Ceramic ow Pass Filter

50Ω DC to 1400 MHz

LFCG-1400+

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, 5.5W



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

Product Overview

Mini-Circuits' LFCG-1400+ is an LTCC low pass filter with a passband from DC to 1400 MHz, supporting a variety of applications. This model provides 1.0 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 5.5W 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.
Excellent power handling, 5.5W	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 1400 MHz

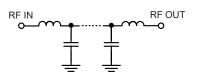
Features

- Low loss, 1 dB typical
- High rejection 50 dB typical
- Excellent power handling, 5.5W
- Extremely small size 0805 (2.0mm x 1.25mm)
- Temperature stable
- LTCC construction

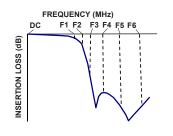
Applications

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

Functional Schematic



Typical Frequency Response



Electrical Specifications " ² at 25°C							
Pa	rameter	F#	Frequency (MHz)	Min.	Тур.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC-1400	—	1.0	1.9	dB
	Freq. Cut-Off	F2	1650	-	3.0	—	dB
	Return Loss	DC-F1	DC-1400	—	22	—	dB
		F3-F4	2015-2300	20	45	_	dB

2300-6600

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F5-F6 6600-10000 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.

F4-F5

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

Rejection Loss

Stop Band

Maximum Ratings				
Operating Temperature	-55°C to 125°C			
Storage Temperature	-55°C to 125°C			
RF Power Input*	5.5W max.@25°C			
*Deschand rating denote linearly to 1W at 195% ambient				

*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

Typical Terrormanee Data at 25 0					
Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)			
10	0.11	39.65			
100	0.16	33.99			
1000	0.55	30.65			
1400	1.09	22.99			
1645	3.10	13.45			
1650	3.25	12.83			
1800	16.53	3.31			
1830	21.02	2.83			
1885	30.83	2.27			
2015	44.63	1.53			
2200	58.84	1.01			
2300	58.05	0.84			
3700	51.78	0.32			
4000	54.22	0.29			
5800	54.57	0.18			
6000	50.46	0.21			
6600	48.37	0.31			
8500	38.16	0.34			
9300	35.27	0.33			
10000	33.10	0.31			



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∭Mini-Circuits

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LFCG-1400+



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

dB

dB

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

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Low Pass Filter

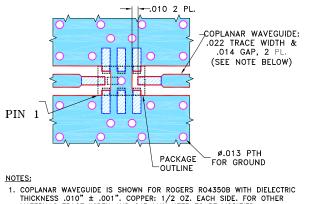


Pad Connections

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

Product Marking: LF

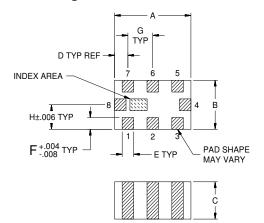
Demo Board MCL P/N: TB-799+ Suggested PCB Layout (PL-429)



- 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)

А	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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