

# Ceramic Low Pass Filter

50Ω DC<sup>(1)</sup> to 400 MHz

## LFCN-400+ LFCN-400



CASE STYLE: FV1206  
PRICE: \$2.99 ea. QTY (20)

**+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" 20, 50, 100, 200, 500, 1000, 3000

### Maximum Ratings

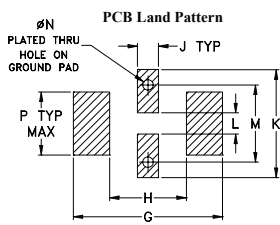
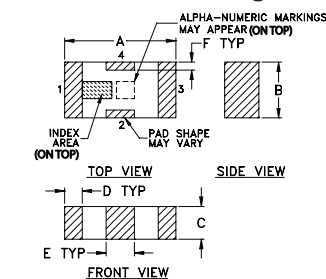
|                       |                   |
|-----------------------|-------------------|
| Operating Temperature | -55°C to 100°C    |
| Storage Temperature   | -55°C to 100°C    |
| RF Power Input*       | 8.5W max. at 25°C |

\* 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

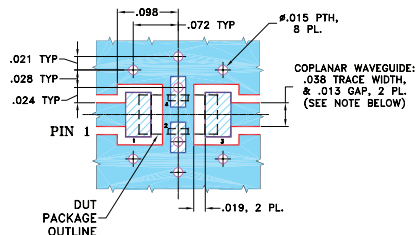


Suggested Layout, Tolerance to be within ±0.02

### 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, 8.5W
- small size
- 7 sections
- temperature stable
- LTCC construction
- protected by U.S. Patent 6,943,646

### Applications

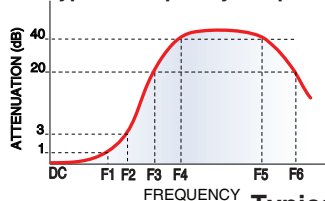
- harmonic rejection
- VHF/UHF transmitters/receivers
- RF suppression for DC lines on PCB
- anti-aliasing for A/D converter

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

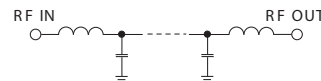
| Parameter | F#             | Frequency (MHz) | Min.     | Typ. | Max. | Unit |    |
|-----------|----------------|-----------------|----------|------|------|------|----|
| Pass Band | Insertion Loss | DC-F1           | DC-400   | —    | —    | 1.0  | dB |
|           | Freq. Cut-Off  | F2              | 560      | —    | 3.0  | —    | dB |
|           | VSWR           | DC-F1           | DC-400   | —    | 1.2  | —    | :1 |
| Stop Band | Rejection Loss | F3              | 660      | 20   | —    | —    | dB |
|           |                | F4-F5           | 680-3000 | —    | 40   | —    | dB |
|           |                | F6              | 5500     | —    | 20   | —    | dB |
| VSWR      | F3-F6          | 660-5500        | —        | 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.

### Typical Frequency Response

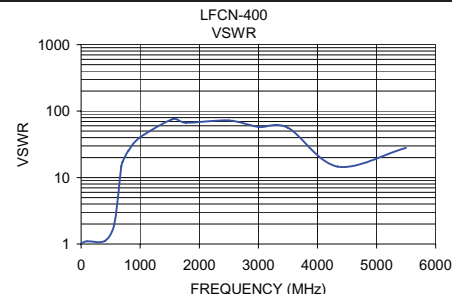
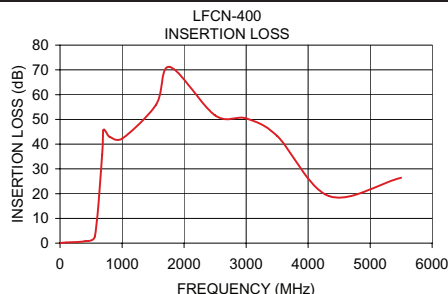


### Electrical Schematic



### Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 1.00            | 0.06                | 1.02      |
| 100.00          | 0.25                | 1.10      |
| 400.00          | 0.76                | 1.11      |
| 560.00          | 2.71                | 1.97      |
| 680.00          | 35.71               | 14.74     |
| 700.00          | 45.62               | 17.22     |
| 800.00          | 42.97               | 25.19     |
| 1000.00         | 42.26               | 40.41     |
| 1550.00         | 55.94               | 75.53     |
| 1770.00         | 71.17               | 66.82     |
| 2500.00         | 51.63               | 72.39     |
| 3000.00         | 50.38               | 57.91     |
| 3500.00         | 43.35               | 56.04     |
| 4340.00         | 18.96               | 14.62     |
| 5500.00         | 26.38               | 28.03     |



For detailed performance specs & shopping online see web site



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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-Circuits' 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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