# ow Pass Filter

# LFCG-575+

 $50\Omega$ DC to 575 MHz

# 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, 3.5W



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

### **Product Overview**

Mini-Circuits' LFCG-575+ is an LTCC low pass filter with a passband from DC to 575 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 3.5W RF input power and provides a wide operating temperature range from -55°C 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			
Good stopband rejection, 30 dB typical	The LTCC lowpass filter provides a good stopband rejection suitable for high end applications.			
LTCC Construction	vides repeatable performance in a rugged, ceramic package well suited for tough environments h 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, 3.5W	Supports a wide range of system power requirements.			
Wrap-around terminations	Provides excellent solderability and easy visual inspection			

A. 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.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Puchasers 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/MCLStore/terms.jsp

# **Low Pass Filter**

 $50\Omega$ DC to 575 MHz

# LFCG-575+



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## +RoHS Compliant

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

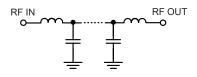
#### **Features**

- Low loss, 1dB typical
- · High rejection 30 dB typical
- Excellent power handling, 3.5W
- Extremely small size 0805 (2.0mm x 1.25mm)
- Temperature stable
- LTCC construction

### **Applications**

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

# **Functional Schematic**



## Electrical Specifications<sup>1,2</sup> at 25°C

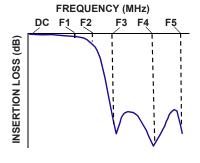
Pa	rameter	F#	Frequency (MHz) Min. Typ. Max.		Max.	Unit	
	Insertion Loss	DC-F1	DC - 575 —		1.0	1.9	dB
Pass Band	Freq. Cut-Off	F2	725	_	3.0	_	dB
	Return Loss	DC-F1	DC - 575	_ 18		_	dB
Stop Band	Dejection Loss	F3-F4	1020 - 2500	25	30	_	dB
Stop Ballu	Rejection Loss	F4-F5	2500 - 4400	_ 25 -		_	dB

- 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			
Storage Temperature	-55°C to 125°C			
RF Power Input*	3.5W max.@25°C			

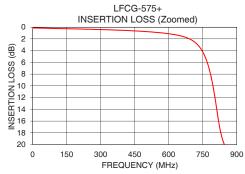
Passband rating, derate linearly to 0.6W at 125°C ambient Permanent damage may occur if any of these limits are exceeded.

# **Typical Frequency Response**

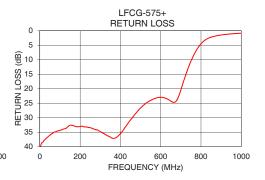


### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)
1	0.16	40.56
50	0.19	36.03
100	0.23	34.37
250	0.36	33.47
500	0.76	26.68
575	1.01	23.29
700	2.17	20.48
725	2.91	15.09
800	11.11	4.50
850	20.48	2.23
910	30.98	1.37
1000	34.06	0.86
1020	33.53	0.79
1500	35.63	0.29
2000	52.98	0.21
2500	35.25	0.19
3000	30.68	0.17
3500	28.97	0.16
4000	28.01	0.17
4400	26.79	0.19







Notes
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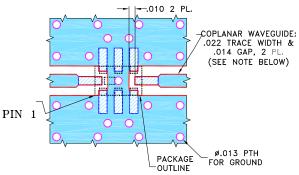
LFCG-575+ **Low Pass Filter** 

#### **Pad Connections**

INPUT	8
OUTPUT	4
GROUND	1.2.3.5.6.7

**Product Marking: KS** 

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



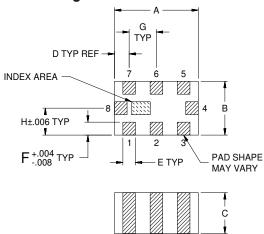
#### NOTES:

- 1. COPLANAR WAYEGUIDE 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.
  2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

### **Outline Drawing**



#### Outline Dimensions (inch )

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

Note: Please refer to case style drawing for details

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