

# Miniature Surface Mount Fixed Attenuator

## LAT-0+

50Ω 0.5W 0dB 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)

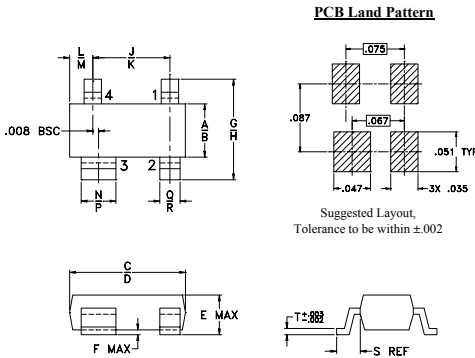
The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

### Electrical Specifications at 25°C

| FREQ. RANGE (MHz) | ATTENUATION (dB)<br>Flatness, Max. | VSWR (:1)<br>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 | 0.5                               |
| DC-2500           | 0+0.15                             | 0.3               | 0.4      | 0.6        |                                   |

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

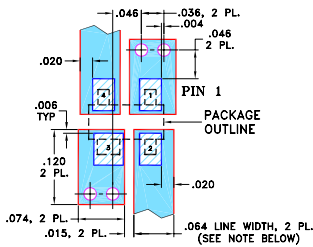
### Outline Drawing



### Outline Dimensions (inch/mm)

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

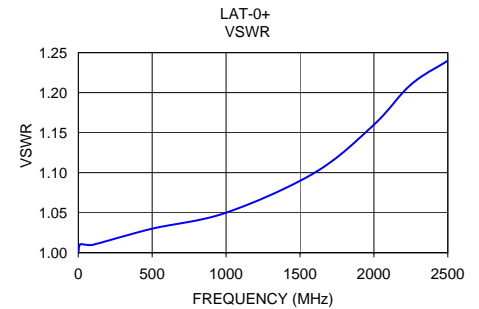
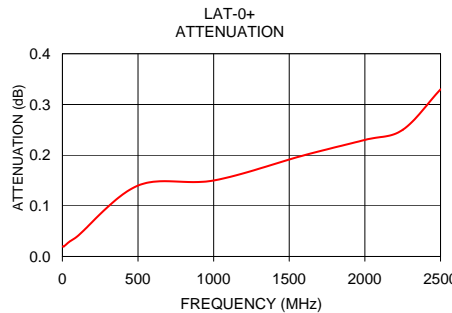
### Demo Board MCL P/N: TB-39 Suggested PCB Layout (PL-225)



- 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

### Typical Performance Data

| Frequency (MHz) | Attenuation (dB) | VSWR (:1) |
|-----------------|------------------|-----------|
| 1.00            | 0.02             | 1.00      |
| 10.00           | 0.02             | 1.01      |
| 50.00           | 0.03             | 1.01      |
| 100.00          | 0.04             | 1.01      |
| 500.00          | 0.14             | 1.03      |
| 1000.00         | 0.15             | 1.05      |
| 1600.00         | 0.20             | 1.10      |
| 2000.00         | 0.23             | 1.16      |
| 2250.00         | 0.25             | 1.21      |
| 2500.00         | 0.33             | 1.24      |



**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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