



CERAMIC

# Low Pass Filter

## LFCN-160+

50Ω DC<sup>1</sup> to 160 MHz

### FEATURES

- Excellent power handling, 8W
- Small size
- 7 sections
- Temperature stable
- Hermetically sealed
- LTCC construction
- Protected by U.S Patent 6,943,646



Generic photo used for illustration purposes only

CASE STYLE: FV1206

**+RoHS Compliant**

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

### 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. | Units |    |
|-----------|----------------|-----------------|-----------|------|------|-------|----|
| Passband  | Insertion Loss | DC-F1           | DC-160    | —    | —    | 1.0   | dB |
|           | Freq. Cut-Off  | F2              | 230       | —    | 3.0  | —     | dB |
|           | VSWR           | DC-F1           | DC-160    | —    | 1.2  | —     | :1 |
| Stop Band | Rejection Loss | F3-F4           | 330-480   | 20   | —    | —     | dB |
|           |                | F4-F5           | 480-2700  | —    | 35   | —     |    |
|           | VSWR           | F5-F6           | 2700-6100 | —    | 20   | —     | :1 |
|           |                | F3-F6           | 330-6100  | —    | 17   | —     |    |

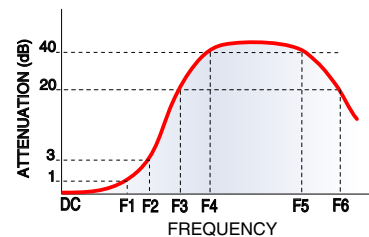
1. In Application where DC voltage is present at either input or output ports, coupling capacitors are required.  
 2. Measured on Mini-Circuits Characterization Test Board TB-270.

### MAXIMUM RATINGS

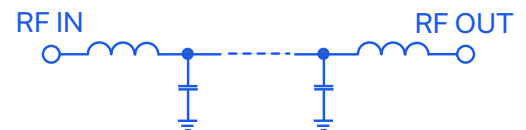
| Parameter                   | Ratings          |
|-----------------------------|------------------|
| Operating temperature       | -55°C to 100°C   |
| Storage temperature         | -55°C to 100°C   |
| RF Power Input <sup>3</sup> | 8 W max. at 25°C |

3. Passband rating, 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. G  
 ECO-013191  
 LFCN-160+  
 RVN/AD/CP/AM  
 220511



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### PIN CONNECTIONS

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

PRODUCT MARKING: RC

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



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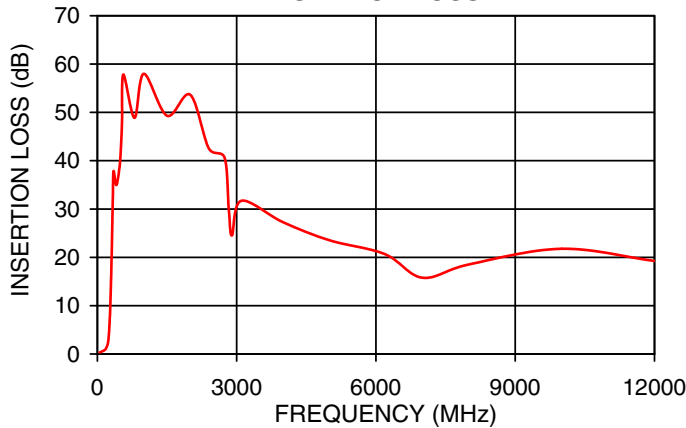
## LFCN-160+

Mini-Circuits

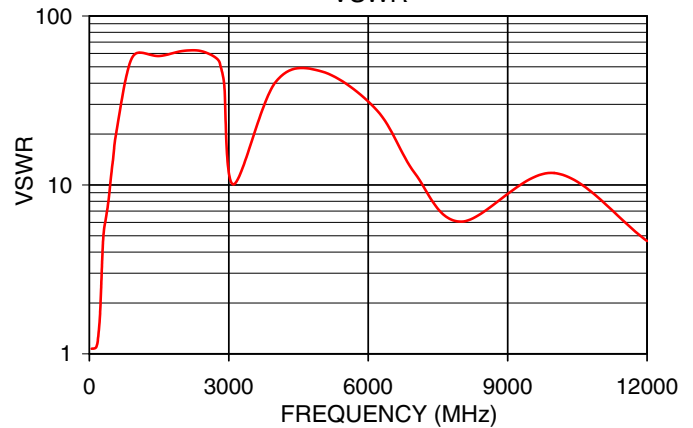
### TYPICAL PERFORMANCE DATA AT 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 40              | 0.29                | 1.07      |
| 100             | 0.53                | 1.07      |
| 150             | 0.77                | 1.09      |
| 160             | 0.85                | 1.11      |
| 210             | 1.60                | 1.41      |
| 230             | 2.50                | 1.74      |
| 260             | 5.92                | 2.80      |
| 280             | 10.64               | 3.89      |
| 310             | 21.67               | 5.22      |
| 330             | 30.84               | 5.74      |
| 350             | 37.58               | 6.13      |
| 480             | 39.25               | 12.26     |
| 1000            | 54.13               | 59.91     |
| 2700            | 41.64               | 56.04     |
| 6100            | 20.85               | 27.59     |
| 9000            | 33.07               | 14.03     |
| 12000           | 19.52               | 4.50      |

LFCN-160+  
INSERTION LOSS



LFCN-160+  
VSWR



#### 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)

