



Mini-Circuits®

CERAMIC

## Low Pass Filter

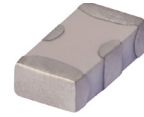
50Ω

DC<sup>1</sup> to 530 MHz

LFCN-530AT+

## FEATURES

- Excellent power handling, 8.5W
- Small size
- 7 sections
- Temperature stable
- LTCC construction
- Protected by U.S Patent 6,943,646
- AEC-Q200 qualified component family



Generic photo used for illustration purposes only

CASE STYLE: FV1206

**+RoHS Compliant**The +Suffix identifies RoHS Compliance.  
See our website for methodologies and qualifications

## APPLICATIONS

- Automotive

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

| Parameter |                | F#    | Frequency (MHz) | Min. | Typ. | Max. | Units |
|-----------|----------------|-------|-----------------|------|------|------|-------|
| Passband  | Insertion Loss | DC-F1 | DC-530          | —    | —    | 1.2  | dB    |
|           | Freq. Cut-Off  | F2    | 700             | —    | 3.0  | —    | dB    |
|           | VSWR           | DC-F1 | DC-530          | —    | 1.2  | —    | :1    |
| Stop Band | Rejection Loss | F3    | 820             | 20   | —    | —    | dB    |
|           |                | F4-F5 | 945-3000        | —    | 40   | —    |       |
|           |                | F6    | 6000            | —    | 20   | —    |       |
|           | VSWR           | F3-F6 | 820-6000        | —    | 20   | —    | :1    |

1. In Applications where DC isolation to ground is required, coupling capacitors are recommended to avoid DC leakage. Alternatively, if DC pass IN-OUT is required, Mini-Circuits' "D" suffix version of this model will support DC IN-OUT, and provide >100 MOhm isolation to ground.

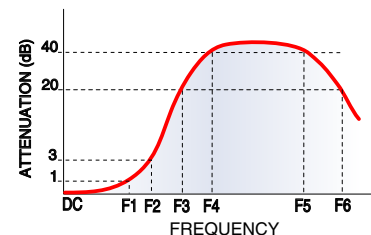
2. Electrical performance measured on TB-270 using LFCN-530+

## ABSOLUTE MAXIMUM RATINGS

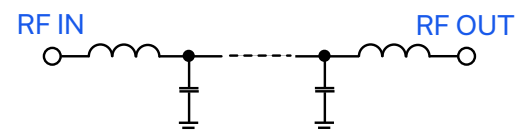
| Parameter                   | Ratings            |
|-----------------------------|--------------------|
| Operating temperature       | -40°C to +105°C    |
| Storage temperature         | -40°C to +105°C    |
| RF Power Input <sup>3</sup> | 10 W max. at +25°C |

3. Passband rating, derate linearly to 3.5W at +105°C ambient.  
Permanent damage may occur if any of these limits are exceeded.

## TYPICAL FREQUENCY RESPONSE



## FUNCTIONAL SCHEMATIC



REV. OR  
NPO-005332  
LFCN-530AT+  
MCL NY  
250609





Mini-Circuits®

CERAMIC

# Low Pass Filter

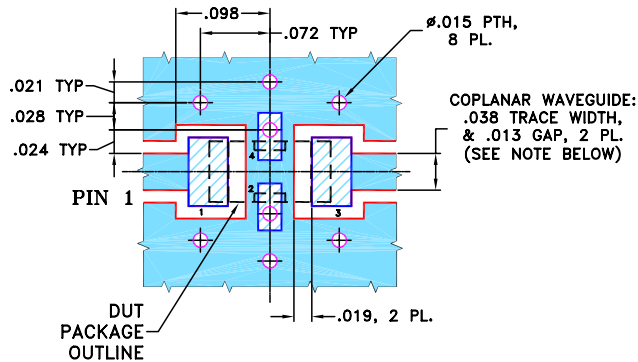
**LFCN-530AT+**

## PIN CONNECTIONS

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

**PRODUCT MARKING:** WY

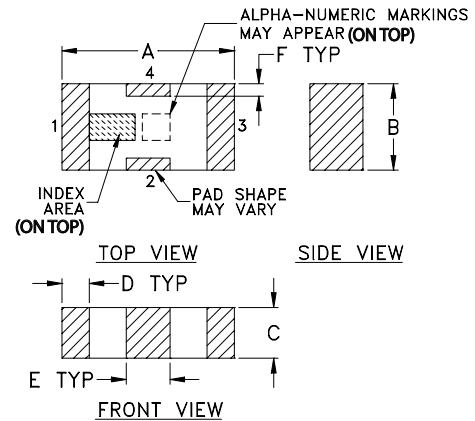
**DEMO BOARD MCL P/N:** TB-270  
**SUGGESTED PCB LAYOUT (PL-137)**



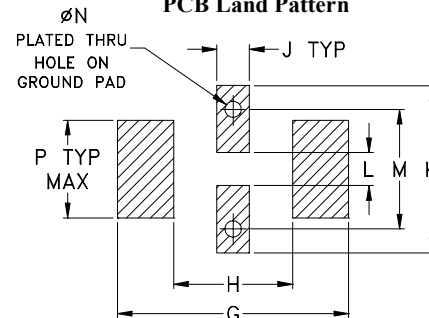
**NOTES:** 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015".  
COPPER: 1/2 OZ. EACH SIDE.  
FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.

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



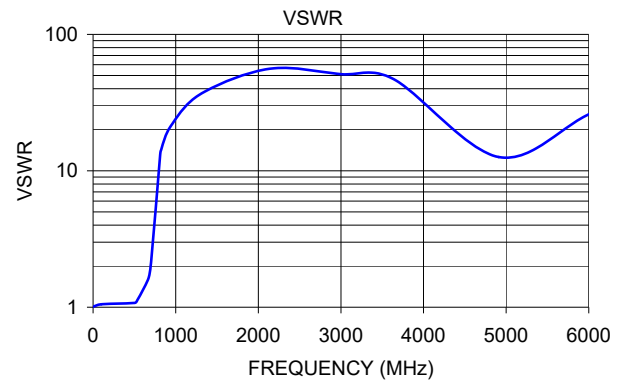
CERAMIC

# Low Pass Filter

LFCN-530AT+

## TYPICAL PERFORMANCE DATA AT 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 1.00            | 0.05                | 1.01      |
| 100.00          | 0.22                | 1.05      |
| 500.00          | 0.73                | 1.07      |
| 530.00          | 0.81                | 1.11      |
| 670.00          | 1.95                | 1.62      |
| 700.00          | 2.89                | 2.08      |
| 815.00          | 26.41               | 13.60     |
| 820.00          | 28.41               | 14.03     |
| 945.00          | 44.98               | 21.46     |
| 1315.00         | 39.77               | 36.97     |
| 2140.00         | 57.51               | 56.04     |
| 3000.00         | 47.94               | 51.10     |
| 3640.00         | 42.84               | 46.96     |
| 4910.00         | 18.81               | 12.61     |
| 6000.00         | 24.80               | 25.94     |



### 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.
- 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/terms/viewterm.html](http://www.minicircuits.com/terms/viewterm.html)

