



Mini-Circuits

COAXIAL

# Fixed Attenuator

FW-A-SERIES

50  $\Omega$  Up to 2W DC to 12000 MHz

## THE BIG DEAL

- Wideband coverage, DC to 12000 MHz
- Up to 2 Watt rating
- Rugged unibody construction
- Off-the-shelf availability
- Very low cost

## APPLICATIONS

- Impedance matching
- Signal level adjustment



Generic photo used for illustration purposes only

Model No.	FW-A-SERIES
Case Style	FF704
Connectors	SMA

### +RoHS Compliant

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

## PRODUCT OVERVIEW

Mini-Circuits' FW-A series are fixed attenuators from DC to 12000 MHz frequency range with excellent flatness in attenuation. FW-A series is available with nominal attenuation of 1 to 20 dB. This attenuator series support testing and measurement application. Precise performance, excellent VSWR and rugged unibody construction makes the model ideal solution for systems requiring precise attenuation across very wide frequency range.

## KEY FEATURES

Feature	Advantages
Rugged construction	Excellent durability for a long lifetime of use
Up to 2 Watt rating	Good power handling
Excellent VSWR	Well-matched for 50 $\Omega$ systems
Flat attenuation	Good performance over the band.





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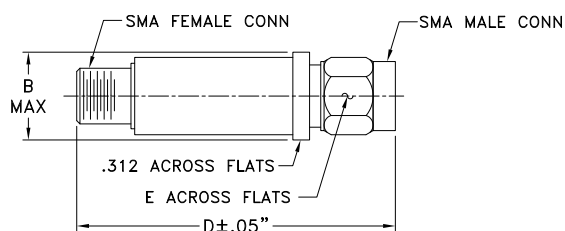
FW-20A+

## MAXIMUM RATINGS

Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

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

## OUTLINE DRAWING

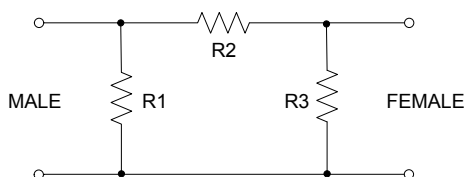


## OUTLINE DIMENSIONS (Inch/mm)

B	D	E	wt
.410	1.43	.312	grams
10.41	36.32	7.92	10.0

Note: Please refer to case style drawing for details

## ELECTRICAL SCHEMATIC



## ELECTRICAL SPECIFICATIONS AT 25°C

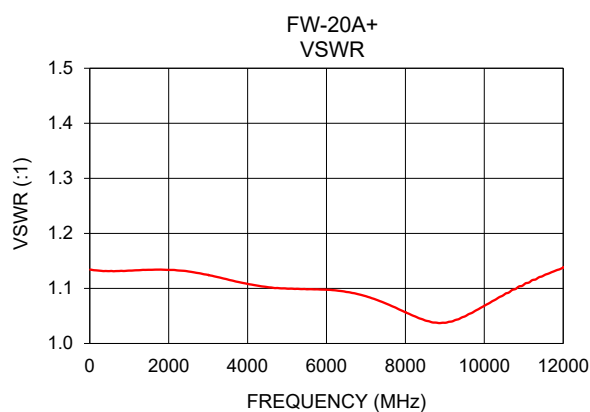
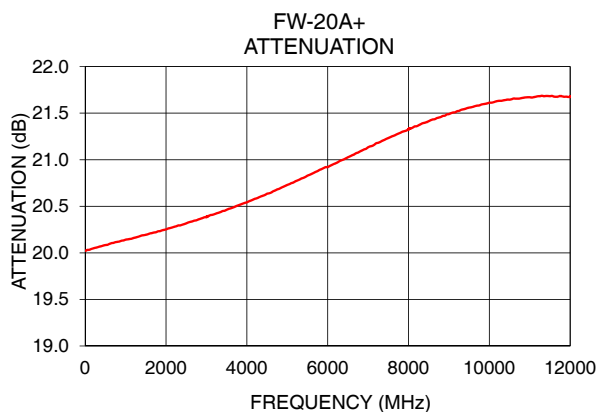
Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		DC	-	12000	MHz
Attenuation <sup>1</sup>	10	-	20	-	dB
	DC - 3000	19.6	20.2	21	
	3000 - 8000	19.8	21	22	
	8000 - 12000	20.6	21.6	22.6	
VSWR	DC - 3000	-	1.10	1.45	:1
	3000 - 8000	-	1.10	1.55	
	8000 - 12000	-	1.20	-	
Input Power <sup>2</sup>	DC - 12000	-	-	0.8	W

1. Attenuation varies by 0.3 dB max. over temperature.

2. RF power at 25°C is 0.8W; Derate linearly to 0.6W at 85°C

## TYPICAL PERFORMANCE DATA

Frequency (MHz)	Attenuation (dB)	VSWR (:1)
10	20.02	1.13
100	20.03	1.13
500	20.08	1.13
1000	20.14	1.13
2000	20.25	1.13
3000	20.38	1.12
5000	20.73	1.10
6000	20.92	1.10
8000	21.33	1.06
9000	21.49	1.04
9500	21.56	1.05
10000	21.61	1.07
10500	21.64	1.09
11000	21.67	1.11
12000	21.67	1.14



## NOTES

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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)

