



# Fixed Attenuator

50Ω 0.5 W 2 dB DC to 2.5 GHz

### FEATURES

- Wideband, DC to 2.5 GHz
- Excellent VSWR Through Entire Band
- Miniature Size, SOT143 Package
- Aqueous Washable

### APPLICATIONS

- Cellular
- PCS
- ISM
- VHF/UHF



Generic photo used for illustration purposes only

CASE STYLE: MMM168

#### +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		2.5	GHz
Attenuation, Nominal			2±0.3		dB
Attenuation, Flatness <sup>1</sup>	DC - 0.5			0.3	dB
	DC - 1			0.4	
	DC - 2.5			0.7	
VSWR	DC - 0.5			1.2	:1
	DC - 1			1.3	
	DC - 2.5			1.5	
Input Power <sup>2</sup>				0.5	W

1. Flatness = variation over band divided by 2.

2. RF power at +25°C case temperature: ½ Watt. Derate linearly to 0.2 Watt at +85°C.

### ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-55°C to +85°C
Storage Temperature	-55°C to +100°C

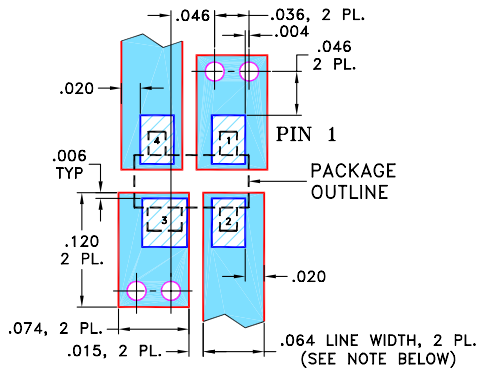
Permanent damage may occur if any of these limits are exceeded.



### PAD CONNECTIONS

INPUT	4
OUTPUT	2
GROUND	1,3

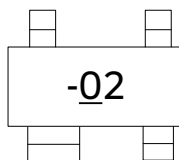
### DEMO BOARD MCL P/N: TB-39 SUGGESTED PCB LAYOUT (PL-225)



- NOTES:** 1. 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.  
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

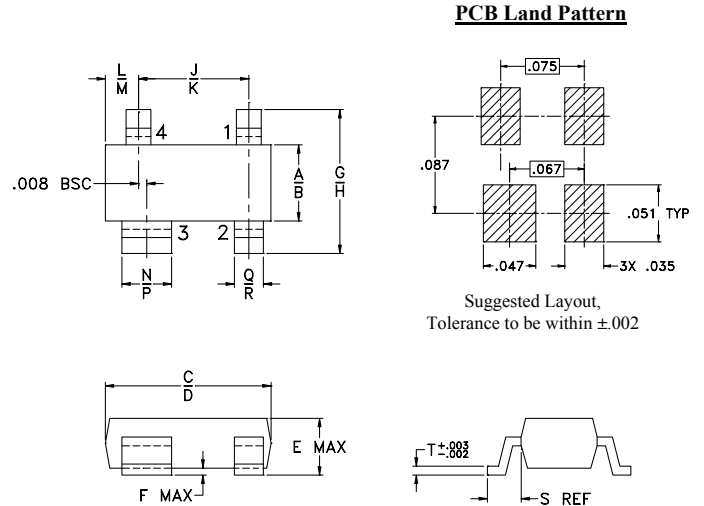
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### PRODUCT MARKING



Marking may contain other features or characters for internal lot control

### OUTLINE DRAWING



### OUTLINE DIMENSIONS (Inch/mm)

A	B	C	D	E	F	G	H	J	K
.045	.055	.105	.120	.047	.005	.083	.104	.070	.080
1.14	1.40	2.67	3.05	1.19	0.13	2.11	2.64	1.78	2.03
L	M	N	P	Q	R	S	T	wt	
.018	.024	.030	.036	.015	.021	.023	.005	grams	
0.46	0.61	0.76	0.91	0.38	0.53	0.58	0.13	0.01	

### TAPE & REEL INFORMATION: F8

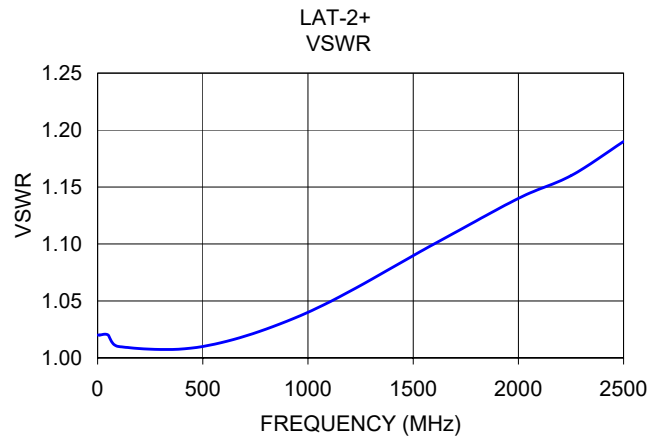
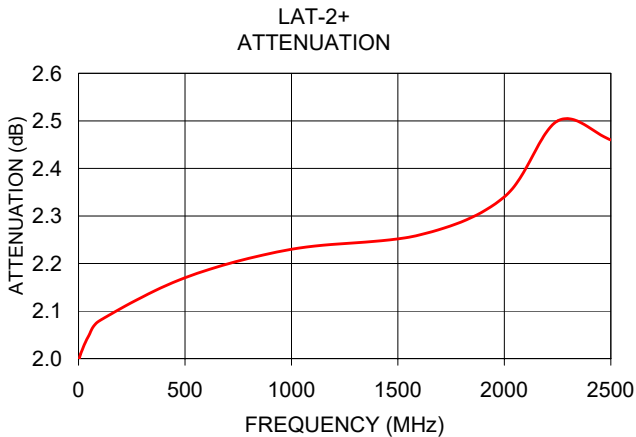


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### TYPICAL PERFORMANCE DATA AND CHARTS

Frequency (MHz)	Attenuation (dB)	VSWR (:1)
1.00	1.99	1.02
10.00	2.01	1.02
50.00	2.05	1.02
100.00	2.08	1.01
500.00	2.17	1.01
1000.00	2.23	1.04
1600.00	2.26	1.10
2000.00	2.34	1.14
2250.00	2.50	1.16
2500.00	2.46	1.19



#### 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](http://www.minicircuits.com/terms/viewterm.html)