



Mini-Circuits®

CERAMIC

## Low Pass Filter

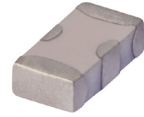
50Ω

DC to 3900 MHz

LFCN-3800D+

## FEATURES

- Excellent power handling, 8W
- 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<sup>1,2</sup> AT 25°C

| Parameter |                | F#    | Frequency (MHz) | Min. | Typ. | Max. | Units |
|-----------|----------------|-------|-----------------|------|------|------|-------|
| Passband  | Insertion Loss | DC-F1 | DC-3900         | —    | —    | 1.5  | dB    |
|           | Freq. Cut-Off  | F2    | 4850            | —    | 3.0  | —    | dB    |
|           | VSWR           | DC-F1 | DC-3900         | —    | 1.3  | —    | :1    |
| Stop Band | Rejection Loss | F3    | 6000            | 20   | —    | —    | dB    |
|           |                | F4-F5 | 5700-8300       | —    | 30   | —    |       |
|           |                | F5-F6 | 8300-13000      | —    | 20   | —    |       |
|           |                | F3-F6 | 6000-13000      | —    | 17   | —    |       |

1. DC Resistance to ground is 100 Mohms min.

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

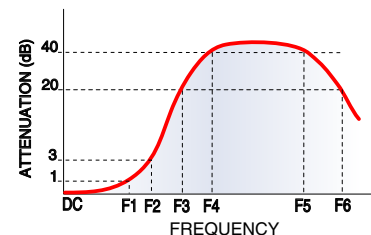
## MAXIMUM RATINGS

| Parameter                     | Ratings           |
|-------------------------------|-------------------|
| Operating temperature         | -55°C to 100°C    |
| Storage temperature           | -55°C to 100°C    |
| RF Power Input <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 |

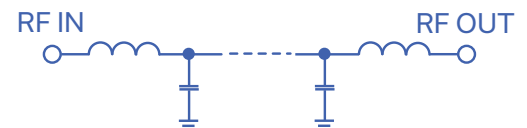
3. Passband rating, derate linearly to 3W at 100°C ambient.

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

## TYPICAL FREQUENCY RESPONSE



## FUNCTIONAL SCHEMATIC



REV. B  
ECO-011331  
LFCN-3800D+  
RVN  
220105





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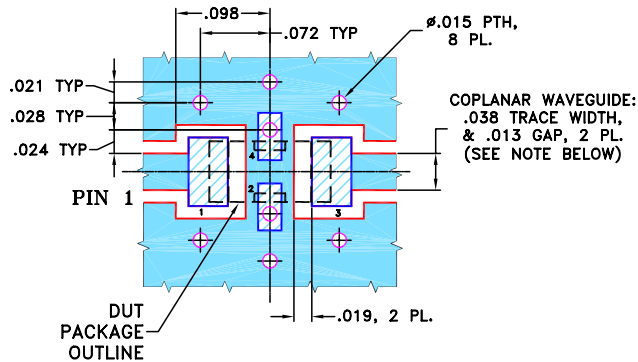
**LFCN-3800D+**

## PIN CONNECTIONS

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

PRODUCT MARKING: N/A

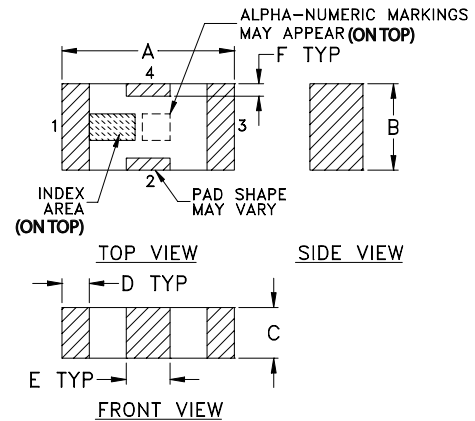
DEMO BOARD MCL P/N: TB-270  
SUGGESTED PCB LAYOUT (PL-137)



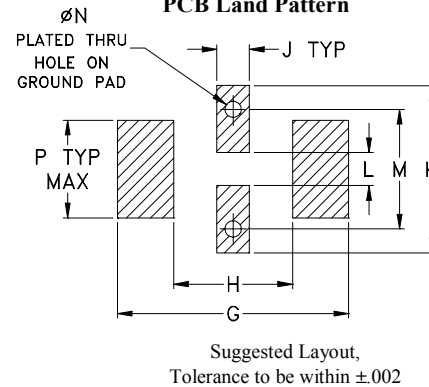
**NOTES:** 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015".  
COPPER: 1/2 OZ. EACH SIDE.  
FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.

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



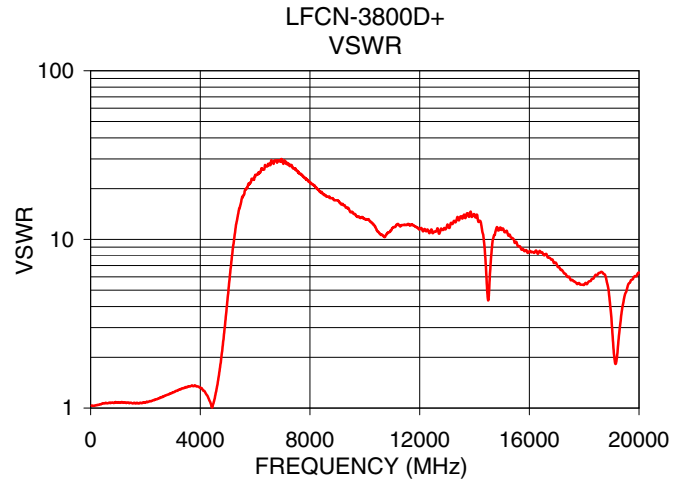
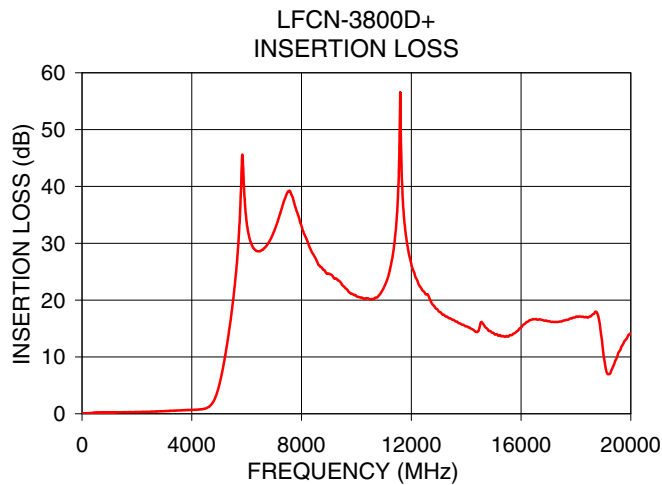
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## TYPICAL PERFORMANCE DATA AT 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 40              | 0.06                | 1.03      |
| 1550            | 0.27                | 1.07      |
| 3060            | 0.48                | 1.25      |
| 3900            | 0.66                | 1.34      |
| 4510            | 0.95                | 1.11      |
| 4760            | 1.93                | 1.95      |
| 4850            | 2.76                | 2.60      |
| 4930            | 3.84                | 3.48      |
| 5120            | 7.65                | 7.05      |
| 5380            | 15.30               | 14.15     |
| 5700            | 30.21               | 20.22     |
| 6000            | 33.71               | 23.49     |
| 8300            | 29.24               | 19.76     |
| 13000           | 18.04               | 12.09     |
| 20000           | 14.19               | 6.35      |



### 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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