent VSWR, 1.07 typ
- Passivated stainless steel SMA male and female connectors

Applications

- matching
- instrumentation
- test set-ups

Outline Drawing



Weight: 9.1 Grams

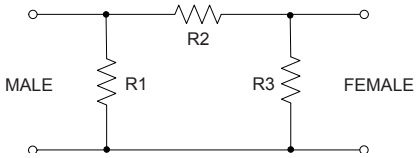
Dimensions are in inches (mm). Tolerances: 2 Pl.±.03; 3 Pl. ±.010

Electrical Specifications at 25°C

Parameter	Condition (GHz)	Min.	Typ.	Max.	Unit
Frequency Range		DC	—	12.4	GHz
Attenuation[1]	DC - 8	2.55	3	3.45	dB
	8 - 12.4	2.55	3	3.80	
VSWR	DC - 8	—	1.07	1.20	:1
	8 - 11	—	1.14	1.30	
	11-12.4		1.18	1.40	
Input Power[2]	DC - 12.4	—	—	10	W

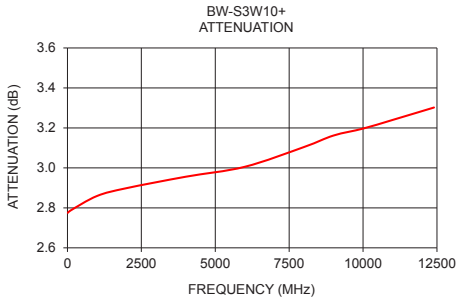
1. At 25°C, accuracy includes frequency and power variations. Temperature coefficient for attenuation: 0.0015 dB/dB/°C typ.
2. Max. power at 25°C ambient, derate linearly to 3.25W at 100°C. Peak power 500W max. 5µsec. pulse width, 100Hz PRF.

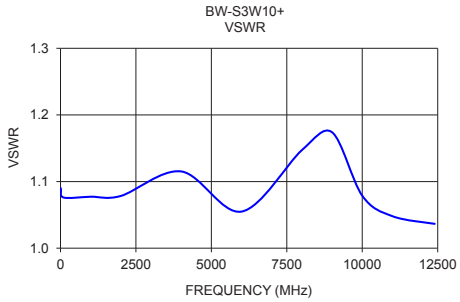
Simplified Electrical Schematic



Typical Performance Data

Frequency (MHz)	Attenuation (dB)	VSWR (:1)
10	2.78	1.09
100	2.79	1.08
1000	2.86	1.08
2000	2.90	1.08
4000	2.96	1.12
6000	3.01	1.05
8000	3.10	1.15
9000	3.16	1.17
10000	3.20	1.08
11000	3.24	1.05
12400	3.30	1.04





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

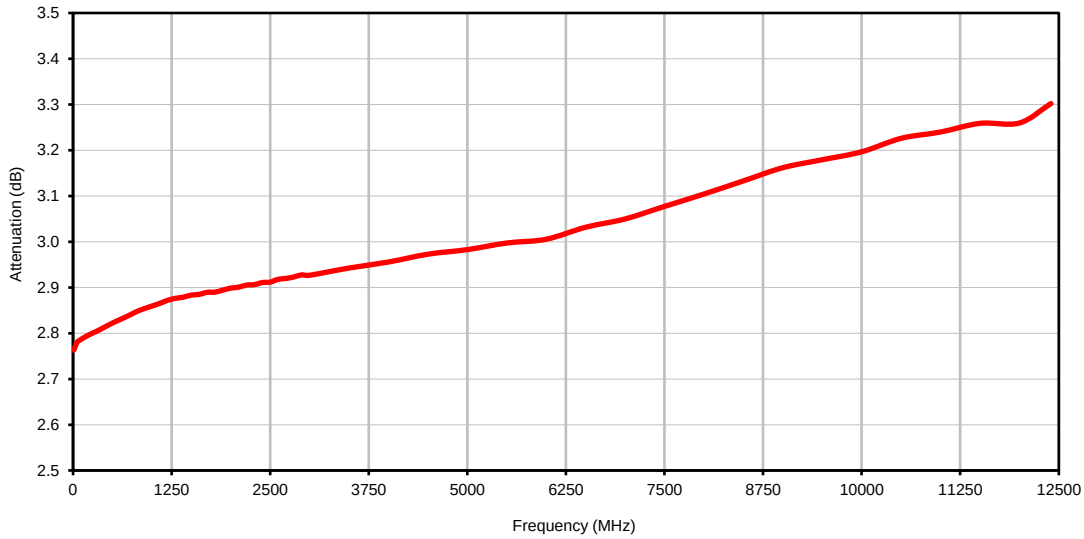
Fixed Attenuator BW-S3W10+

Typical Performance Data

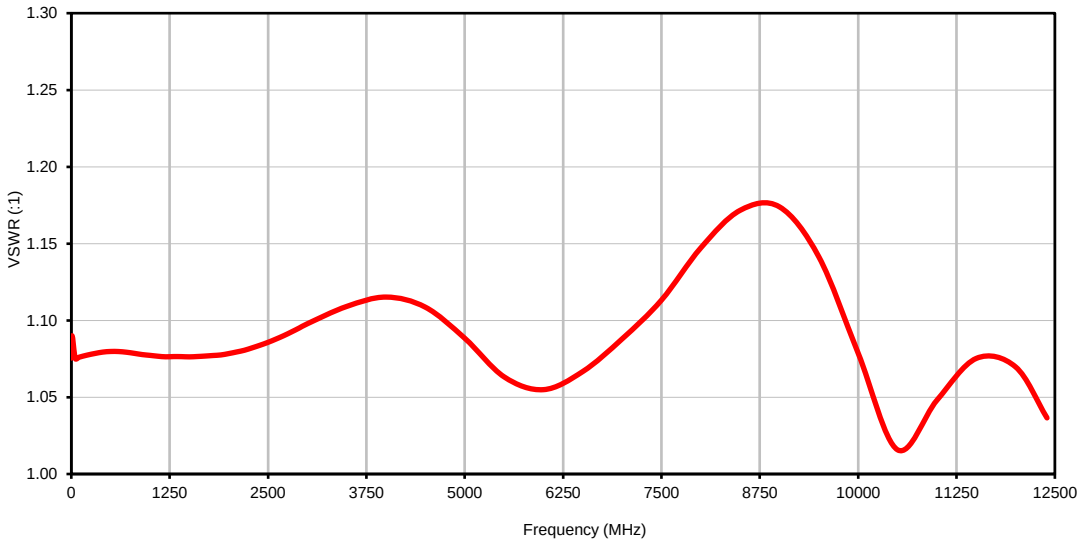
FREQUENCY (MHz)	ATTENUATION (dB)	VSWR (:1)
0.3	2.76	1.08
10	2.76	1.09
50	2.78	1.08
100	2.79	1.08
200	2.80	1.08
300	2.80	1.08
400	2.81	1.08
500	2.82	1.08
600	2.83	1.08
700	2.84	1.08
800	2.85	1.08
900	2.85	1.08
1000	2.86	1.08
1100	2.87	1.08
1200	2.87	1.08
1300	2.88	1.08
1400	2.88	1.08
1500	2.88	1.08
1600	2.88	1.08
1700	2.89	1.08
1800	2.89	1.08
1900	2.89	1.08
2000	2.90	1.08
2100	2.90	1.08
2200	2.91	1.08
2300	2.91	1.08
2400	2.91	1.08
2500	2.91	1.09
2600	2.92	1.09
2700	2.92	1.09
2800	2.92	1.09
2900	2.93	1.10
3000	2.93	1.10
3500	2.94	1.11
4000	2.96	1.12
4500	2.97	1.11
5000	2.98	1.09
5500	3.00	1.06
6000	3.01	1.05
6500	3.03	1.07
7000	3.05	1.09
7500	3.08	1.11
8000	3.10	1.15
8500	3.13	1.17
9000	3.16	1.17
9500	3.18	1.14
10000	3.20	1.08
10500	3.23	1.02
11000	3.24	1.05
11500	3.26	1.08
12000	3.26	1.07
12400	3.30	1.04

Typical Performance Curves

Attenuation



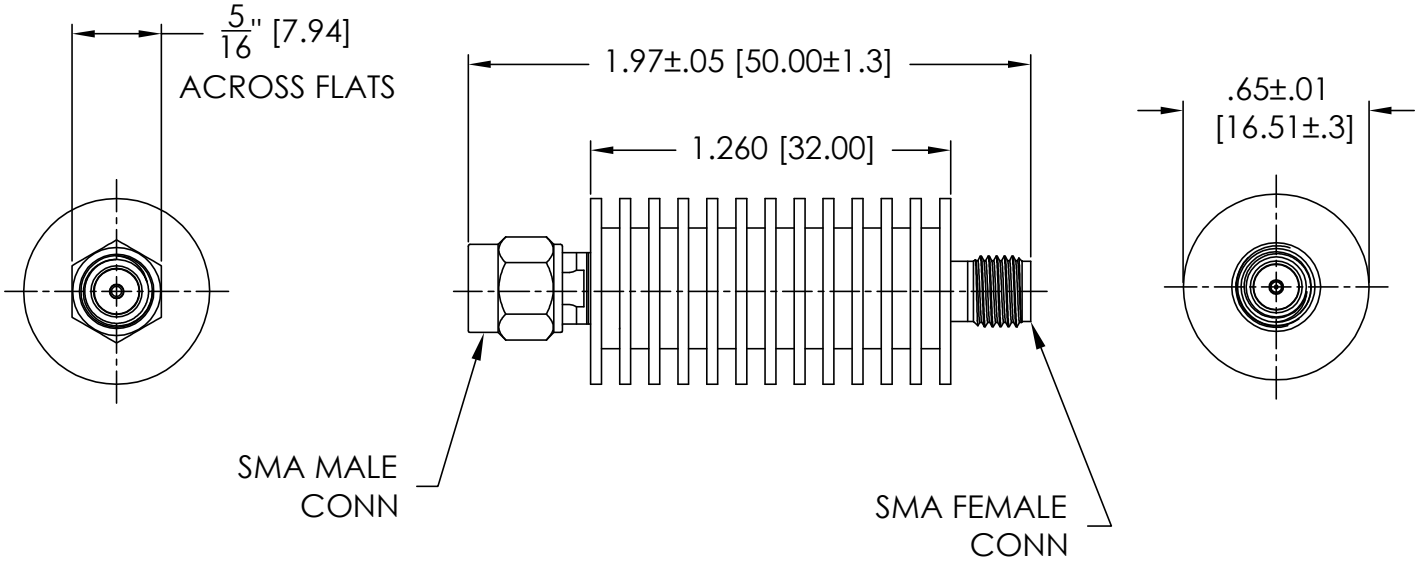
VSWR



Case Style DJ

Outline Dimensions

DC737-1



Weight: 9.1 Grams

Dimensions are in inches (mm). Tolerances: 2 Pl.±.03; 3 Pl. ±.010

Notes:

1. Case material: Aluminum alloy
2. Case Finish: Black anodize.

Mini-Circuits

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