

# Ceramic Low Pass Filter

## LFCN-1500+

50Ω DC<sup>(1)</sup> to 1500 MHz



CASE STYLE: FV1206

### Maximum Ratings

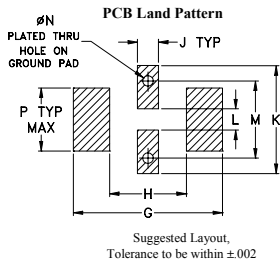
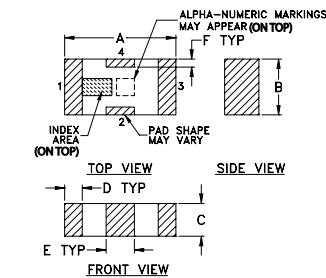
|                       |                  |
|-----------------------|------------------|
| Operating Temperature | -55°C to 100°C   |
| Storage Temperature   | -55°C to 100°C   |
| RF Power Input*       | 10W max. at 25°C |

\* Passband rating, derate linearly to 3.5W at 100°C ambient. Permanent damage may occur if any of these limits are exceeded.

### Pin Connections

|        |     |
|--------|-----|
| RF IN  | 1   |
| RF OUT | 3   |
| GROUND | 2,4 |

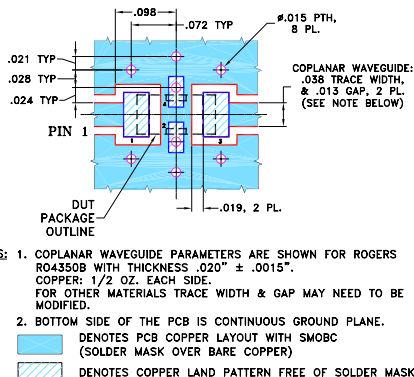
### Outline Drawing



### Outline Dimensions (inch/mm)

| A    | B    | C    | D    | E    | F    | G    |       |
|------|------|------|------|------|------|------|-------|
| .126 | .063 | .037 | .020 | .032 | .009 | .169 |       |
| 3.20 | 1.60 | 0.94 | 0.51 | 0.81 | 0.23 | 4.29 |       |
| H    | J    | K    | L    | M    | N    | P    | wt    |
| .087 | .024 | .122 | .024 | .087 | .012 | .071 | grams |
| 2.21 | 0.61 | 3.10 | 0.61 | 2.21 | 0.30 | 1.80 | .020  |

### Demo Board MCL P/N: TB-270 Suggested PCB Layout (PL-137)



- NOTES:**
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP 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

### Features

- excellent power handling, 10W
- small size
- 7 sections
- temperature stable
- LTCC construction
- protected by U.S Patent 6,943,646

### Applications

- harmonic rejection
- VHF/UHF transmitters/receivers
- lab use

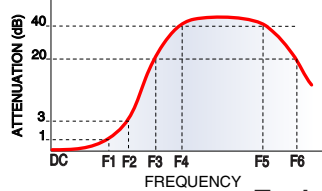
### Electrical Specifications<sup>(1,2)</sup> at 25°C

| Parameter | F#             | Frequency (MHz) | Min.      | Typ. | Max. | Unit |    |
|-----------|----------------|-----------------|-----------|------|------|------|----|
| Pass Band | Insertion Loss | DC-F1           | DC-1500   | —    | —    | 1.0  | dB |
|           | Freq. Cut-Off  | F2              | 1825      | —    | 3.0  | —    | dB |
|           | VSWR           | DC-F1           | DC-1500   | —    | 1.2  | —    | :1 |
| Stop Band | Rejection Loss | F3              | 2100      | 20   | —    | —    | dB |
|           |                | F4-F5           | 2150-6600 | —    | 30   | —    | dB |
|           |                | F6              | 6800      | —    | 20   | —    | dB |
| VSWR      | F3-F6          | 2100-6800       | —         | 20   | —    | :1   |    |

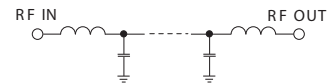
(1) In Application where DC voltage is present at either input or output ports, coupling capacitors are required. Alternatively, if DC pass IN-OUT is required, Mini-Circuits' "D" suffix version of this model will support DC IN-OUT, and provide >100 MOhm isolation to ground.

(2) Measured on Mini-Circuits Characterization Test Board TB-270.

### Typical Frequency Response

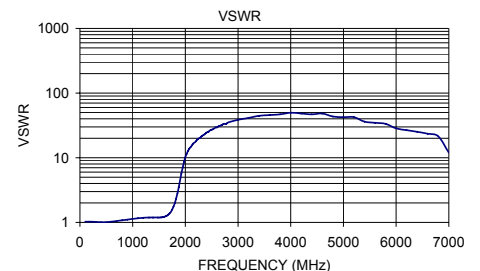


### Electrical Schematic



### Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 100.00          | 0.09                | 1.03      |
| 1000.00         | 0.41                | 1.13      |
| 1500.00         | 0.77                | 1.19      |
| 1700.00         | 1.31                | 1.38      |
| 1825.00         | 2.99                | 2.33      |
| 2000.00         | 16.47               | 10.13     |
| 2100.00         | 34.49               | 14.62     |
| 2150.00         | 35.94               | 16.56     |
| 2500.00         | 37.94               | 27.16     |
| 3000.00         | 31.80               | 38.61     |
| 4000.00         | 42.25               | 49.64     |
| 5000.00         | 43.54               | 42.38     |
| 6000.00         | 36.93               | 28.49     |
| 6800.00         | 28.71               | 21.46     |
| 7000.00         | 16.97               | 12.01     |



### 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-Circuit's 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/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)

