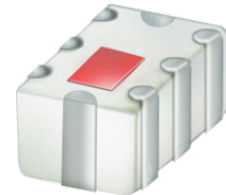


Ceramic Low Pass Filter

LFCG-530+

50Ω DC to 530 MHz



CASE STYLE: GE0805C-2

The Big Deal

- Good rejection, 30 dB typical
- Rugged, ceramic construction
- Tiny size, 0.079 x 0.049 x 0.037" (0805)
- Excellent power handling, 4 W

Product Overview

Mini-Circuits' LFCG-530+ is an LTCC low pass filter with a passband from DC to 530 MHz, supporting a variety of applications. This model provides 1 dB typical passband insertion loss and provides a very good stopband rejection due to strategically constructed layout with minimal interaction between components. It handles up to 4 W RF input power and provides a wide operating temperature range from -40°C to 85°C. Housed in a tiny 0805 ceramic form factor with wraparound terminations, the filter is ideal for dense PCB layouts and with minimal performance variation due to parasitics.

Key Features

| Feature | Advantages |
|--|---|
| Good stopband rejection, 30 dB typical | The LTCC lowpass filter provides a good stopband rejection suitable for high end applications. |
| LTCC Construction | Provides repeatable performance in a rugged, ceramic package well suited for tough environments such as high humidity and temperature extremes. |
| Tiny size (0.079 x 0.049 x 0.037") | Saves space in dense circuit board layouts and minimizes the effects of parasitics. |
| High power handling, 4 W | Supports a wide range of system power requirements. |
| Wrap-around terminations | Provides excellent solderability and easy visual inspection |

Notes

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Ceramic Low Pass Filter

LFCG-530+

50Ω DC to 530 MHz



CASE STYLE: GE0805C-2

+RoHS Compliant

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

Features

- Low loss, 1dB typical
- High rejection 30 dB typical
- Excellent power handling, 4 W
- Extremely small size 0805 (2.0 x 1.25 mm)
- Temperature stable
- LTCC construction

Applications

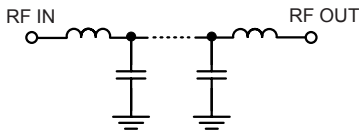
- Harmonic Rejection
- VHF/UHF transmitters / receivers
- RF suppression for DC lines on PCB
- Anti-aliasing for A/D converter

Electrical Specifications^{1,2} at 25°C

| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit | |
|-----------|----------------|-----------------|-------------|------|------|------|----|
| Pass Band | Insertion Loss | DC-F1 | DC - 530 | — | 1.0 | 1.8 | dB |
| | Freq. Cut-Off | F2 | 670 | — | 3.0 | — | dB |
| | VSWR | DC-F1 | DC - 530 | — | 1.2 | — | :1 |
| Stop Band | Rejection Loss | F3-F4 | 980 - 2600 | 25 | 30 | — | dB |
| | | F4-F5 | 2600 - 4000 | — | 25 | — | dB |
| | VSWR | F3-F5 | 980 - 4000 | — | 20 | — | :1 |

1. In Application where DC voltage is present at either input or output port, coupling capacitors are required.
2. Measured on Mini-Circuits Characterization Test Board TB-799+

Functional Schematic



Maximum Ratings

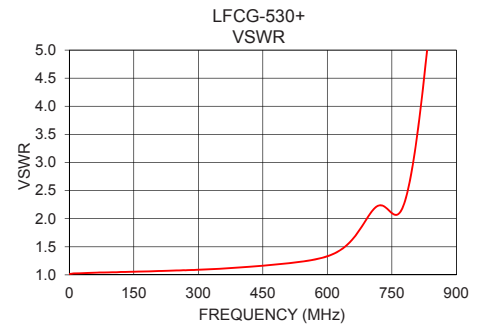
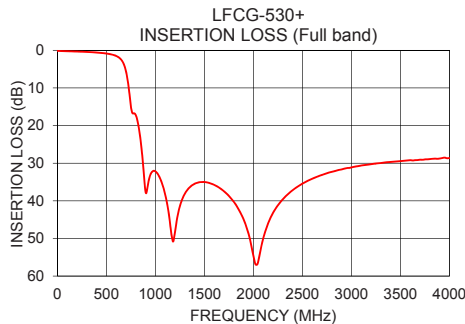
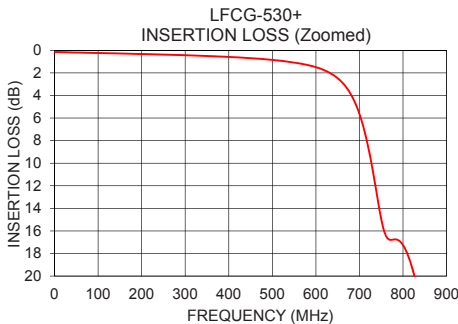
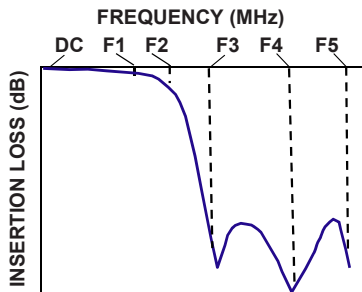
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power Input* | 4 W max. @25°C |

*Passband rating, derate linearly to 2 W at 85°C ambient
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 1 | 0.16 | 1.02 |
| 50 | 0.20 | 1.04 |
| 100 | 0.24 | 1.05 |
| 250 | 0.37 | 1.08 |
| 500 | 0.85 | 1.20 |
| 530 | 0.98 | 1.23 |
| 650 | 2.47 | 1.56 |
| 670 | 3.28 | 1.74 |
| 730 | 10.53 | 2.23 |
| 830 | 20.56 | 4.85 |
| 900 | 37.75 | 10.32 |
| 980 | 32.03 | 15.05 |
| 1000 | 32.17 | 15.94 |
| 1500 | 35.01 | 28.48 |
| 2000 | 54.73 | 39.48 |
| 2600 | 34.12 | 51.77 |
| 3000 | 31.11 | 58.29 |
| 3500 | 29.45 | 65.18 |
| 3750 | 28.99 | 67.17 |
| 4000 | 28.62 | 67.33 |

Typical Frequency Response



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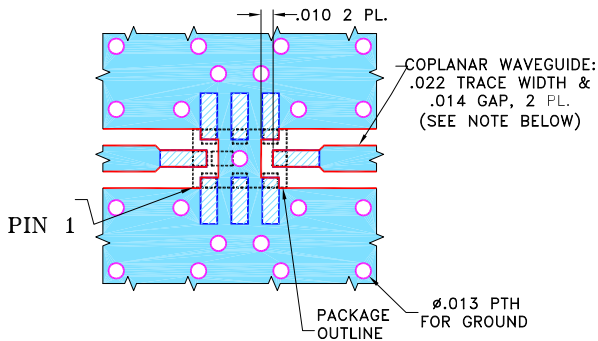
www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

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181112
Page 2 of 3

Pad Connections

| | |
|--------|-------------|
| INPUT | 8 |
| OUTPUT | 4 |
| GROUND | 1,2,3,5,6,7 |

Demo Board MCL P/N: TB-799+
Suggested PCB Layout (PL-429)

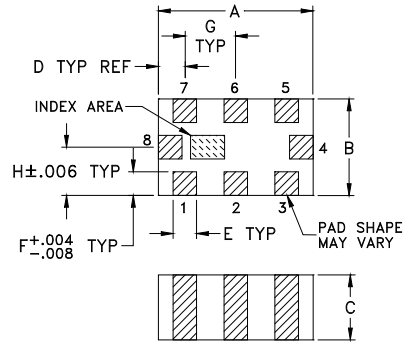


NOTES:

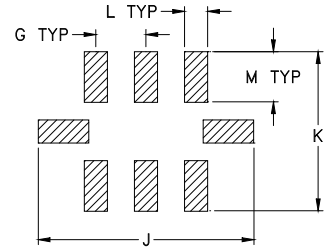
1. COPLANAR WAVEGUIDE IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $.010" \pm .001"$. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- 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 (inch/mm)

| A | B | C | D | E | F | G |
|------|------|------|------|------|-------|------|
| .079 | .049 | .037 | .014 | .012 | .012 | .026 |
| 2.00 | 1.25 | 0.95 | 0.35 | 0.30 | 0.30 | 0.65 |
| H | J | K | L | M | Wt. | |
| .025 | .134 | .110 | .014 | .039 | grams | |
| 0.63 | 3.40 | 2.80 | 0.35 | 1.00 | .008 | |

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