DC Passing

Attenuator

SAT-6DC-3A+

50Ω 100 to 500 MHz

The Big Deal

- HIGH DC Current handling
- Rugged unibody construction
- DC resistance (in/out) 0.1Ω Typ

CASE STYLE: FF99

Product Overview

SAT-6DC-3A+ is a DC Passing fixed attenuator in 100 MHz to 500 MHz frequency range with excellent flatness of attenuation. These units support testing applications. Precise performance, excellent VSWR (1.1:1 typ.) and rugged construction make these models ideal solutions for systems requiring precise attenuation across very wide frequency range.

Key Features

Feature	Advantages
Excellent VSWR, 1.10 typ	Well-matched for 50Ω systems; reduces effects of phase variation
Flat attenuation	Accurate performance within ±0.8 dB over the full frequency range.
Rugged construction	Excellent durability for a long lifetime of use.

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CASE STYLE: FF99

Connectors	Model
SMA	SAT-6DC-3A+

Maximum 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.

Features

- High DC Current handling
- Rugged unibody construction
- DC resistance (in/put) 0.1Ω typical

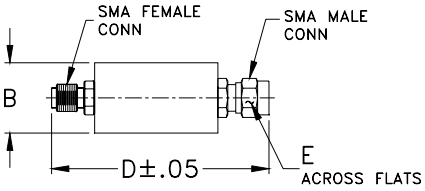
Applications

- Power passing
- Instrumentation
- Test equipment
- Lab use

+RoHS Compliant

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

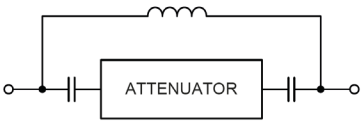
Outline Drawing



Outline Dimensions (inch / mm)

B	D	E	wt
.67	1.98	.312	grams
17.02	50.29	7.92	42.0

Electrical Schematic



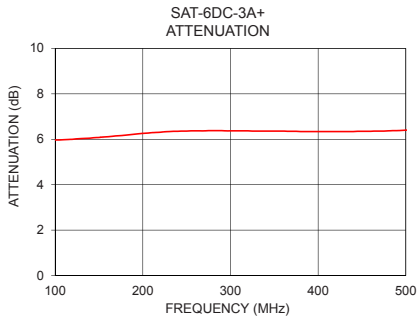
Electrical Specifications at 25°C

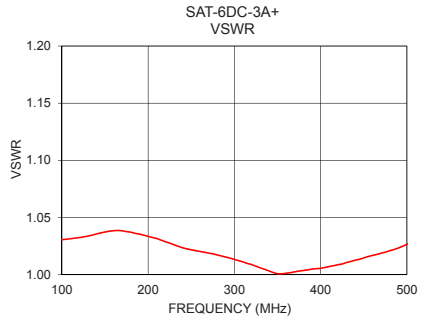
Parameter	Condition (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		100	—	500	MHz
Attenuation Nominal	100-500	5.5	6	6.9	dB
VSWR	100-500	—	1.1	1.5	:1
DC Current	100-500	—	—	3	Amps
Input Power	100-500	—	—	10	dBm

1. Flatness = variation over band divided by 2.

Typical Performance Data

Frequency (MHz)	Attenuation (dB)	VSWR (:1)
100	5.97	1.03
120	6.00	1.03
130	6.03	1.03
140	6.05	1.04
150	6.08	1.04
160	6.11	1.04
180	6.18	1.04
200	6.26	1.03
225	6.33	1.03
250	6.36	1.02
260	6.37	1.02
270	6.37	1.02
280	6.38	1.02
290	6.38	1.02
300	6.37	1.01
325	6.36	1.01
350	6.36	1.00
400	6.34	1.01
450	6.35	1.01
500	6.40	1.03





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/MCLStore/terms.jsp

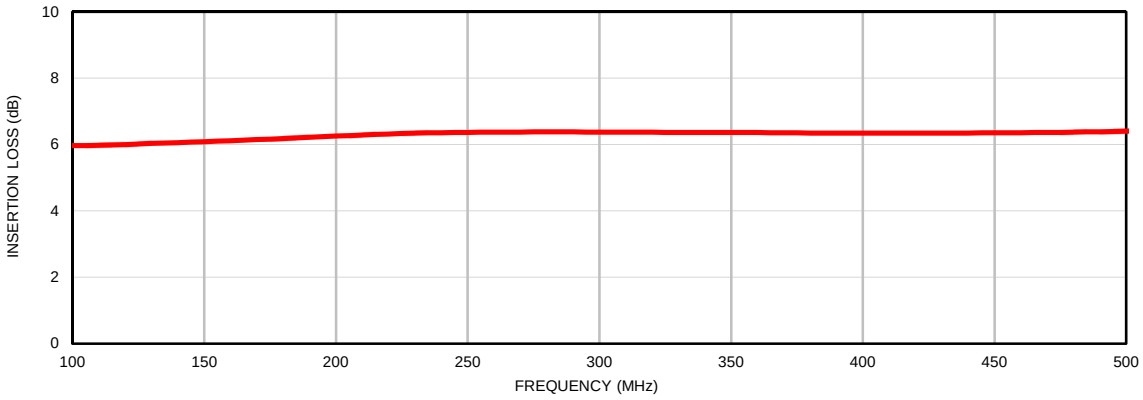
Fixed Attenuator, DC Passing SAT-6DC-3A+

Typical Performance Data

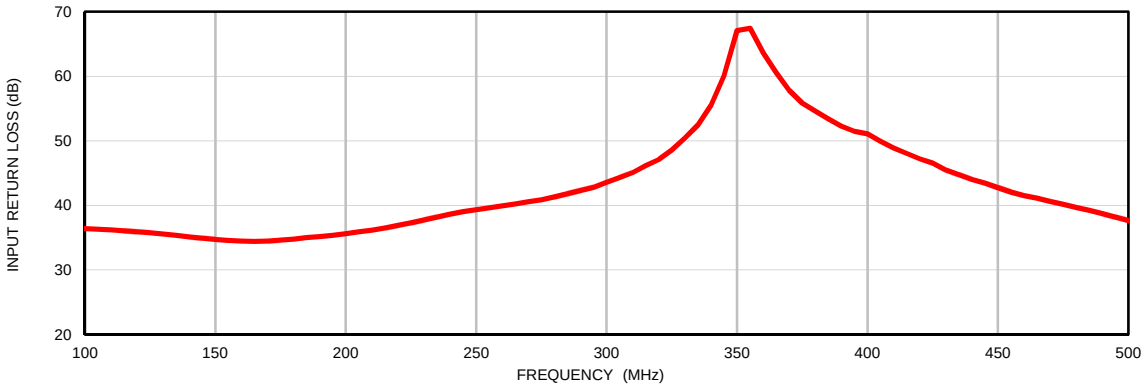
FREQUENCY (MHz)	ATTENUATION (dB)	FEMALE RETURN LOSS (dB)	MALE RETURN LOSS (dB)
0.50	0.98	18.82	18.76
10	7.08	22.91	22.71
20	6.22	31.04	30.65
30	6.05	33.95	33.54
40	5.99	35.29	34.86
50	5.96	35.88	35.58
55	5.95	36.18	35.77
60	5.95	36.33	36.02
70	5.95	36.55	36.23
80	5.96	36.59	36.23
90	5.96	36.54	36.04
100	5.97	36.42	35.80
110	5.98	36.19	35.59
120	6.00	35.93	35.43
125	6.02	35.77	35.30
130	6.03	35.59	35.18
140	6.05	35.13	34.76
150	6.08	34.73	34.24
160	6.11	34.48	33.91
170	6.15	34.50	33.81
180	6.18	34.77	34.03
190	6.22	35.15	34.44
200	6.26	35.64	34.94
210	6.29	36.14	35.50
220	6.31	36.93	36.04
230	6.34	37.76	36.70
235	6.35	38.22	37.07
240	6.35	38.66	37.44
245	6.36	39.02	37.76
250	6.36	39.33	38.20
260	6.37	39.94	38.85
270	6.37	40.55	39.36
280	6.38	41.32	39.70
290	6.38	42.31	39.99
300	6.37	43.53	40.47
310	6.37	45.10	40.97
315	6.37	46.16	41.33
320	6.37	47.12	41.78
330	6.36	50.44	42.55
335	6.36	52.46	42.80
340	6.36	55.53	42.92
350	6.36	67.07	42.79
355	6.36	67.44	42.66
360	6.36	63.61	42.38
375	6.35	55.85	41.74
380	6.34	54.59	41.55
385	6.34	53.40	41.39
390	6.34	52.27	41.21
395	6.34	51.49	40.92
400	6.34	51.08	40.62
410	6.34	48.91	39.97
420	6.34	47.20	39.21
430	6.34	45.48	38.64
440	6.34	43.98	38.17
450	6.35	42.73	37.80
460	6.35	41.54	37.45
470	6.36	40.60	36.95
480	6.37	39.67	36.26
490	6.38	38.74	35.51
500	6.40	37.63	34.71

Typical Performance Curves

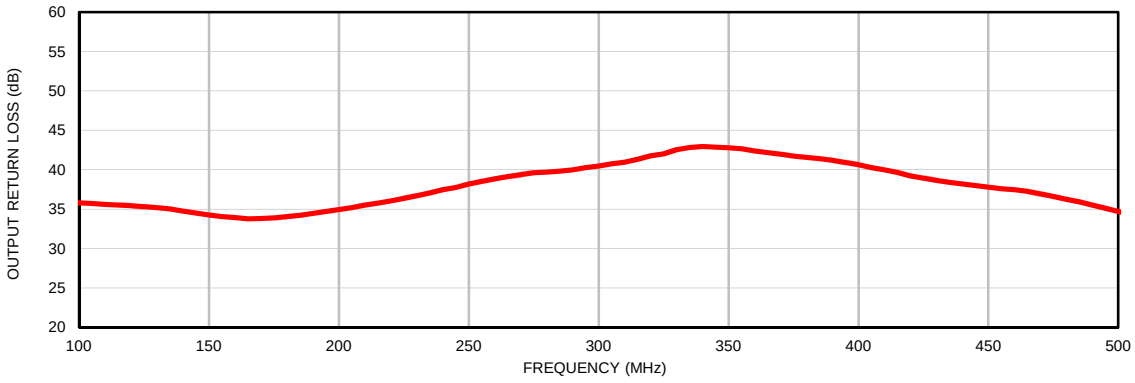
INSERTION LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



INPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm

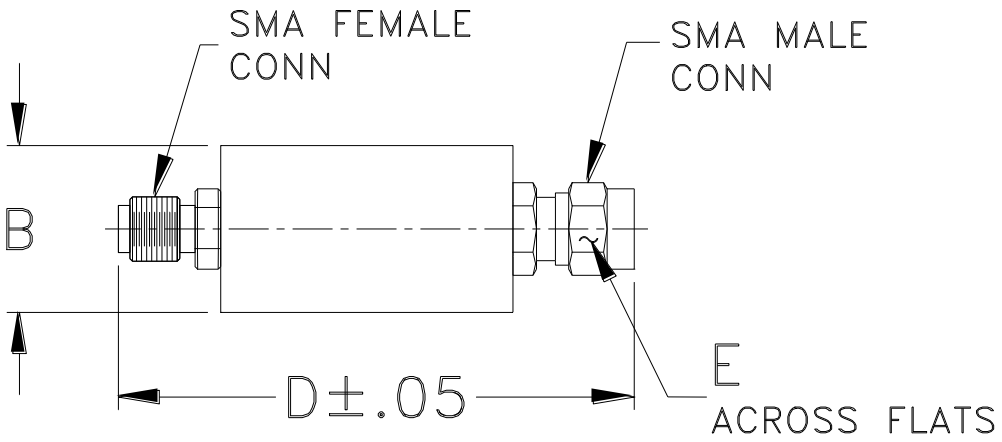


OUTPUT RETURN LOSS vs. TEMPERATURE
INPUT POWER = 0 dBm



FF56
FF99

Outline Dimensions



CASE #.	A	B	C	D	E	WT GRAMS
FF56	--	.46 (11.68)	--	1.70 (43.18)	.312 (7.92)	18.0
FF99	--	.70 (17.78)	--	1.98 (50.29)		42.0

Dimensions are in inches (mm). Tolerances: 2Pl. ± .03; 3Pl. ± .015

Notes:
1. Case material: Brass.
2. Case finish: Nickel plate.

Mini-Circuits

Environmental Specifications ENV28

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
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