# Ceramic ow Pass Filter

50Ω DC to 2500 MHz

## LFCG-2500+

## **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, 4.5W



Generic photo used for illustration purposes only CASE STYLE: GE0805C-2

### **Product Overview**

Mini-Circuits' LFCG-2500+ is an LTCC low pass filter with a passband from DC to 2500 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 4.5W RF input power and provides a wide operating temperature range from -55 to +125°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
Ultra-wide stopband	The LTCC lowpass filter provides a very good stopband rejection until 10 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, 4.5W	Supports a wide range of system power requirements.
Wrap-around terminations	Provides excellent solderability and easy visual inspection

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# Ceramic Low Pass Filter

50Ω DC to 2500 MHz

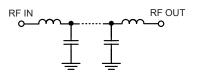
#### **Features**

- . Low loss, 1.2 dB typical
- High rejection 50 dB typical
- Excellent power handling, 4.5W
- Extremely small size 0805 (2.0 mm x 1.25 mm)
- Temperature stable
- LTCC construction

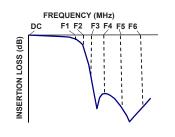
#### **Applications**

- Harmonic Rejection
- VHF/UHF transmitters / receivers
- Military radar applications
- Test and measurement
- Telecommunications & broadband wireless applications

#### **Functional Schematic**



### **Typical Frequency Response**



	•							
	Parameter		F# Frequency (MHz)		Min.	Тур.	Max.	Unit
		Insertion Loss	DC-F1	DC-2500	_	1.2	2.2	dB
	Pass Band	Freq. Cut-Off	F2	2870	_	3.0	_	dB
		Return Loss	DC-F1	DC-2500	—	16	_	dB
			F3-F4	3500-4000	20	33	—	dB
	Stop Band	Rejection Loss	F4-F5	4000-7000	35	45	_	dB
			F5-F6	7000-10000	_	30	_	dB

1 DC de-coupling capacitors are required in Applications where DC voltage and/or current is present at either input or output ports. Please contact Mini-Circuits for alternatives if DC pass from IN-OUT is required.

2 Measured on Mini-Circuits Characterization Test Board TB-799+

#### **Maximum Ratings** Operating Temperature -55°C to 125°C

RF Power Input*	4.5 W max.@25°C			
Storage Temperature	-55°C to 125°C			
Operating remperature	00 0 10 120 0			

Passband rating, derate linearly to 1W at 125°C ambient Permanent damage may occur if any of these limits are exceeded.

#### Typical Performance Data at 25°C

rypical i chomanoo Bata at 20 0						
Insertion Loss (dB)	Return Loss (dB)					
0.10	42.29					
0.13	37.56					
0.35	21.60					
0.50	16.97					
0.65	15.72					
0.73	16.62					
1.07	25.08					
2.78	12.28					
3.01	11.26					
4.43	7.55					
20.11	1.68					
30.23	1.27					
44.28	1.04					
41.97	0.73					
57.45	0.53					
49.13	0.28					
47.37	0.24					
39.63	0.35					
34.91	0.54					
33.37	0.61					
	Insertion Loss (dB)        0.10        0.13        0.35        0.50        0.65        0.73        1.07        2.78        3.01        4.43        20.11        30.23        44.28        41.97        57.45        49.13        47.37        39.63        34.91					



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## LFCG-2500+



Generic photo used for illustration purposes only CASE STYLE: GE0805C-2

+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

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## Low Pass Filter

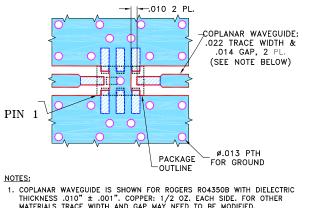


#### **Pad Connections**

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

Product Marking: LH

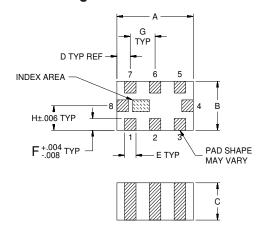
Demo Board MCL P/N: TB-799+ Suggested PCB Layout (PL-429)



- COPLANAR WAVEGUIDE IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .001". COPPER: 1/2 0Z. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
  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**



#### Outline Dimensions ( inch )

Α	в	С	D	Е	F	G	Wt.
.079	.049	.037	.014	.012	.012	.026	grams
2.00	1.25	0.95	0.35	0.30	0.30	0.65	.008

Note: Please refer to case style drawing for details

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