

Ceramic

# Low Pass Filter

LFCW-1142+

50Ω

DC to 10.6 GHz

## The Big Deal

- Small size 0603 (1.6 x 0.8 mm)
- Low insertion loss, 2.1 dB typical
- Rejection 20 dB typical from 12 to 15.21 GHz
- Good power handling, 4W



CASE STYLE: JC0603C-1

## Product Overview

Mini-Circuits' LFCW-1062+ is a Low Temperature Co-fired Ceramic (LTCC) low pass filter, designed in a very small, 0603 package. The multilayer construction provides high repeatability of performance. Small, wrap-around terminations minimize variations in performance due to parasitics. Covering DC – 10.6 GHz, these units offer low insertion loss, good rejection, and excellent power handling capability.

## Key Features

Feature	Advantages
Small size 0603 (1.6 x 0.8 mm)	Allows for high layout density of circuit boards while minimizing the effects of parasitics.
Stop band rejection 20 dB typical over 12 –15.21 GHz	Provides good rejection in a tiny package, saving PCB space for customers.
Wrap-around terminations	Provides excellent solderability and easy visual inspection.
LTCC construction	Rugged package, well-suited for tough environments including high humidity and high temperature extremes.

### Notes

- 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"); Purchasers 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](http://www.minicircuits.com/MCLStore/terms.jsp)



# Ceramic Low Pass Filter

## LFCW-1062+

50Ω DC<sup>1</sup> to 10.6 GHz



Generic photo used for illustration purposes only

CASE STYLE: JC0603C-1

### Features

- Good power handling, 4W
- Small size 0603 (1.6 x 0.8 mm)
- 7 sections
- Temperature stable
- LTCC construction

**+RoHS Compliant**

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

### Applications

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

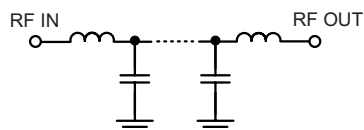
### Electrical Specifications<sup>1,2</sup> at 25°C

Parameter	F#	Frequency (GHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC - F1	DC - 10.6	—	2.8	dB
	Freq. cut-off	F2	10.8	—	3.0	dB
	VSWR	DC - F1	DC - 10.6	—	2.2	:1
Stop Band	Rejection	F3	12	—	20	dB
	Loss	F4 - F5	12.16 - 12.86	25	31	dB
		F6	15.21	—	20	dB

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-720+

### Functional Schematic

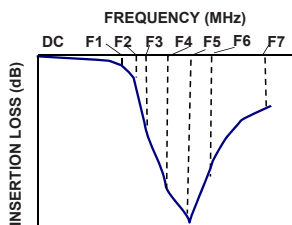


### Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input <sup>3</sup>	4W at 25°C

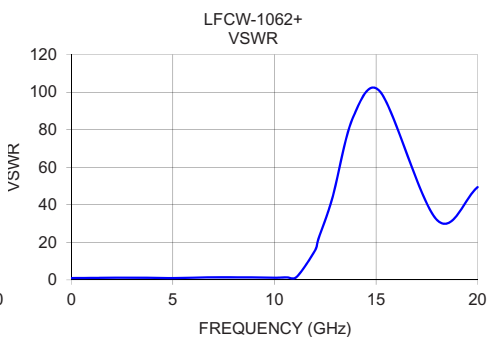
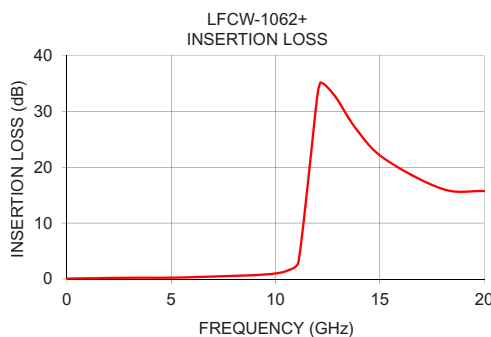
<sup>3</sup>Passband rating, derate linearly to 1.6W at 100°C ambient (Reference AN-75-005)  
Permanent damage may occur if any of these limits are exceeded.

### Typical Frequency Response



### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
0.01	0.07	1.00
0.50	0.10	1.03
1.00	0.13	1.07
3.00	0.23	1.21
5.00	0.24	1.01
7.00	0.44	1.38
9.00	0.69	1.34
10.00	1.00	1.18
10.60	1.56	1.38
11.10	3.10	1.69
12.00	32.69	15.76
12.16	35.14	21.74
12.86	32.64	44.06
13.86	26.86	86.35
15.21	21.54	100.15
18.00	16.11	31.94
20.00	15.72	49.40



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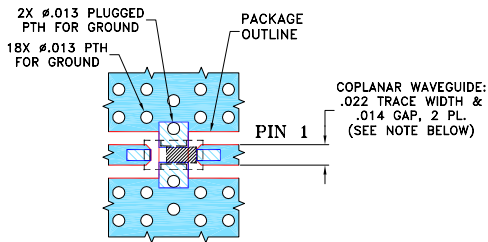
REV. B  
M151107  
ED-15030/1  
LFCW-1062+  
MY/CP/AM  
201201  
Page 2 of 3

## Pad Connections

INPUT	1
OUTPUT	3
GROUND	2,4

Product Marking: N/A

Evaluation Board MCL P/N: TB-720+  
Suggested PCB Layout (PL-412)



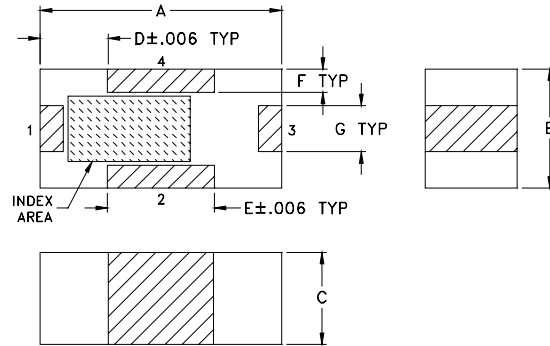
### NOTES:

- TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .010" ± .001"; COPPER: 1/2 OZ. 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 ( $\frac{\text{inch}}{\text{mm}}$ )

A	B	C	D	E	F	G	wt
.063	.031	.024	.018	.028	.006	.012	grams
1.60	0.79	0.61	0.46	0.71	0.15	0.30	0.005

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