

# Ceramic Low Pass Filter

50Ω

DC to 630 MHz

LFCN-630D+



## Maximum Ratings

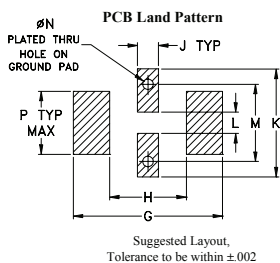
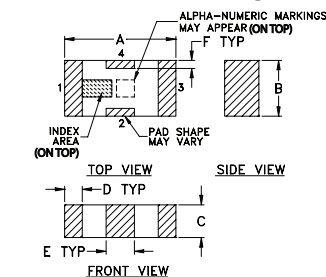
|                             |                   |
|-----------------------------|-------------------|
| Operating Temperature       | -55°C to 100°C    |
| Storage Temperature         | -55°C to 100°C    |
| RF Power Input*             | 8.5W max. at 25°C |
| Max. DC Voltage at pins 1&3 | 25 VDC            |
| DC Current Input to Output  | 0.5A max. at 25°C |

\* 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 |

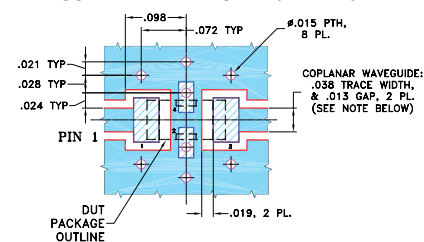
## Outline Drawing



## Outline Dimensions (inch)

| 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     |
| .087 | .024 | .122 | .024 | .087 | .012 | .071  |
| 2.21 | 0.61 | 3.10 | 0.61 | 2.21 | 0.30 | 1.80  |
| wt   |      |      |      |      |      | grams |
|      |      |      |      |      |      | .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

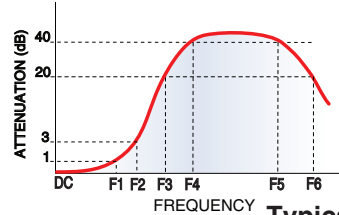
## Electrical Specifications<sup>1,2</sup> at 25°C

| Parameter | F#             | Frequency (MHz) | Min.   | Typ. | Max. | Unit |
|-----------|----------------|-----------------|--------|------|------|------|
| Pass Band | Insertion Loss | DC-F1           | DC-630 | —    | 1.0  | dB   |
|           | Freq. Cut-Off  | F2              | 830    | 3.0  | —    | dB   |
|           | VSWR           | DC-F1           | DC-630 | 1.2  | —    | :1   |
| Stop Band | Rejection Loss | F3              | 1020   | 20   | —    | dB   |
|           | F4-F5          | 1050-3500       | —      | 40   | —    | dB   |
|           | F6             | 6000            | —      | 20   | —    | dB   |
| VSWR      | F3-F6          | 1020-6000       | —      | 20   | —    | :1   |

(1) DC Resistance to ground is 100 Mohms min.

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

## Typical Frequency Response

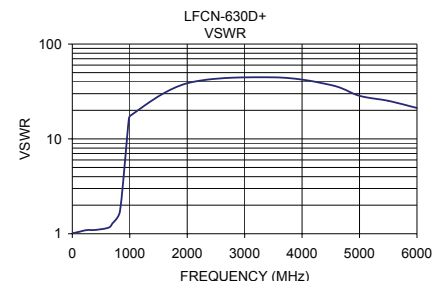
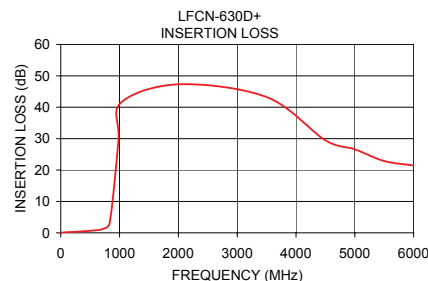


## Electrical Schematic



## Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 1.00            | 0.05                | 1.01      |
| 100.00          | 0.18                | 1.04      |
| 250.00          | 0.33                | 1.09      |
| 400.00          | 0.48                | 1.10      |
| 630.00          | 0.88                | 1.16      |
| 700.00          | 1.16                | 1.29      |
| 830.00          | 2.99                | 1.73      |
| 980.00          | 29.14               | 15.39     |
| 1020.00         | 41.38               | 17.75     |
| 2000.00         | 47.29               | 38.61     |
| 3500.00         | 43.24               | 44.55     |
| 4500.00         | 29.47               | 36.97     |
| 5000.00         | 26.58               | 28.49     |
| 5500.00         | 22.87               | 25.19     |
| 6000.00         | 21.45               | 21.20     |



## 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)

