



**THE DATASHEET OF
LFCN-6000D+**





CERAMIC

Low Pass Filter

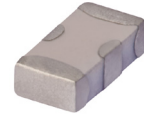
LFCN-6000D+

Mini-Circuits

50Ω DC to 6000 MHz

FEATURES

- Excellent power handling, 9W
- Small size
- 7 sections
- Temperature stable
- LTCC construction
- Protected by U.S Patent 6,943,646



Generic photo used for illustration purposes only

CASE STYLE: FV1206

APPLICATIONS

- Harmonic rejection
- VHF/UHF transmitters/receivers
- Lab use

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

ELECTRICAL SPECIFICATIONS^{1,2} AT 25°C

| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Units | |
|-----------|----------------|-----------------|------------|------|------|-------|----|
| Passband | Insertion Loss | DC-F1 | DC-6000 | — | — | 1.2 | dB |
| | Freq. Cut-Off | F2 | 6800 | — | 3.0 | — | dB |
| | VSWR | DC-F1 | DC-6000 | — | 1.3 | — | :1 |
| Stop Band | Rejection Loss | F3 | 8500 | 20 | — | — | dB |
| | | F4-F5 | 8700-10500 | — | 30 | — | |
| | VSWR | F6 | 18000 | — | 20 | — | :1 |
| | | F3-F6 | 8500-18000 | — | 20 | — | |

1. DC Resistance to ground is 100 Mohms min.

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

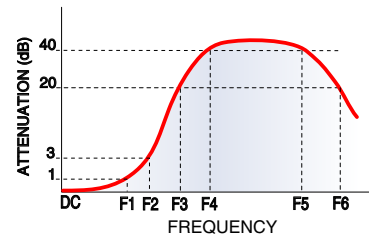
MAXIMUM RATINGS

| Parameter | Ratings |
|-----------------------------|-------------------|
| Operating temperature | -55°C to 100°C |
| Storage temperature | -55°C to 100°C |
| RF Power Input ³ | 9 W max. at 25°C |
| Max. DC Voltage at pins 1&3 | 25 VDC |
| DC Current Input to Output | 0.5A max. at 25°C |

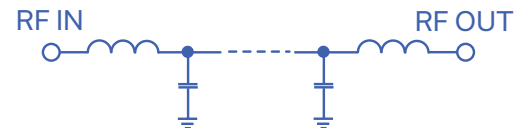
3. Derate linearly to 3W at 100°C ambient.

Permanent damage may occur if any of these limits are exceeded.

TYPICAL FREQUENCY RESPONSE



FUNCTIONAL SCHEMATIC



REV. C
ECO-011362
LFCN-6000D+
RVN/AD/CP/AM
220107



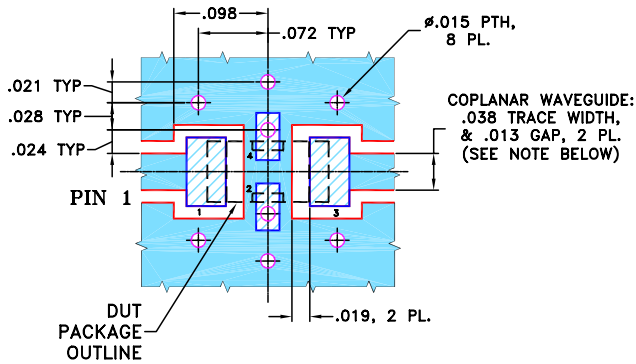


PIN CONNECTIONS

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

PRODUCT MARKING: HC

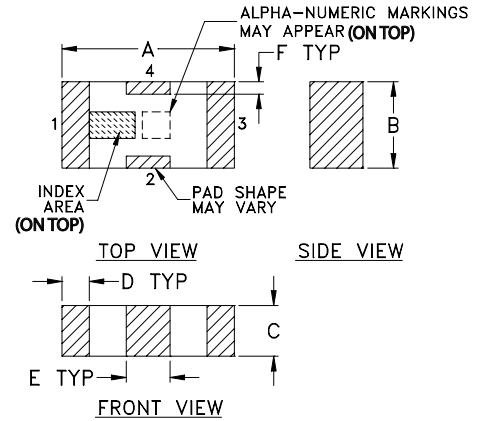
DEMO BOARD MCL P/N: TB-270
SUGGESTED PCB LAYOUT (PL-137)



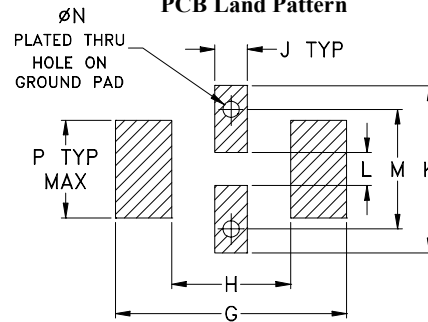
- NOTES:**
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
 2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

OUTLINE DRAWING



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

OUTLINE DIMENSIONS (Inches 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 |

TAPE & REEL INFORMATION: F71



CERAMIC

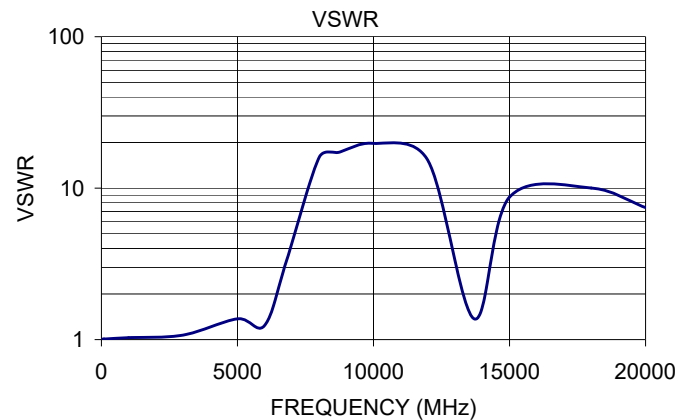
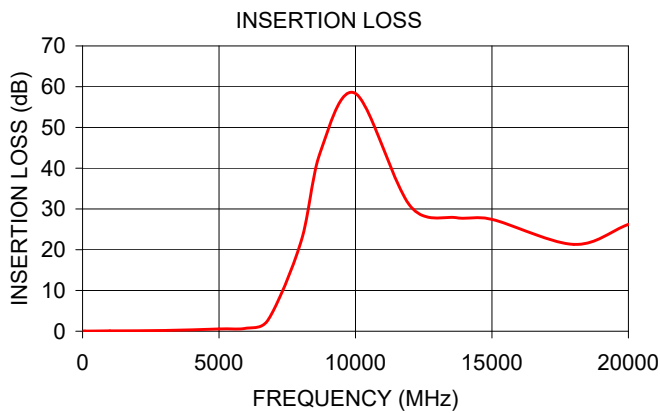
Low Pass Filter

LFCN-6000D+

Mini-Circuits

TYPICAL PERFORMANCE DATA AT 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 50.00 | 0.10 | 1.01 |
| 100.00 | 0.02 | 1.01 |
| 1000.00 | 0.10 | 1.03 |
| 3000.00 | 0.19 | 1.07 |
| 5000.00 | 0.57 | 1.37 |
| 6000.00 | 0.75 | 1.24 |
| 6800.00 | 2.80 | 3.31 |
| 8000.00 | 21.90 | 15.96 |
| 8720.00 | 44.10 | 17.22 |
| 10000.00 | 58.33 | 19.76 |
| 12000.00 | 30.77 | 15.26 |
| 13700.00 | 27.55 | 1.37 |
| 15000.00 | 27.44 | 8.72 |
| 18000.00 | 21.31 | 10.02 |
| 20000.00 | 26.23 | 7.44 |



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



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