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CERAMIC

# Low Pass Filter

LFCN-120+

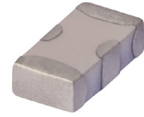
50Ω DC<sup>1</sup> to 120 MHz

## 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



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

## ELECTRICAL SPECIFICATIONS<sup>1,2</sup> AT 25°C

| Parameter |                | F#    | Frequency (MHz) | Min. | Typ. | Max. | Units |
|-----------|----------------|-------|-----------------|------|------|------|-------|
| Passband  | Insertion Loss | DC-F1 | DC-120          | —    | —    | 1.0  | dB    |
|           | Freq. Cut-Off  | F2    | 195             | —    | 3.0  | —    | dB    |
|           | VSWR           | DC-F1 | DC-120          | —    | 1.2  | —    | :1    |
| Stop Band | Rejection Loss | F3    | 280             | 20   | —    | —    | dB    |
|           |                | F4-F5 | 300-1850        | —    | 40   | —    |       |
|           |                | F6    | 4750            | —    | 20   | —    |       |
|           |                | F3-F6 | 280-4750        | —    | 20   | —    |       |

1. In Application where DC voltage is present at either input or output ports, coupling capacitors are required.

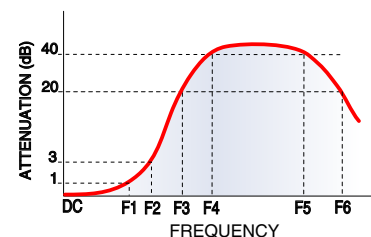
2. Measured on Mini-Circuits Characterization Test Board TB-270.

## MAXIMUM RATINGS

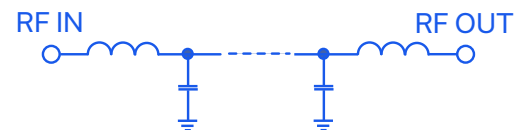
| Parameter                   | Ratings            |
|-----------------------------|--------------------|
| Operating temperature       | -55°C to 100°C     |
| Storage temperature         | -55°C to 100°C     |
| RF Power Input <sup>3</sup> | 8.5 W max. at 25°C |

3. Passband rating, derate linearly to 3.5W at 100°C ambient.  
Permanent damage may occur if any of these limits are exceeded.

## TYPICAL FREQUENCY RESPONSE



## FUNCTIONAL SCHEMATIC



REV. M  
ECO-012840  
LFCN-120+  
RVN/AD/CP/AM  
220415





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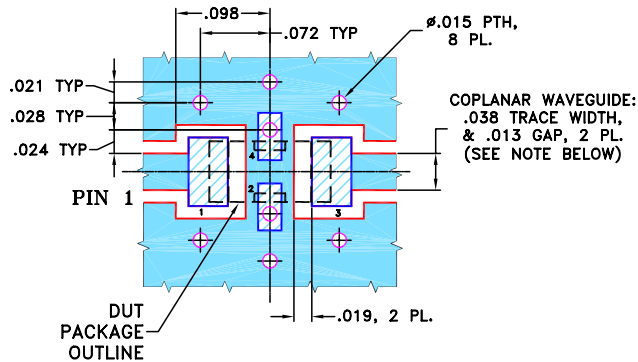
## Low Pass Filter

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## PIN CONNECTIONS

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

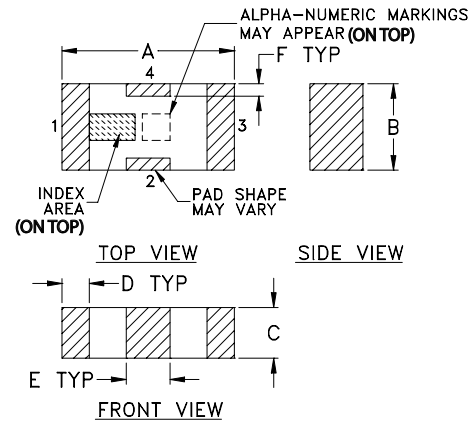
## PRODUCT MARKING: RF

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


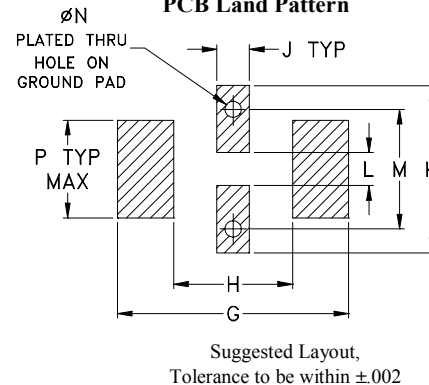
**NOTES:** 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020"  $\pm$  .0015".  
COPPER: 1/2 OZ. EACH SIDE.  
FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.

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  $\pm .002$

## 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 &amp; REEL INFORMATION: F71



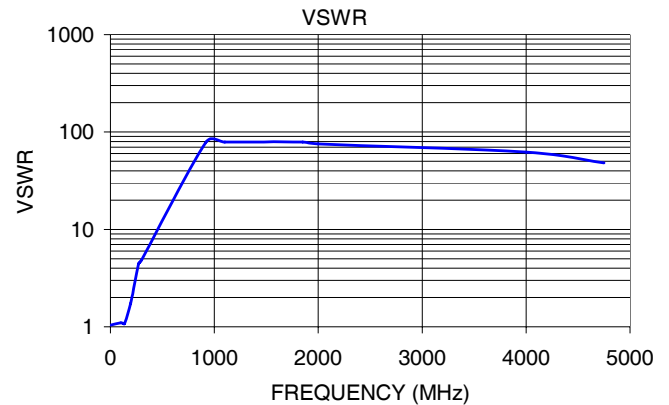
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## TYPICAL PERFORMANCE DATA AT 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 1.00            | 0.13                | 1.04      |
| 100.00          | 0.68                | 1.10      |
| 120.00          | 0.83                | 1.08      |
| 135.00          | 0.96                | 1.08      |
| 195.00          | 2.89                | 1.73      |
| 270.00          | 32.22               | 4.45      |
| 280.00          | 41.07               | 4.55      |
| 285.00          | 44.02               | 4.61      |
| 300.00          | 47.56               | 4.86      |
| 920.00          | 65.79               | 78.97     |
| 1100.00         | 54.38               | 78.97     |
| 1850.00         | 48.59               | 78.97     |
| 2000.00         | 44.58               | 75.53     |
| 4000.00         | 27.36               | 62.05     |
| 4750.00         | 25.27               | 48.26     |



### NOTES

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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