



Mini-Circuits®

MINIATURE CERAMIC

Fixed Attenuator

PAT-10+

50Ω 1 W 10 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			10±0.4		dB
Attenuation, Flatness ¹	DC - 1			0.4	dB
	DC - 2.5			0.6	
	DC - 7			1.7	
VSWR	DC - 1			1.3	:1
	DC - 2.5			1.4	
	DC - 7			1.5	
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-10+
MCL NY
250114





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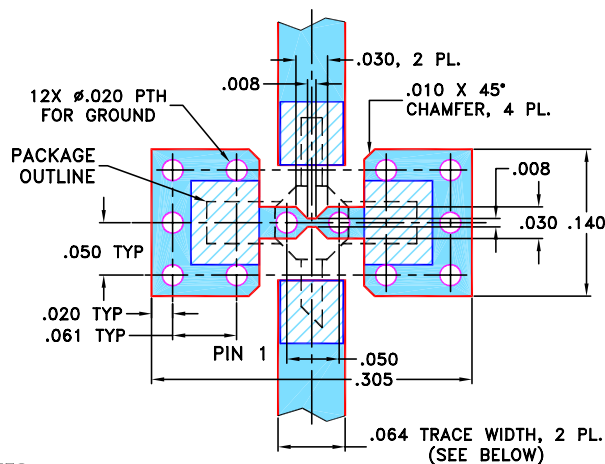
PAT-10+

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PIN CONNECTIONS

INPUT	1
OUTPUT	3
GROUND	2,4

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

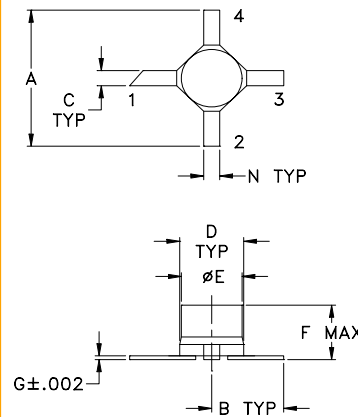


NOTES:

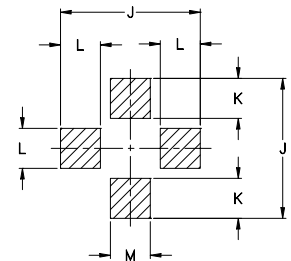
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $.030" \pm .002"$; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

OUTLINE DRAWING



PCB Land Pattern



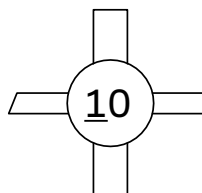
Suggested Layout,
Tolerance to be within $\pm .002$

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

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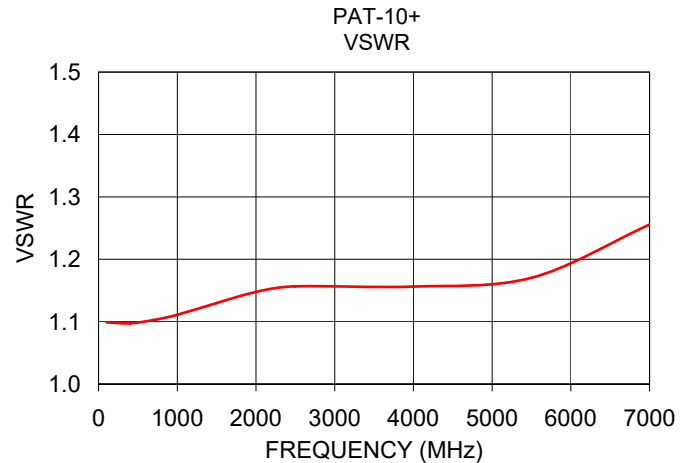
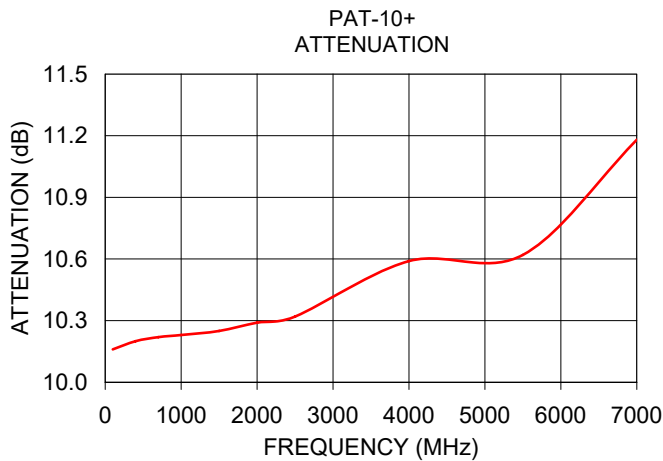
Fixed Attenuator

PAT-10+

50Ω 1 W 10 dB DC to 2.5 GHz

TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Attenuation (dB)	VSWR (:1)
100.00	10.16	1.10
399.70	10.20	1.10
699.40	10.22	1.10
1000.00	10.23	1.11
1500.40	10.25	1.13
2000.80	10.29	1.15
2500.00	10.32	1.16
4000.30	10.59	1.16
5500.60	10.62	1.17
7000.00	11.18	1.26



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-Circuits' 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/terms/viewterm.html



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