

# Miniature Ceramic Fixed Attenuator

## PAT-3+

50Ω 1W 3dB DC to 7000 MHz

### Maximum 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.

### Pin Connections

|        |     |
|--------|-----|
| INPUT  | 1   |
| OUTPUT | 3   |
| GROUND | 2,4 |

### Features

- wideband, DC to 7000 MHz
- 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 web site for RoHS Compliance methodologies and qualifications



Available Tape and Reel  
at no extra cost

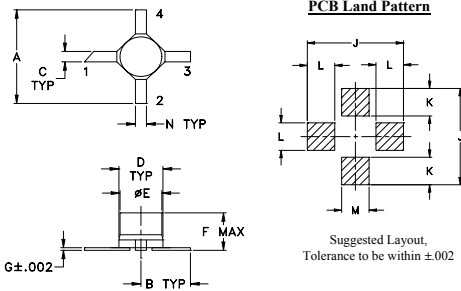
|           |              |
|-----------|--------------|
| Reel Size | Devices/Reel |
| 7"        | 1000         |

### Electrical Specifications at 25°C

| FREQ. RANGE (MHz)              | ATTENUATION (dB)<br>Flatness, Max. | VSWR (:1)<br>Max. |            |                       | MAX. INPUT POWER (W) |     |     |   |
|--------------------------------|------------------------------------|-------------------|------------|-----------------------|----------------------|-----|-----|---|
|                                |                                    | DC-1 GHz          | DC-2.5 GHz | DC-f <sub>u</sub> GHz |                      |     |     |   |
| f <sub>L</sub> -f <sub>u</sub> | Norm.                              | DC-1 GHz          | DC-2.5 GHz | DC-f <sub>u</sub> GHz |                      |     |     |   |
| DC-7000                        | 3±0.3                              | 0.3               | 0.5        | 0.9                   | 1.2                  | 1.3 | 1.4 | 1 |

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

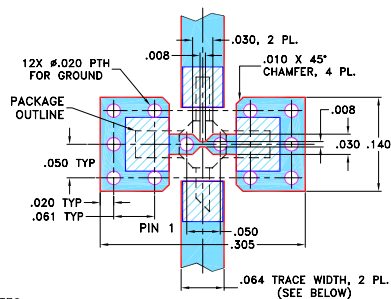
### Outline Drawing



### 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  |

### Demo Board MCL P/N: TB-319 Suggested PCB Layout (PL-208)



#### NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B 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

#### 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/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)

### Typical Performance Data

| Frequency (MHz) | Attenuation (dB) | VSWR (:1) |
|-----------------|------------------|-----------|
| 50.00           | 3.13             | 1.03      |
| 796.25          | 3.18             | 1.04      |
| 1542.50         | 3.20             | 1.03      |
| 2288.75         | 3.24             | 1.03      |
| 3035.00         | 3.44             | 1.08      |
| 3781.25         | 3.28             | 1.09      |
| 4527.50         | 3.31             | 1.09      |
| 5273.75         | 3.41             | 1.08      |
| 6020.00         | 3.50             | 1.06      |
| 7015.00         | 3.76             | 1.15      |

