



Mini-Circuits®

MINIATURE CERAMIC

Fixed Attenuator

PAT-0+

50Ω 1 W 0 dB DC to 7 GHz

FEATURES

- Wideband, DC to 7 GHz
- Excellent VSWR Through Entire Band
- Miniature Size
- Aqueous Washable

APPLICATIONS

- Power Leveling
- Impedance Match Improvement



Generic photo used for illustration purposes only

CASE STYLE: AF320

+RoHS Compliant

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

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Condition (GHz)	Min.	Typ.	Max.	Unit
Frequency Range		DC		7	GHz
Attenuation, Nominal			0+0.2		dB
Attenuation, Flatness ¹	DC - 1			0.2	dB
	DC - 2.5			0.4	
	DC - 7			0.7	
VSWR	DC - 1			1.2	:1
	DC - 2.5			1.3	
	DC - 7			1.65	
Input Power ²				1.0	W

1. Flatness = variation over band divided by 2.

2. RF power at +25°C case temperature: 1 Watt. Derate linearly to 0.1 Watt at +100°C.

ABSOLUTE 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.

REV. J
ECO-024219
PAT-0+
MCL NY
250114





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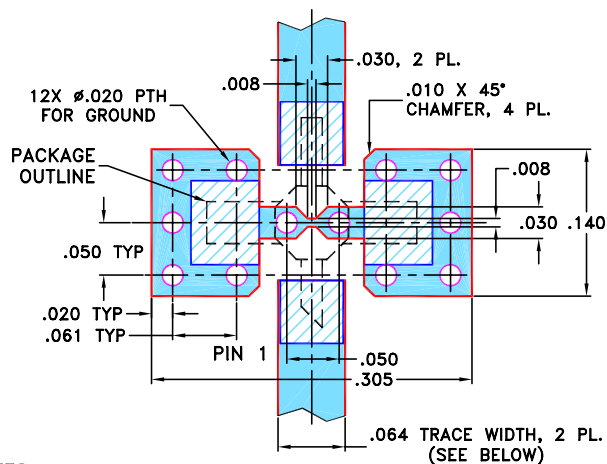
PAT-0+

50Ω 1 W 0 dB DC to 7 GHz

PIN CONNECTIONS

INPUT	1
OUTPUT	3
GROUND	2,4

DEMO BOARD MCL P/N: TB-319
SUGGESTED PCB LAYOUT (PL-208)

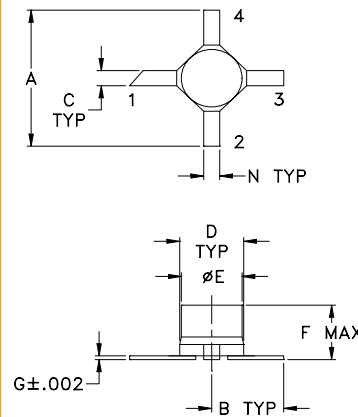


NOTES:

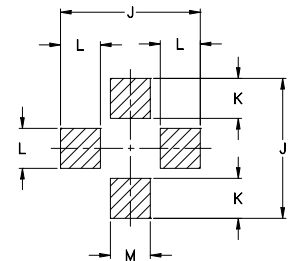
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $.030'' \pm .002''$; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

-  DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
-  DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

OUTLINE DRAWING



PCB Land Pattern



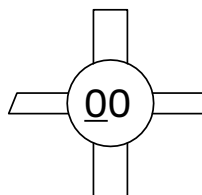
Suggested Layout,
Tolerance to be within $\pm .002$

OUTLINE DIMENSIONS (Inch/mm)

A	B	C	D	E	F	G
.200	.100	.020	.070	.068	.057	.005
5.08	2.54	0.51	1.78	1.73	1.45	0.13
H	J	K	L	M	N	wt
--	.230	.065	.060	.080	.040	grams
--	5.84	1.65	1.52	2.03	1.02	0.04

TAPE & REEL INFORMATION: F26

PRODUCT MARKING



Marking may contain other features or characters for internal lot control

Mini-Circuits

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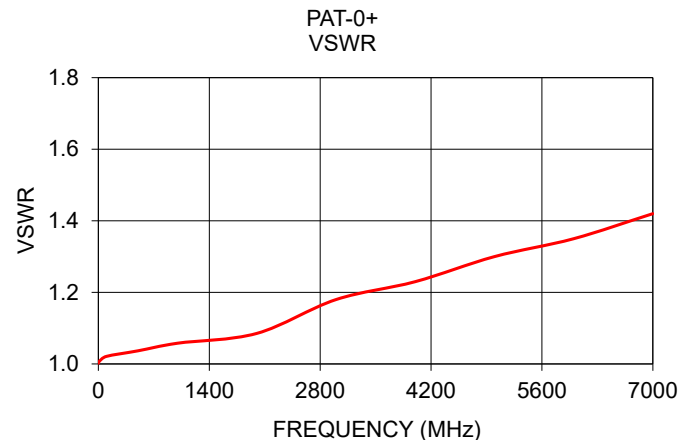
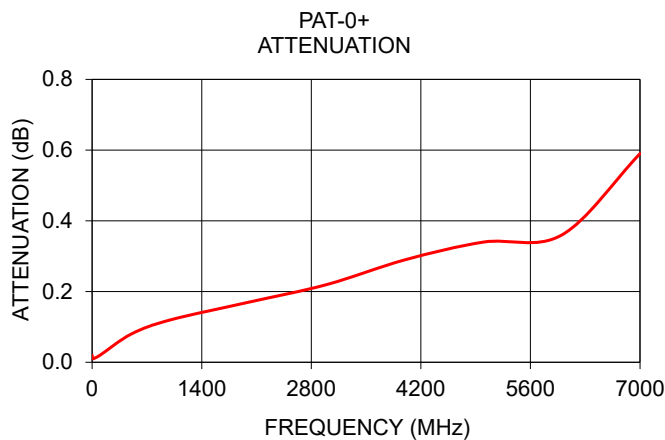


Fixed Attenuator

50Ω 1 W 0 dB DC to 2.5 GHz

TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Attenuation (dB)	VSWR (:1)
1.00	0.02	1.00
10.00	0.01	1.01
100.00	0.02	1.02
500.00	0.08	1.04
1000.00	0.12	1.06
2000.00	0.17	1.09
3000.00	0.22	1.18
4000.00	0.29	1.23
5000.00	0.34	1.30
6000.00	0.36	1.35
7000.00	0.59	1.42



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-Circuits' 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

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