

# Precision Fixed Attenuator BW-VF20-1W54+

Mini-Circuits

50Ω 1W 20dB

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.

REV. OR ECO-015691 BW-VF20-1W54+ MCL NY 221114

### **Mini-Circuits**

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

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1W 20dB D0

DC to 50 GHz 2.4mm Female to Female

#### **ELECTRICAL SPECIFICATIONS AT 25°C**

50Ω

Parameter	Frequency (GHz)	Min.	Тур.	Max.	Units
Frequency Range		DC	-	50	GHz
	DC-26.5	19.3	19.8	20.8	
Attenuation	26.5-40	18.8	20.2	21.2	dB
	40-50	18.0	20.6	22.0	
	DC-26.5	-	1.07	1.35	
VSWR	26.5-40	-	1.24	1.6	:1
	40-50	-	1.21	1.75	
Input Power <sup>1</sup>	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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s 50 $\Omega$  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	
Туре	2.4mm Female	2.4mm Female	
Orientation	Straight		
Mounting Type	Standard		
Impedance	50 Ω		
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.±.03[.76]; 3 Pl. ±.010[.25]

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50Ω 1W 20dB

DC to 50 GHz 2.4mm Female to Female

#### **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



#### 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

### Mini-Circuits

## Fixed Attenuator

## BW-VF20-1W54+

Typical Performance Data

FREQUENCY	ATTENUATION	VSWR
(GHz)	(dB)	(: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

ISO 9001 ISO 14001 AS 9100 CERTIFIED

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P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 • Fax (718) 932-4661 For dataliad performance specs & shopping online see Mini-Circuits web site The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com IF/RF MICROWAVE COMPONENTS REV. OR BW-VF20-1W54+ 7/28/2022 Page 1 of 1

## **Fixed Attenuator**

Typical Performance Curves





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## Mini-Circuits Environmental Specifications ENV87

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

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