



Mini-Circuits®

CERAMIC

## Low Pass Filter

50Ω

DC to 5850 MHz

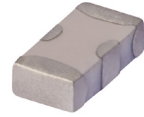
LFCN-5850D+

## FEATURES

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

## APPLICATIONS

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



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-5850    | —    | 2.0  | dB    |
|           | Freq. Cut-Off  | F2              | 6540       | 3.0  | —    | dB    |
|           | VSWR           | DC-F1           | DC-5850    | 1.3  | —    | :1    |
| Stop Band | Rejection Loss | F3              | 7600       | 20   | —    | dB    |
|           |                | F4-F5           | 7100-9900  | —    | —    |       |
|           |                | F6              | 9900-12500 | 20   | —    |       |
|           |                | VSWR            | F3-F6      | 17   | —    |       |

<sup>1</sup>. DC Resistance to ground is 100 Mohms min.<sup>2</sup>. Measured on Mini-Circuits Characterization Test Board TB-270.

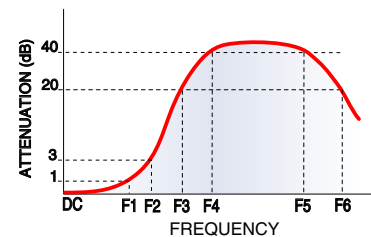
## MAXIMUM RATINGS

| 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  |
| Max. DC Voltage at pins 1&3 | 25 VDC            |
| DC Current Input to Output  | 0.5A max. at 25°C |

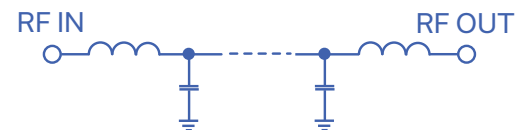
<sup>3</sup>. Derate linearly to 3W at 100°C ambient.

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

## TYPICAL FREQUENCY RESPONSE



## FUNCTIONAL SCHEMATIC



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220202

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**LFCN-5850D+**

## PIN CONNECTIONS

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

PRODUCT MARKING: N/A

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

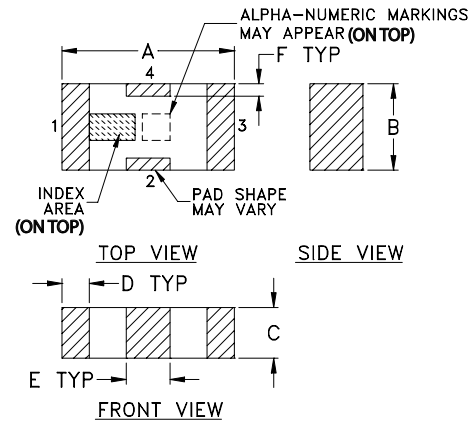


**NOTES:** 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015".  
COPPER: 1/2 OZ. EACH SIDE.  
FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.

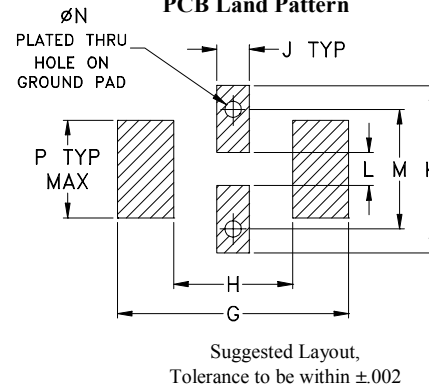
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

## OUTLINE DRAWING



## PCB Land Pattern



## 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



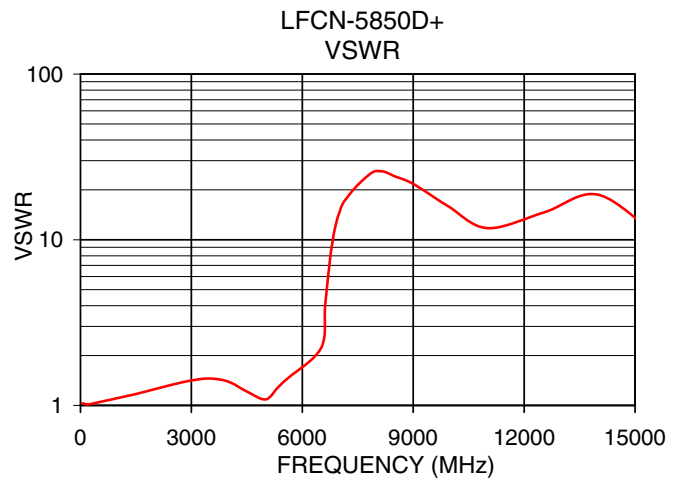
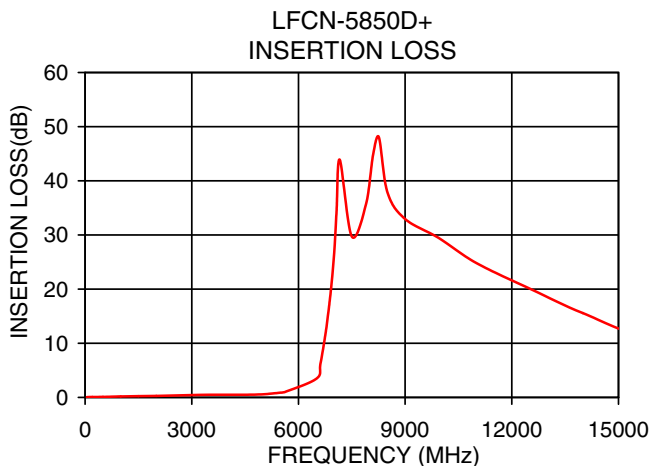
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## TYPICAL PERFORMANCE DATA AT 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 40              | 0.03                | 1.04      |
| 500             | 0.10                | 1.05      |
| 2000            | 0.28                | 1.25      |
| 4000            | 0.50                | 1.39      |
| 5100            | 0.63                | 1.13      |
| 5850            | 1.21                | 1.55      |
| 6400            | 2.10                | 1.35      |
| 6540            | 4.07                | 2.62      |
| 6700            | 9.14                | 6.13      |
| 6900            | 19.10               | 12.09     |
| 7050            | 31.56               | 15.81     |
| 7100            | 40.23               | 16.41     |
| 7600            | 30.23               | 23.18     |
| 9900            | 29.70               | 16.11     |
| 10500           | 25.82               | 11.77     |
| 12500           | 20.25               | 14.38     |
| 15000           | 13.43               | 14.74     |



### 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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