

Ceramic

# Low Pass Filter

# LFCN-5000

50Ω DC<sup>(1)</sup> to 5000 MHz



Generic photo used for illustration purposes only

CASE STYLE: FV1206

## Maximum Ratings

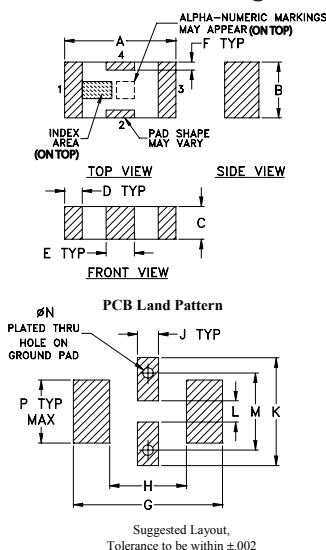
|                       |                 |
|-----------------------|-----------------|
| Operating Temperature | -55°C to 100°C  |
| Storage Temperature   | -55°C to 100°C  |
| RF Power Input*       | 9W max. at 25°C |

\* Passband rating, derate linearly to 3W 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



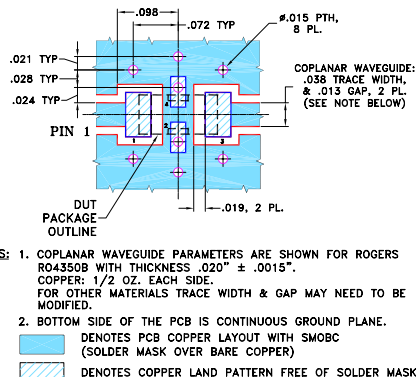
## Outline Dimensions (inch)

| 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:
- 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.
  - 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, 9W
- small size
- 7 sections
- temperature stable
- LTCC construction
- protected by U.S. Patent 6,943,646

## Applications

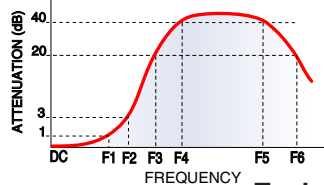
- harmonic rejection
- VHF/UHF transmitters/receivers
- lab use

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

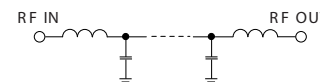
| Parameter | F#             | Frequency (MHz) | Min.       | Typ. | Max. | Unit |    |
|-----------|----------------|-----------------|------------|------|------|------|----|
| Pass Band | Insertion Loss | DC-F1           | DC-5000    | —    | —    | 1.0  | dB |
|           | Freq. Cut-Off  | F2              | 5580       | —    | 3.0  | —    | dB |
|           | VSWR           | DC-F1           | DC-5000    | —    | 1.2  | —    | :1 |
| Stop Band | Rejection Loss | F3              | 6850       | 20   | —    | —    | dB |
|           |                | F4-F5           | 7050       | —    | 30   | —    | dB |
|           | VSWR           | F6              | 18000      | —    | 20   | —    | dB |
|           |                | F3-F6           | 6850-18000 | —    | 20   | —    | :1 |

- (1) In Applications where DC isolation to ground is required, coupling capacitors are recommended to avoid DC leakage. 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

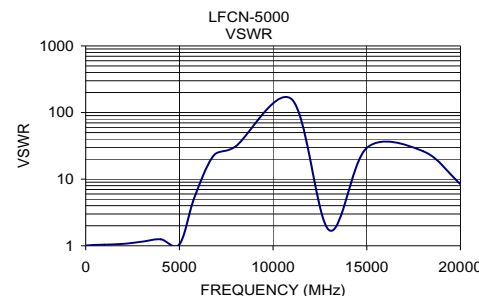
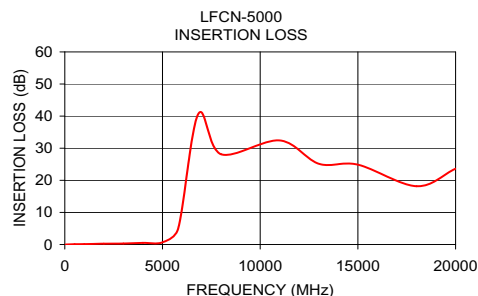


## Electrical Schematic



## Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 50.00           | 0.01                | 1.01      |
| 500.00          | 0.10                | 1.03      |
| 1000.00         | 0.14                | 1.04      |
| 2000.00         | 0.26                | 1.07      |
| 3000.00         | 0.31                | 1.15      |
| 4000.00         | 0.51                | 1.25      |
| 5000.00         | 0.68                | 1.05      |
| 5800.00         | 4.91                | 5.30      |
| 6830.00         | 40.67               | 22.58     |
| 8000.00         | 28.12               | 31.03     |
| 11000.00        | 32.43               | 157.93    |
| 13000.00        | 25.15               | 1.71      |
| 15000.00        | 24.88               | 29.46     |
| 18000.00        | 18.17               | 26.33     |
| 20000.00        | 23.63               | 8.43      |



## 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-Circuit's 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)

