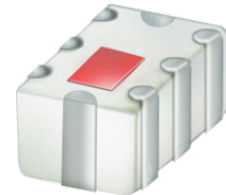


Ceramic Low Pass Filter

LFCG-2250+

50Ω DC to 2250 MHz



CASE STYLE: GE0805C-2

The Big Deal

- Very good rejection, 50 dB typical
- Rugged, ceramic construction
- Tiny size, 0.079 x 0.049 x 0.037" (0805)
- Excellent power handling, 5W

Product Overview

Mini-Circuits' LFCG-2250+ is an LTCC low pass filter with a passband from DC to 2250 MHz, supporting a variety of applications. This model provides 1.2 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 5W 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 |
|---|---|
| Very good stopband rejection, 50 dB typical | The LTCC lowpass filter provides a very good stopband rejection until 15 GHz 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, 5W | 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

50Ω DC to 2250 MHz

LFCG-2250+



CASE STYLE: GE0805C-2

+RoHS Compliant

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

Features

- Low loss, 1.2 dB typical
- High rejection 50 dB typical
- Excellent power handling, 5W
- Extremely small size 0805 (2.0 x 1.25 mm)
- Temperature stable
- LTCC construction

Applications

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

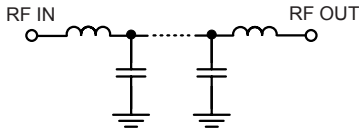
Electrical Specifications^{1,2} at 25°C

| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit | |
|-----------|----------------|-----------------|------------|------|------|------|----|
| Pass Band | Insertion Loss | DC-F1 | DC-2250 | — | 1.2 | 2.0 | dB |
| | Freq. Cut-Off | F2 | 2500 | — | 3.0 | — | dB |
| | VSWR | DC-F1 | DC-2250 | — | 1.2 | — | :1 |
| Stop Band | Rejection Loss | F3-F4 | 2800-3600 | 20 | 30 | — | dB |
| | | F4-F5 | 3600-8000 | 35 | 50 | — | dB |
| | VSWR | F5-F6 | 8000-15000 | — | 30 | — | dB |
| | | F3-F6 | 2800-15000 | — | 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

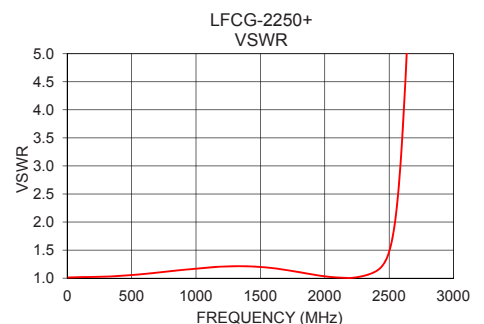
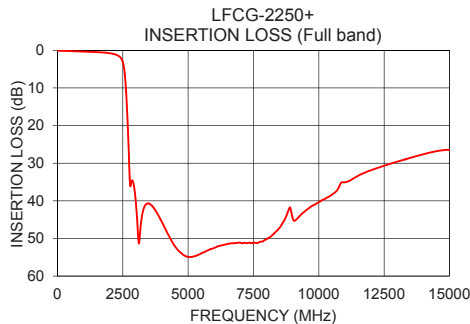
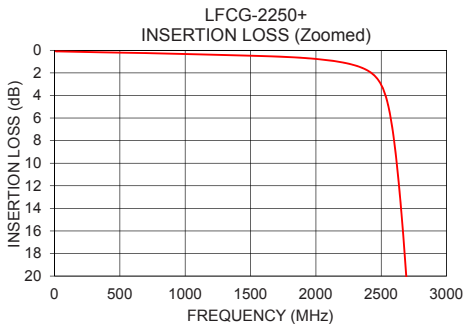
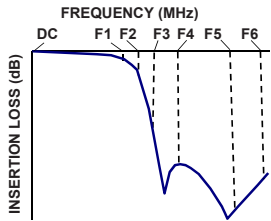
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power Input* | 5 W max. @25°C |

*Passband rating, derate linearly to 2.5W 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) |
|-----------------|---------------------|-----------|
| 10 | 0.09 | 1.02 |
| 100 | 0.12 | 1.02 |
| 1000 | 0.33 | 1.17 |
| 2250 | 1.18 | 1.02 |
| 2500 | 3.05 | 1.47 |
| 2650 | 13.79 | 5.68 |
| 2695 | 20.61 | 7.95 |
| 2745 | 30.24 | 10.23 |
| 2800 | 36.02 | 12.41 |
| 3000 | 40.39 | 19.00 |
| 3600 | 41.21 | 32.84 |
| 4000 | 45.69 | 39.38 |
| 5000 | 54.92 | 57.06 |
| 6000 | 52.50 | 88.60 |
| 8000 | 50.24 | 116.80 |
| 10000 | 40.34 | 52.78 |
| 11000 | 35.08 | 41.59 |
| 12500 | 30.67 | 44.08 |
| 13500 | 28.58 | 44.63 |
| 15000 | 26.47 | 33.63 |

Typical Frequency Response



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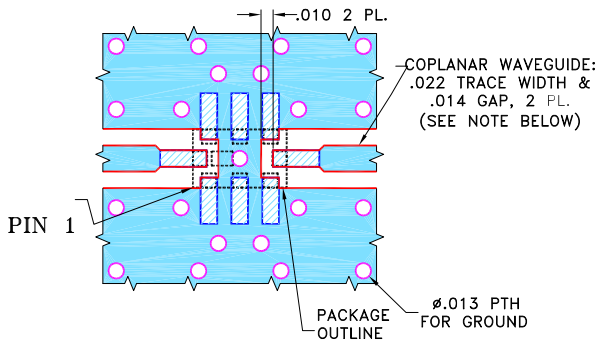
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REV. OR
M167767
LFCG-2250+
EDU2887
URJ
180731
Page 2 of 3

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)

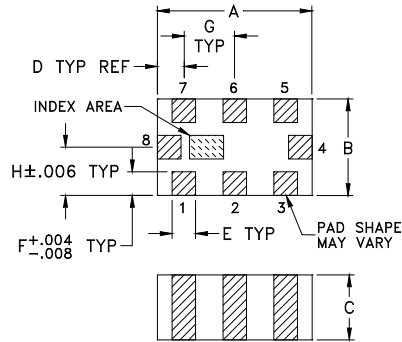


NOTES:

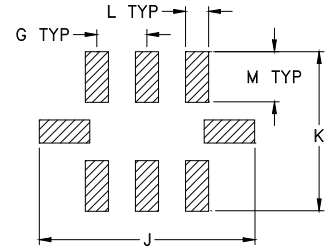
1. COPLANAR WAVEGUIDE IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $.010" \pm .001"$. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- 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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