



COAXIAL MILLIMETER WAVE

Precision Fixed Attenuator **BW-VF20-1W54+**

50Ω 1W 20dB DC to 50 GHz 2.4mm Female to Female

THE BIG DEAL

- DC to 50 GHz
- 2.4mm Female to Female Connectors
- Excellent VSWR, 1.17 typ.
- Passivated stainless steel connectors
- 1W Power Handling



Generic photo used for illustration purposes only

Model No.	BW-VF20-1W54+
Case Style	DJ2477-4
Connectors	2.4mm Female to Female

+RoHS Compliant

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

APPLICATIONS

- 5G MIMO and Back Haul Radio Systems
- LTE & 5G MIMO Infrastructure
- Broadband Telecom
- Satellite Communications
- Test and Measurement Equipment
- Radar, EW, and ECM Defense Systems

PRODUCT OVERVIEW

The BW-VF20-1W54+ is a 2.4mm female to female variant of Mini-Circuits catalog model BW-V20-1W54+ (2.4mm female to male). This precision fixed 20dB 1W attenuator achieves extremely wide frequency range with excellent VSWR and supports a broad range of system and testing applications. Precise performance, excellent VSWR and wide band features make this model ideal solutions for systems requiring accurate attenuation across very wide frequency range.

KEY FEATURES

Features	Advantages
Extremely wideband, DC to 50 GHz	Ideal for an exceptionally wide variety of applications.
Excellent VSWR, 1.17 typ.	Efficient power utilization with low power reflected back to source.
Passivated stainless steel connectors	Rugged construction withstands harsh environmental conditions for high reliability and long life of use.





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50Ω 1W 20dB DC to 50 GHz 2.4mm Female to Female

ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (GHz)	Min.	Typ.	Max.	Units
Frequency Range		DC	-	50	GHz
Attenuation	DC-26.5	19.3	19.8	20.8	dB
	26.5-40	18.8	20.2	21.2	
	40-50	18.0	20.6	22.0	
VSWR	DC-26.5	-	1.07	1.35	:1
	26.5-40	-	1.24	1.6	
	40-50	-	1.21	1.75	
Input Power ¹	DC-50	-	-	1	W

1. Max. power at 25°C ambient, derate linearly to 0.1W at 100°C.

MAXIMUM RATINGS

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

Permanent damage may occur if any of these limits are exceeded.
Connectors need to be mated to ensure no damage occur over temperature extremes



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Mini-Circuits

50Ω 1W 20dB DC to 50 GHz 2.4mm Female to Female

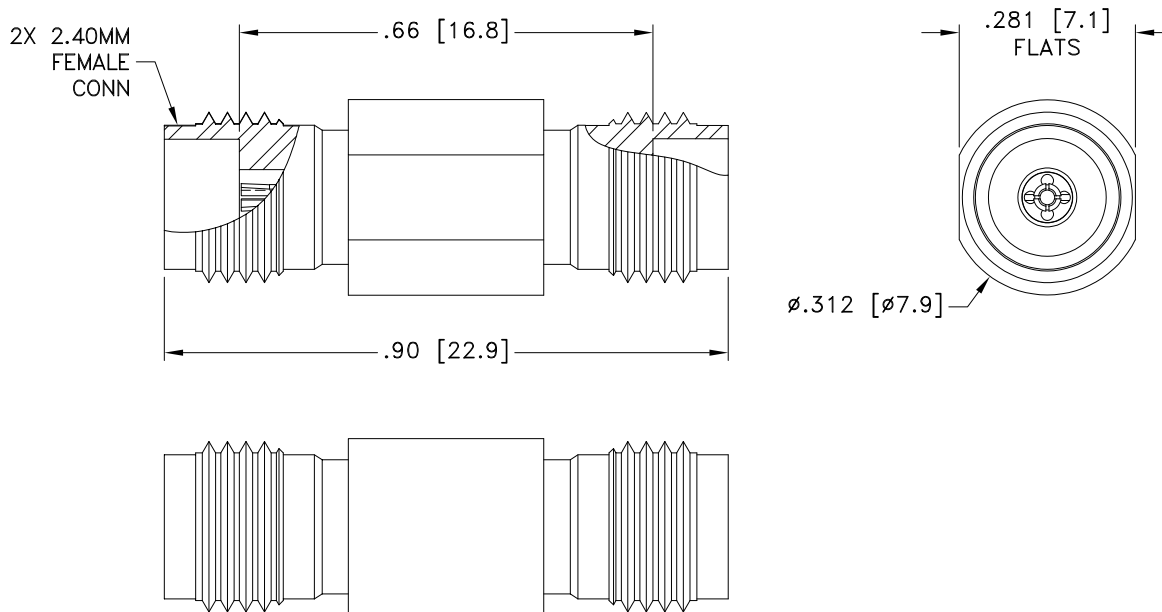
COAXIAL CONNECTIONS

Input	2.4mm Female
Output	2.4mm Female

CONNECTOR INFORMATION

Description	Connector 1	Connector 2
Type	2.4mm Female	2.4mm Female
Orientation	Straight	
Mounting Type	Standard	
Impedance	50Ω	
Contact	BeCu, Gold Plated	
Housing	Passivated Stainless Steel	
Dielectric	High Temperature Plastic Bead	

OUTLINE DRAWING



Weight: 3.44 grams

Dimensions are in inches [mm]. Tolerances: 2 Pl. $\pm .03$ [.76]; 3 Pl. $\pm .010$ [.25]



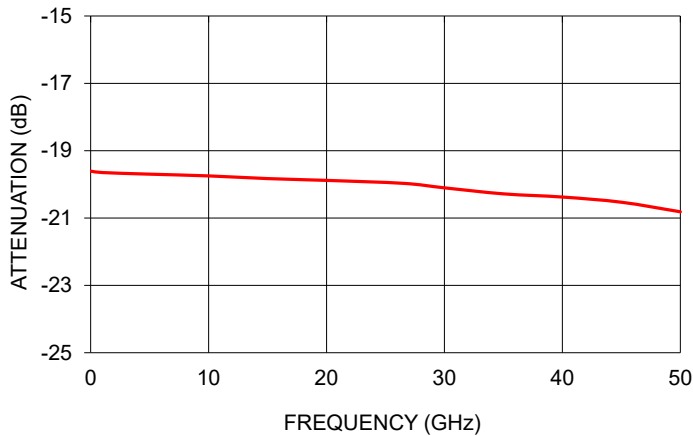


Precision Fixed Attenuator **BW-VF20-1W54+**

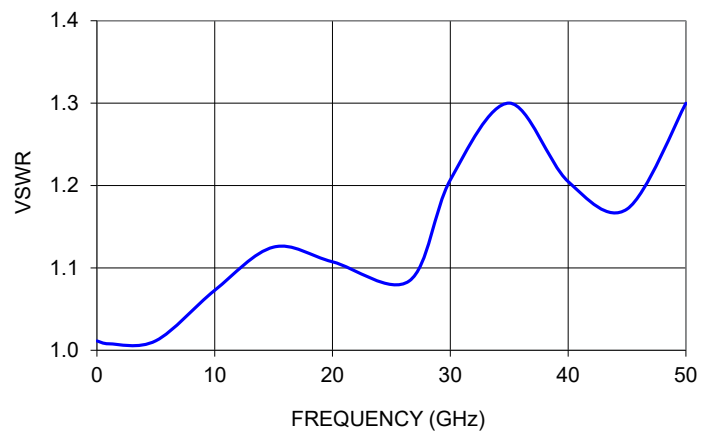
TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (GHz)	Attenuation (dB)	VSWR (:1)
0.01	19.6	1.01
1.0	19.6	1.01
5.0	19.7	1.01
10.0	19.7	1.07
15.0	19.8	1.13
20.0	19.8	1.11
26.5	19.9	1.08
30.0	20.1	1.21
35.0	20.2	1.30
40.0	20.3	1.20
45.0	20.5	1.17
50.0	20.8	1.30

BW-VF20-1W54+
ATTENUATION



BW-VF20-1W54+
VSWR



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

Fixed Attenuator

Typical Performance Data

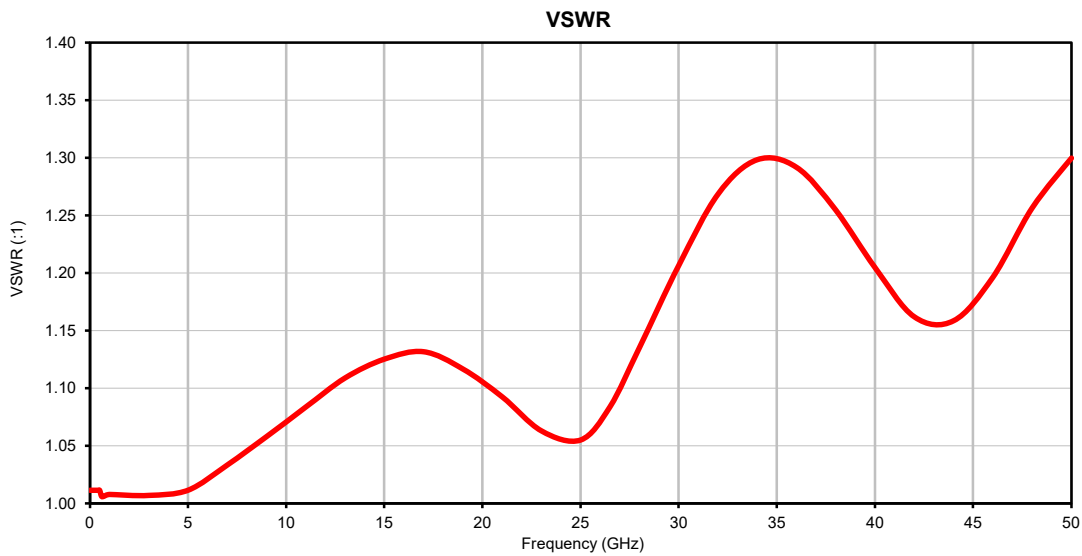
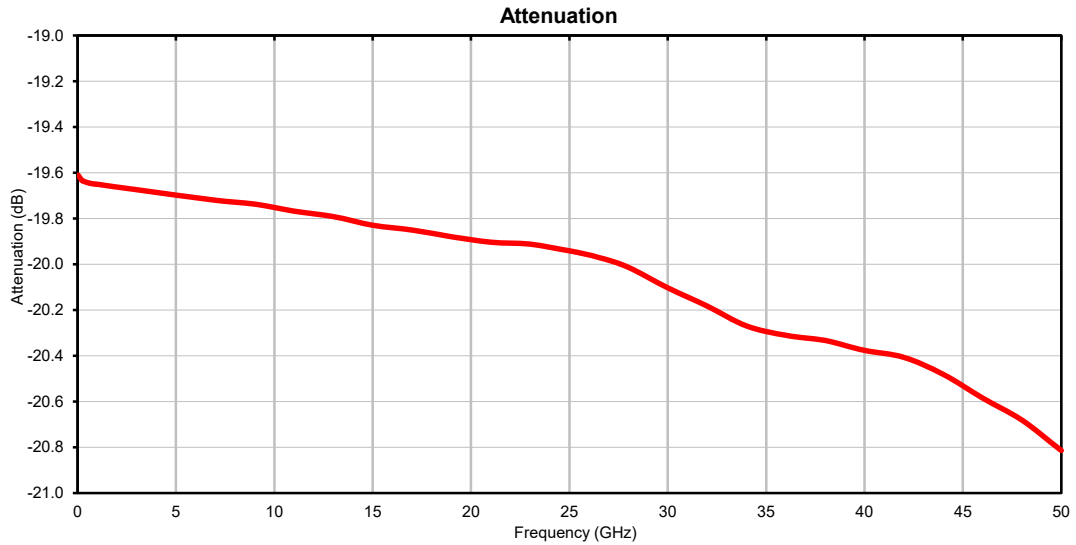
BW-VF20-1W54+

FREQUENCY (GHz)	ATTENUATION (dB)	VSWR (:1)
0.01	19.61	1.01
0.2	19.63	1.01
0.3	19.64	1.01
0.4	19.64	1.01
0.5	19.64	1.01
0.6	19.65	1.01
0.7	19.65	1.01
0.8	19.65	1.01
0.9	19.65	1.01
1.0	19.65	1.01
3.0	19.67	1.01
5.0	19.70	1.01
7.0	19.72	1.03
9.0	19.74	1.06
11.0	19.77	1.08
13.0	19.79	1.11
15.0	19.83	1.13
17.0	19.85	1.13
19.0	19.88	1.12
21.0	19.90	1.09
23.0	19.91	1.06
25.0	19.94	1.06
26.5	19.97	1.08
28.0	20.01	1.14
30.0	20.10	1.21
32.0	20.18	1.27
34.0	20.27	1.30
36.0	20.31	1.29
38.0	20.33	1.25
40.0	20.38	1.20
42.0	20.41	1.16
44.0	20.48	1.16
46.0	20.58	1.20
48.0	20.68	1.26
50.0	20.81	1.30

Fixed Attenuator

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Typical Performance Curves

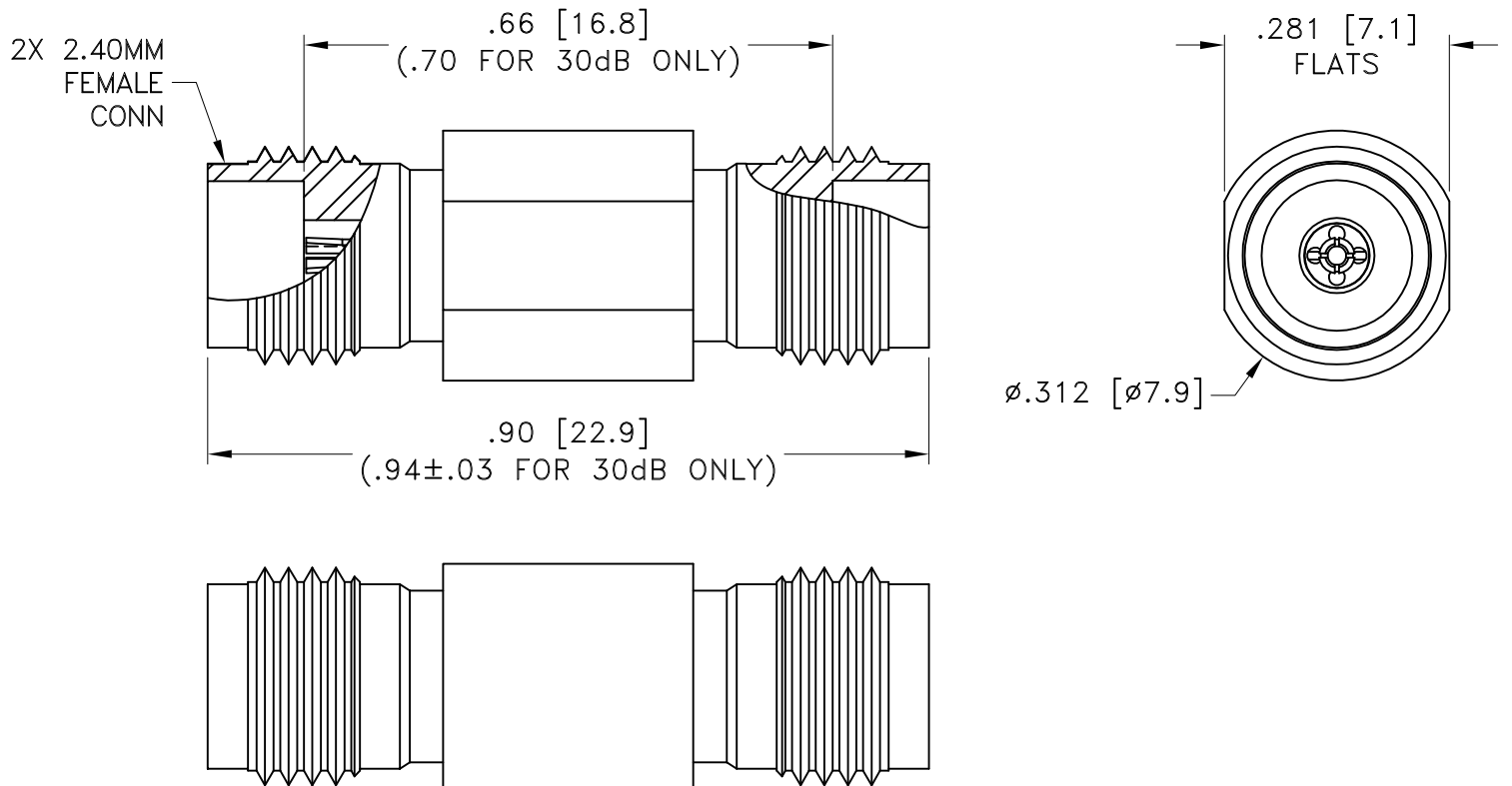


Case Style

DJ

Outline Dimensions

DJ2477-4



Weight: 3.44 grams

Dimensions are in inches (mm). Tolerances: 2 Pl.±.03[.76]; 3 Pl. ±.010[.25]

Notes:

Case material: Stainless steel.
Case Finish: Passivated.

 **Mini-Circuits**[®]

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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
Thermal Shock	-55° to 100°C, 5 cycles	MIL-STD-202, Method 107 G, Condition A (Except 100°C Instead of 85°C)
Average Power Burn-in	1W, 16 hours	Individual Model Data Sheet.
Connector Durability	500 Mating / Unmating Cycles	MIL-PRF-390 / 2E, Paragraph 4, 6, 12