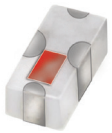
Ceramic

Low Pass Filter

LFCW-1062+

50Ω DC to 10.6 GHz



CASE STYLE: JC0603C-1

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

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.

Ceramic

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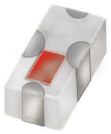
LFCW-1062+

50Ω DC[1] to 10.6 GHz



CASE STYLE: JC0603C-1

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

Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500,1000, 4000

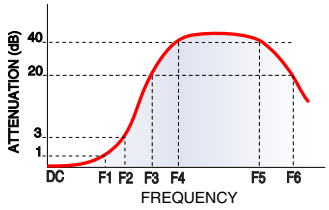
Features

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

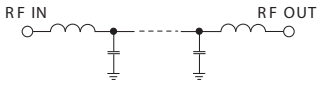
Applications

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

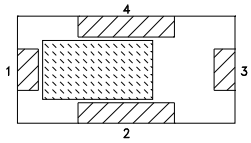
Specification Definition



Functional Schematic



Top View



Pad Connections

Input	1
Output	3
Ground	2,4

Electrical Specifications[1,2] 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 Loss	F3	12	—	20	—	dB
		F4 - F5	12.16 - 12.86	25	31	—	:1
		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+*

Maximum Ratings

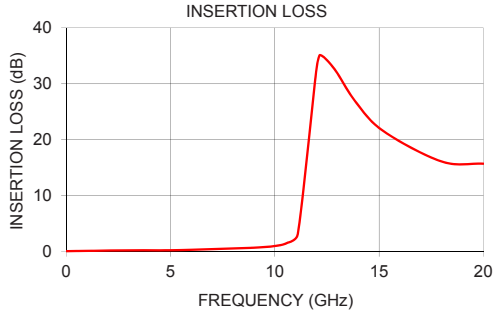
Operating Temperature	-55°C to +100°C
Storage Temperature	-55°C to +100°C
RF Power Input*	4W at 25°C

*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.

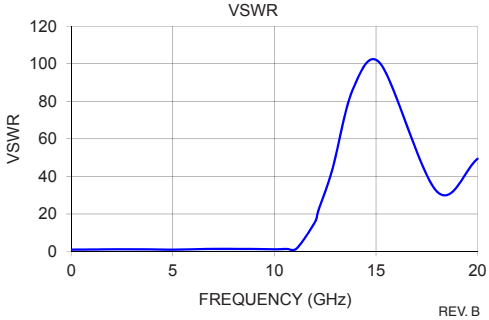
Typical Performance Data at 25°C

Frequency (GHz)	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

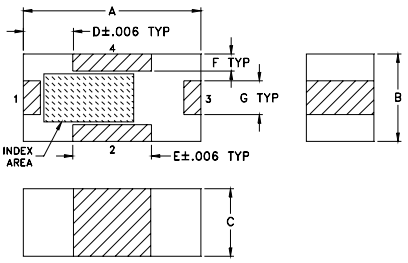
LFCW-1062+
INSERTION LOSS



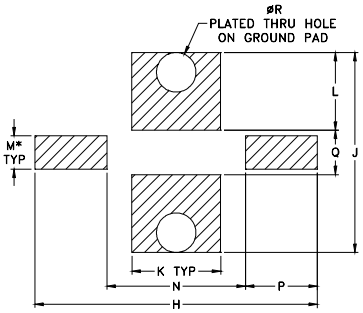
LFCW-1062+
VSWR



Outline Drawing

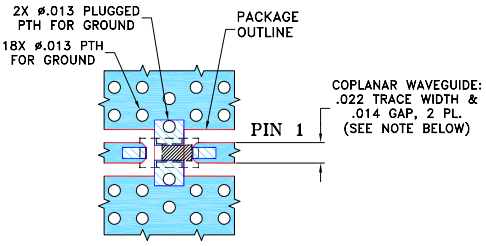


PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

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



NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .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.

Pad Connections

Input	1
Output	3
Ground	2,4

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J
.063	.031	.024	.018	.028	.006	.012	.100	.071
1.60	0.79	0.61	0.46	0.71	0.15	0.30	2.54	1.80

K	L	M	N	P	Q	R	wt
.032	.028	.012	.049	.026	.016	.014	grams
0.81	0.71	0.30	1.24	0.66	0.41	0.36	0.005

Additional 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