

# Miniature Surface Mount Fixed Attenuator

## LAT-9+

50Ω 0.5W 9dB DC to 2500 MHz



CASE STYLE: MMM168  
PRICE: \$1.95 ea. QTY (10-49)

### Maximum 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.

### Pin Connections

INPUT	4
OUTPUT	2
GROUND	1,3

### Features

- wideband, DC to 2500 MHz
- excellent VSWR, through entire band
- miniature size, SOT143 package
- aqueous washable

### Applications

- cellular
- PCS
- ISM
- VHF/UHF

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

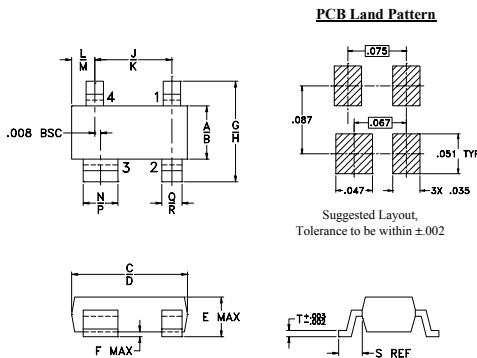
The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

### Electrical Specifications at 25°C

FREQ. RANGE (MHz)	ATTENUATION (dB) Flatness, Max.	VSWR (:1) Max.			MAX. INPUT POWER <sup>1</sup> (W)
		DC-0.5 GHz	DC-1 GHz	DC-2.5 GHz	
$f_L$ - $f_U$	Nom.	DC-0.5 GHz	DC-1 GHz	DC-2.5 GHz	
DC-2500	9±0.4	0.3	0.5	0.8	1.3, 1.4, 1.5

1. RF power at 25°C case temperature: ½Watt. Derate linearly to 0.2 Watt at 85°C.
2. Flatness= variation over band divided by 2

### Outline Drawing



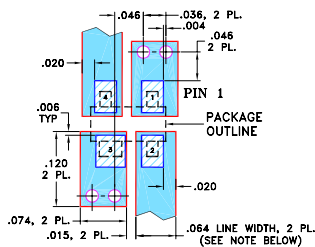
### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	wt
.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	grams		
.018	.24	.030	.036	.015	.021	.023	.005			
0.46	6.10	0.76	0.91	0.38	0.53	0.58	0.13	0.01		

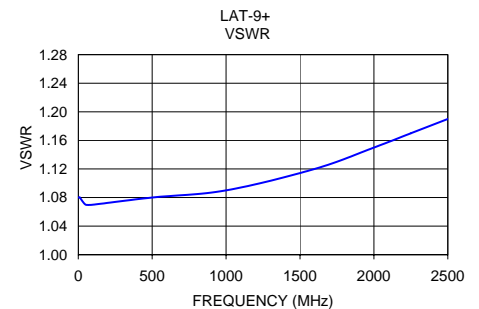
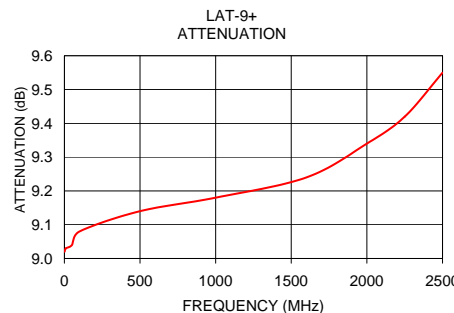
### Typical Performance Data

Frequency (MHz)	Attenuation (dB)	VSWR (:1)
1.00	9.02	1.08
10.00	9.03	1.08
50.00	9.04	1.07
100.00	9.08	1.07
500.00	9.14	1.08
1000.00	9.18	1.09
1600.00	9.24	1.12
2000.00	9.34	1.15
2250.00	9.42	1.17
2500.00	9.55	1.19

### 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" ± .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



**Mini-Circuits®**  
ISO 9001 ISO 14001 AS 9100 CERTIFIED

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IF/RF MICROWAVE COMPONENTS

For detailed performance specs & shopping online see web site

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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](http://www.minicircuits.com/MCLStore/terms.jsp).

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