



COAXIAL

# Fixed Attenuator

# BW-W10-0.5W114+

Mini-Circuits

50Ω 0.5 W 10 dB DC to 110 GHz 1.0 mm Male to Female

### KEY FEATURES

- Wideband, DC to 110 GHz
- 1.0 mm Male to Female Connectors
- Excellent VSWR, 1.3 typ.
- 0.5 W Power Handling

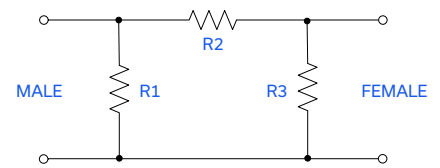


Generic photo used for illustration purposes only

### APPLICATIONS

- Optical communications
- Test & Measurement
- High-speed data systems
- Instrumentation
- Precision Measurements

### FUNCTIONAL DIAGRAM



### HANDLING INSTRUCTIONS

1.0 mm connectors require specific handling and torque values. See Mini-Circuits Application Note AN-71-001 for detail.

### PRODUCT OVERVIEW

The Mini-Circuits catalog model BW-W10-0.5W114+ is a precision fixed 10 dB 0.5 W attenuator. BW-W10-0.5W114+ operates over an extremely wide frequency range with excellent VSWR and supports a broad range of system and testing applications. Precise performance, excellent VSWR and wide bandwidth make this model an ideal solution for systems requiring accurate attenuation across a very wide frequency range.

### ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency Range		DC	-	110	GHz
Attenuation	DC-26.5	8.7	9.7	10.8	dB
	26.5-40	8.7	10.0	11.3	
	40-60	8.5	10.4	11.5	
	60-90	8.2	10.7	11.8	
	90-110	8.0	10.6	12.0	
VSWR	DC-26.5	-	1.1	1.4	:1
	26.5-40	-	1.1	1.6	
	40-60	-	1.3	1.7	
	60-90	-	1.5	2.1	
	90-110	-	1.7	2.7	

### ABSOLUTE MAXIMUM RATINGS<sup>1</sup>

Parameter	Ratings
Operating Case Temperature	-55°C to +100°C
Storage Temperature	-55°C to +100°C

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





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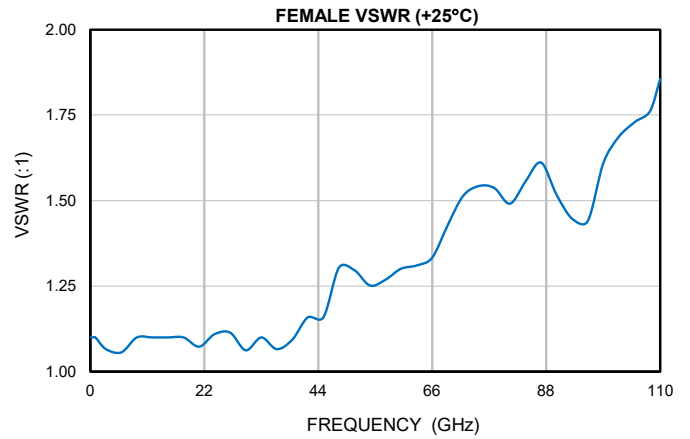
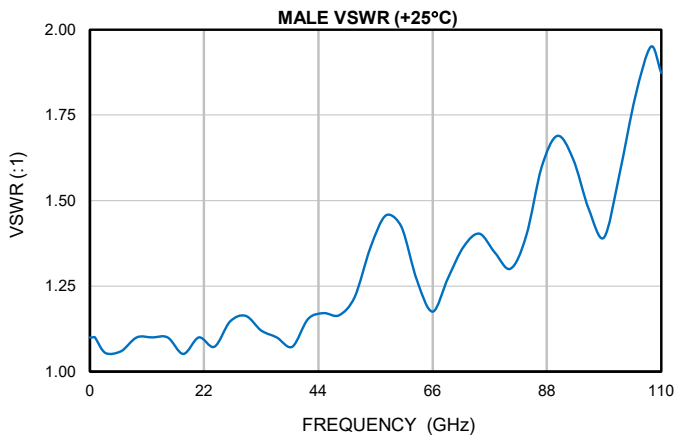
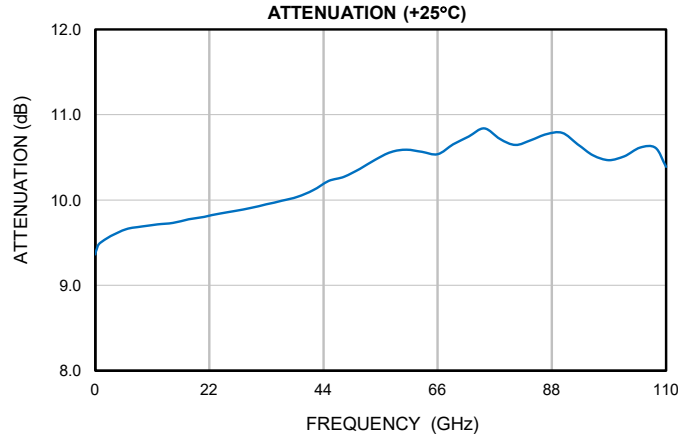
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### TYPICAL PERFORMANCE GRAPHS





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## BW-W10-0.5W114+

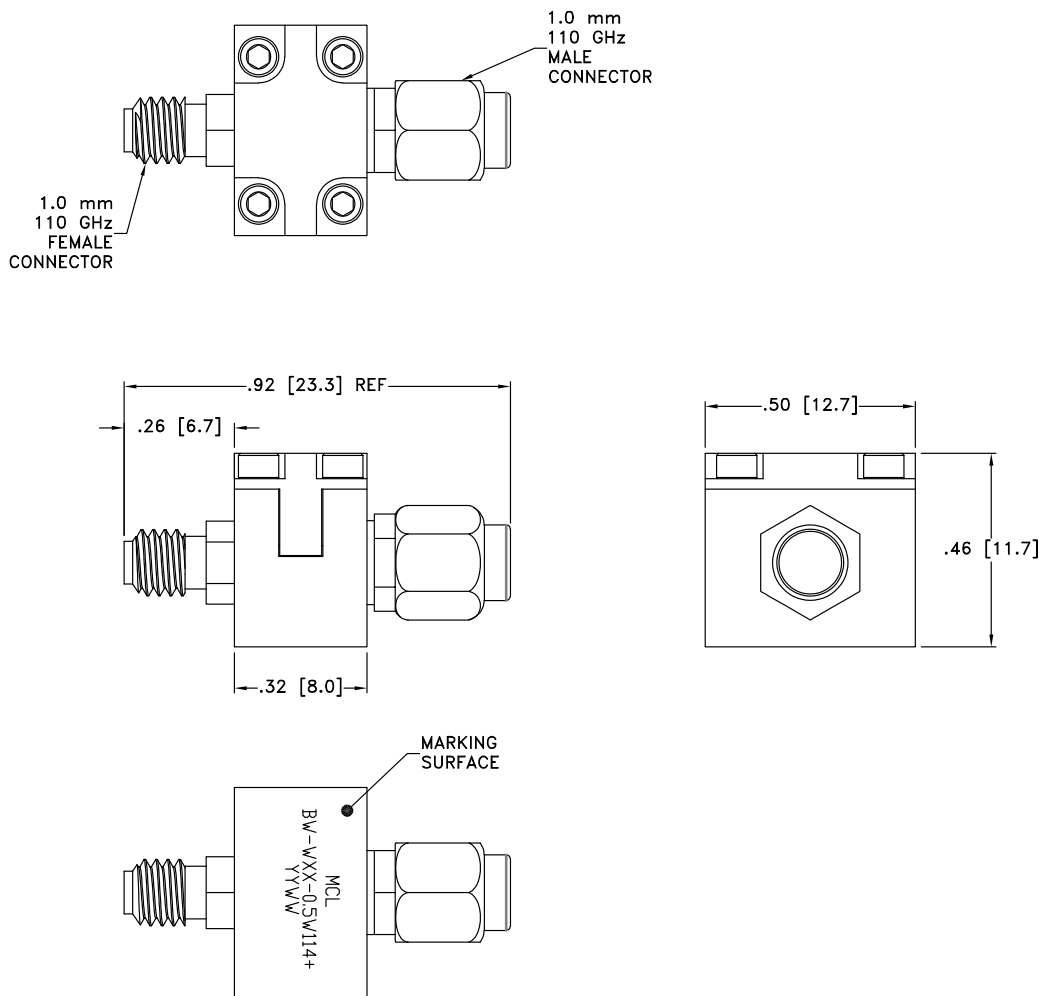
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### COAXIAL CONNECTIONS

Description	RF1 PORT	RF2 PORT
Connector Type	1.0 mm Male	1.0 mm Female
Orientation	Straight	Straight

### CASE STYLE DRAWING



Weight: 7.0 grams MAX

Dimensions are in inches [mm]. Tolerances: 2 PL±.03[.76]; 3 PL± .015[.38] inches[mm]

**PRODUCT MARKING\*:** BW-W10-0.5W114+

\*Marking may contain other features or characters for internal lot control.





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ADDITIONAL INFORMATION IS AVAILABLE ON OUR DASHBOARD

[CLICK HERE](#)

<b>Performance Data &amp; Graphs</b>	Data Graphs S-Parameter (S2P Files) Data Set (.zip file)
<b>Case Style</b>	FF3501
<b>RoHS Status</b>	Compliant
<b>Environmental Ratings</b>	ENV142

### 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/terms/viewterm.html](http://www.minicircuits.com/terms/viewterm.html)



# Fixed Attenuator

# BW-W10-0.5W114+

## Typical Performance Data (+25°C)

FREQ.	ATTENUATION	MALE VSWR	FEMALE VSWR
(GHz)	(dB)	(:1)	(:1)
0.01	9.4	1.1	1.1
0.1	9.4	1.1	1.1
0.5	9.5	1.1	1.1
1.0	9.5	1.1	1.1
3.0	9.6	1.1	1.1
6.0	9.7	1.1	1.1
9.0	9.7	1.1	1.1
12.0	9.7	1.1	1.1
15.0	9.7	1.1	1.1
18.0	9.8	1.1	1.1
21.0	9.8	1.1	1.1
24.0	9.8	1.1	1.1
27.0	9.9	1.1	1.1
30.0	9.9	1.2	1.1
33.0	10.0	1.1	1.1
36.0	10.0	1.1	1.1
39.0	10.0	1.1	1.1
42.0	10.1	1.2	1.2
45.0	10.2	1.2	1.2
48.0	10.3	1.2	1.3
51.0	10.4	1.2	1.3
54.0	10.5	1.4	1.3
57.0	10.6	1.5	1.3
60.0	10.6	1.4	1.3
63.0	10.6	1.3	1.3
66.0	10.5	1.2	1.3
69.0	10.7	1.3	1.4
72.0	10.7	1.4	1.5
75.0	10.8	1.4	1.5
78.0	10.7	1.3	1.5
81.0	10.6	1.3	1.5
84.0	10.7	1.4	1.6
87.0	10.8	1.6	1.6
90.0	10.8	1.7	1.5
93.0	10.7	1.6	1.4
96.0	10.5	1.5	1.4
99.0	10.5	1.4	1.6
102.0	10.5	1.6	1.7
105.0	10.6	1.8	1.7
108.0	10.6	1.9	1.8
110.0	10.4	1.9	1.9



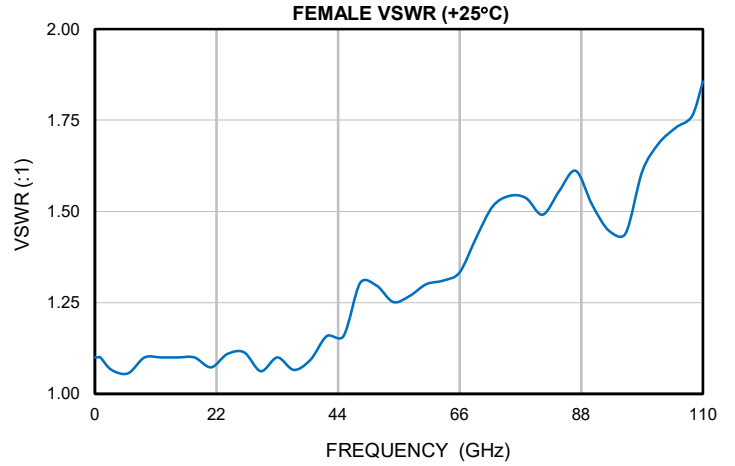
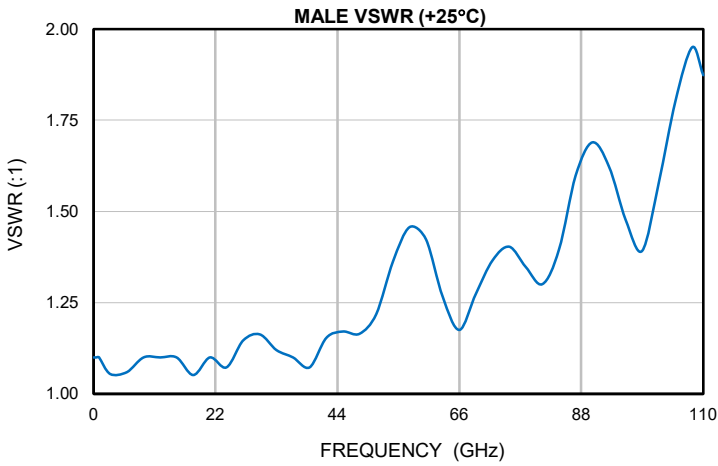
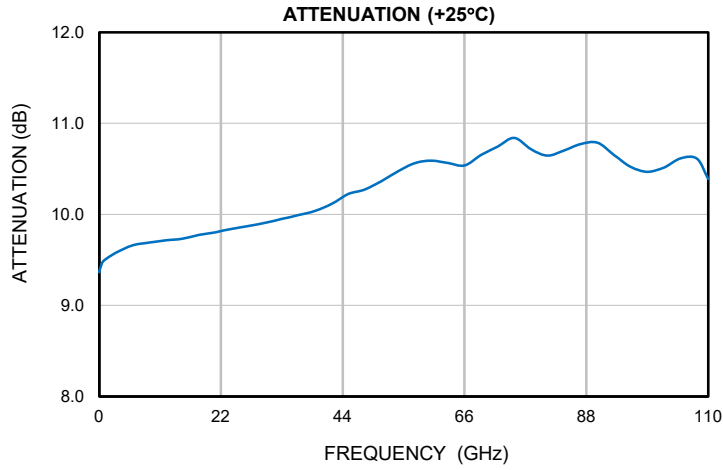
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IF/RF MICROWAVE COMPONENTS

REV. OR  
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 9/13/2024  
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## Typical Performance Curves

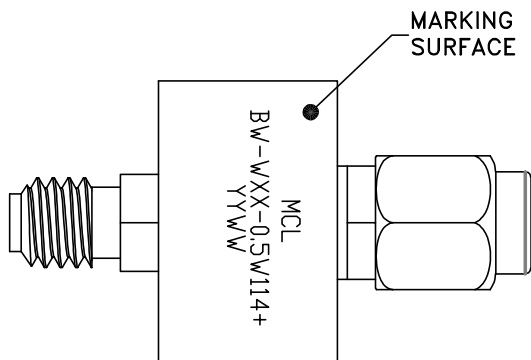
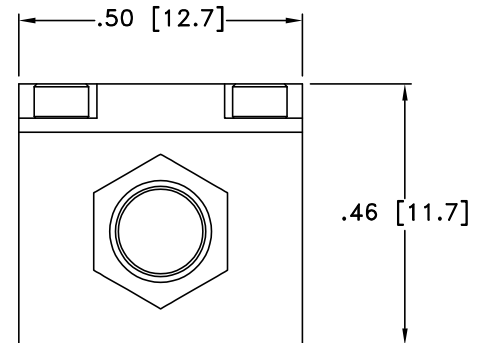
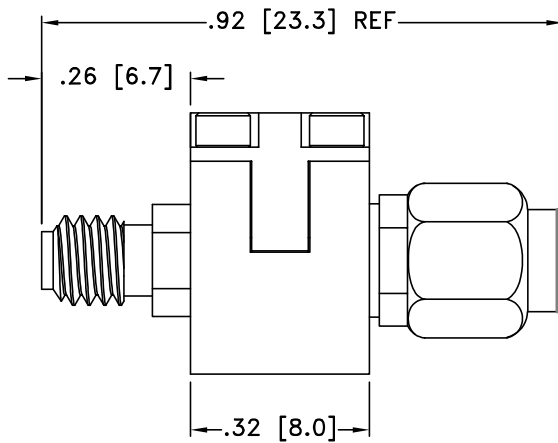
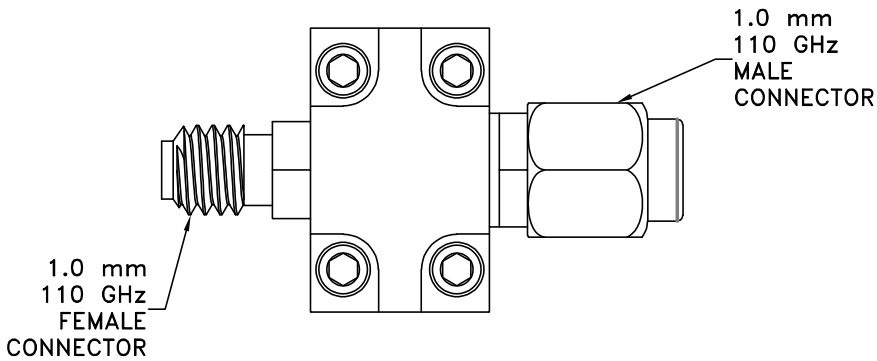


# Case Style

# FF

## Outline Dimensions

## FF3501



Weight: 7.0 grams MAX

Dimensions are in inches [mm]. Tolerances: 2 Pl.  $\pm .03$  [.76]; 3 Pl.  $\pm .015$  [.38] inches [mm]

### Notes:

1. Case material: Aluminum Alloy.
2. Finish: Chemical conversion per MIL-STD-5541.

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ISO 9001 ISO 14001 CERTIFIED

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RF/IF MICROWAVE COMPONENTS

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.

<b>Specification</b>	<b>Test/Inspection Condition</b>	<b>Reference/Spec</b>
Operating Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 5 cycles	MIL-STD-202, Method 107, Condition A except +100°C instead of 85°C
Connector Durability	100 Mating / Unmating Cycles	MIL-PRF-39012E, PARAGRAPH 4.6.12
Burn-In	0.5W for 16 hours	Individual Model Data Sheet