



COAXIAL

Fixed Attenuator

VAT-A-SERIES

Mini-Circuits

50Ω

Up to 2W

DC to 6000 MHz

THE BIG DEAL

- Wideband coverage, DC to 6000 MHz
- Up to 2 watt rating
- Rugged unibody construction
- Excellent VSWR
- Excellent flatness



Generic photo used for illustration purposes only

APPLICATIONS

- Signal level adjustment
- Impedance matching

Model No.	VAT-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' VAT-A series are fixed attenuators from DC to 6000 MHz frequency range with excellent flatness in attenuation. VAT-A series is available with nominal attenuation of 1 to 30 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 Ω systems
Flat attenuation	Good performance over the band.



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Fixed Attenuator

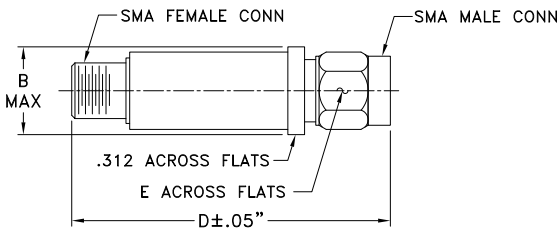
VAT-20A+

MAXIMUM RATINGS

Operating Temperature	-45°C to 100°C
Storage Temperature	-55°C to 100°C

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

OUTLINE DRAWING

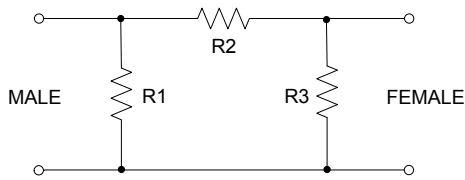


OUTLINE DIMENSIONS (Inch/mm)

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



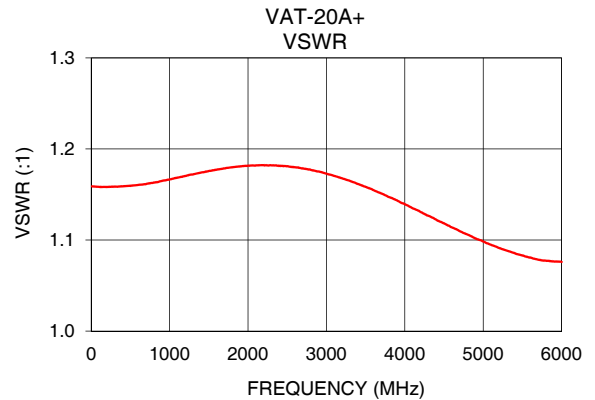
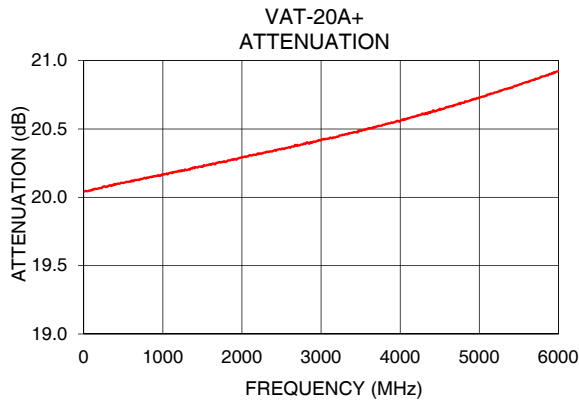
ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		DC	-	6000	MHz
Attenuation ¹ nominal ³	10	-	20 ± 0.3	-	dB
Attenuation Flatness ²	DC-3000	-	0.4	-	dB
	3000-5000	-	0.4	-	
	5000-6000	-	0.35	-	
	DC-6000	-	0.7	-	
VSWR	DC-3000	-	1.2	1.5	:1
	3000-5000	-	1.2	1.6	
	5000-6000	-	1.2	-	
Input Power ⁴		-	-	0.8	W

- Attenuation varies by 0.3 dB max. over temperature.
- Flatness = variation over band divided by 2.
- Nominal attenuation at 10 MHz
- 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	20.04	1.16
100	20.05	1.16
500	20.11	1.16
900	20.16	1.16
1000	20.17	1.17
1400	20.21	1.17
1500	20.22	1.18
2000	20.29	1.18
2500	20.35	1.18
2800	20.39	1.18
3000	20.42	1.17
4000	20.56	1.14
4500	20.65	1.12
5000	20.73	1.10
6000	20.92	1.08



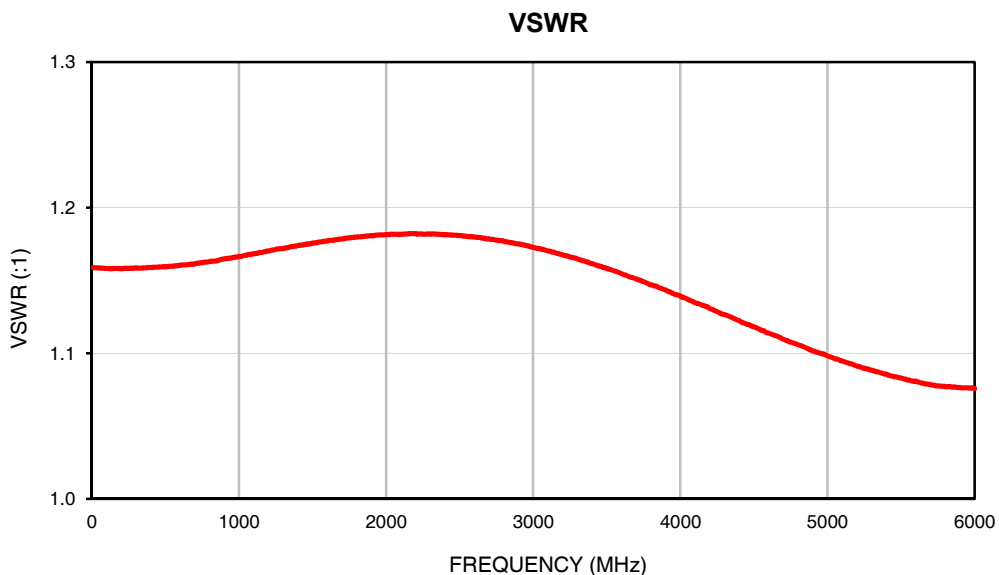
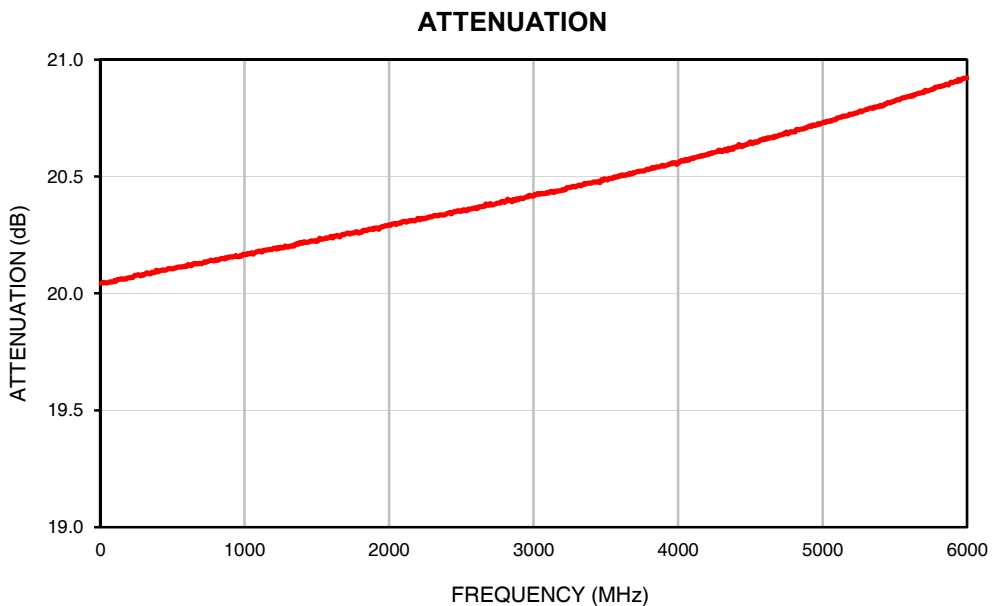
- NOTES
- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
 - Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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



Typical Performance Data

FREQ.	ATTENUATION	VSWR
(MHz)	(dB)	(:1)
10	20.04	1.16
20	20.05	1.16
50	20.04	1.16
100	20.05	1.16
200	20.07	1.16
300	20.08	1.16
400	20.09	1.16
500	20.11	1.16
600	20.12	1.16
700	20.13	1.16
800	20.14	1.16
900	20.16	1.16
1000	20.17	1.17
1100	20.18	1.17
1200	20.19	1.17
1300	20.20	1.17
1400	20.21	1.17
1500	20.22	1.18
1600	20.24	1.18
1700	20.25	1.18
1800	20.26	1.18
1900	20.28	1.18
2000	20.29	1.18
2100	20.31	1.18
2200	20.32	1.18
2300	20.33	1.18
2400	20.34	1.18
2500	20.35	1.18
2600	20.37	1.18
2700	20.38	1.18
2800	20.39	1.18
2900	20.41	1.18
3000	20.42	1.17
3100	20.43	1.17
3200	20.44	1.17
3300	20.46	1.16
3400	20.47	1.16
3500	20.49	1.16
3600	20.50	1.15
3700	20.52	1.15
3800	20.53	1.15
3900	20.54	1.14
4000	20.56	1.14
4100	20.58	1.13
4200	20.59	1.13
4300	20.61	1.13
4400	20.63	1.12
4500	20.65	1.12
4600	20.66	1.11
4700	20.68	1.11
4800	20.69	1.11
4900	20.71	1.10
5000	20.73	1.10
5100	20.75	1.09
5200	20.77	1.09
5300	20.79	1.09
5400	20.80	1.09
5500	20.82	1.08
5800	20.88	1.08
6000	20.92	1.08

Typical Performance Curves



Case Style

FF

FF704

Outline Dimensions



CASE #.	A	B	C	D	E	WT GRAMS
FF704	--	.410 (10.41)	--	1.43 (36.32)	.312 (7.92)	10.0

Dimensions are in inches (mm). Tolerances: 2Pl. ± .04; 3Pl. ± .030

Notes:

1. Case material: Stainless steel.
2. Case finish: Gold plated.
3. Round Flange may have .312 Across Flats in some models.

Mini-Circuits[®]
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.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-45° 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