

Ceramic

Low Pass Filter

LFCV-1452+

50Ω DC to 14500 MHz



The Big Deal

- Good rejection, 40 dB typical
- Rugged, ceramic construction
- Small size, 0.126" x 0.098" x 0.039" (1210)
- Good power handling, 3.2W

Generic photo used for illustration purposes only
CASE STYLE: JV1210C-7

Product Overview

Mini-Circuits' LFCV-1452+ is an LTCC low pass filter with a passband from DC to 14500 MHz, supporting a variety of applications. This model provides 1.4 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 3.2W RF input power and provides a wide operating temperature range from -55 to +125°C. Housed in a small 1210 ceramic form factor, 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 40 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.
Small size (0.126" x 0.098" x 0.039")	Saves space in dense circuit board layouts and minimizes the effects of parasitics.
Good power handling, 3.2W	Supports a wide range of system power requirements.

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



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Low Pass Filter

50Ω

DC to 14500 MHz

LFCV-1452+



Features

- Low loss, 1.4 dB typical
- Good rejection 40 dB typical
- Good power handling, 3.2W
- Small size 1210 (0.126" x 0.098" x 0.039")
- Temperature stable
- LTCC construction

Generic photo used for illustration purposes only

CASE STYLE: JV1210C-7

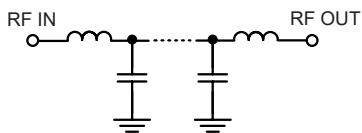
+RoHS Compliant

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

Applications

- Military radar applications
- Test and measurement
- Telecommunications & broadband wireless applications

Functional Schematic



Electrical Specifications ^{1,2} at 25°C							
	Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC - 14500	—	1.4	1.9	dB
	Frequency Cut-off	F2	15800	—	3	—	dB
	Return Loss	DC-F1	DC - 14500	—	12	—	dB
Stop Band	Rejection Loss	F3-F4	20000 - 23000	20	40	—	dB
		F4-F5	23000 - 26500	30	40	—	dB
		F5-F6	26500 - 32000	—	38	—	dB
		F6-F7	32000 - 40000	—	20	—	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-1172

Maximum Ratings

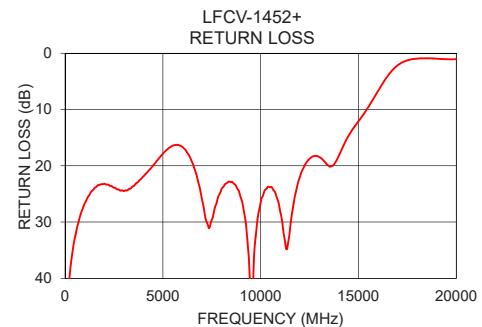
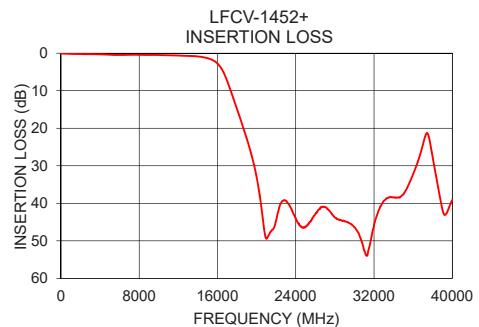
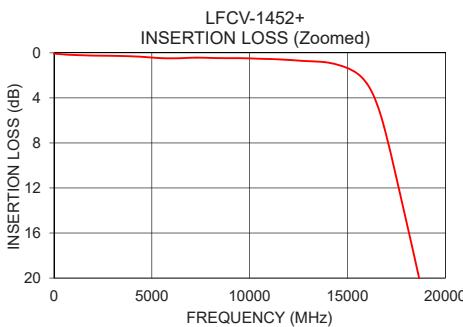
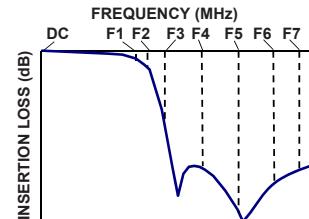
Operating Temperature	-55°C to 125°C
Storage Temperature	-55°C to 125°C
RF Power Input*	3.2W max. @ 25°C

*Passband rating, derate linearly to 1.6W at 125°C ambient
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)
10	0.07	51.74
100	0.08	45.70
300	0.12	37.25
400	0.13	34.75
500	0.14	32.81
1000	0.18	26.68
5000	0.42	17.87
10000	0.49	26.46
14500	1.06	14.61
15800	2.31	7.88
16200	3.32	5.56
17000	7.43	2.15
19000	22.80	0.96
20000	32.99	1.05
23000	39.31	1.35
25000	46.27	2.02
26500	41.44	2.47
30000	46.37	0.55
32000	45.90	1.00
40000	39.12	1.60

Typical Frequency Response



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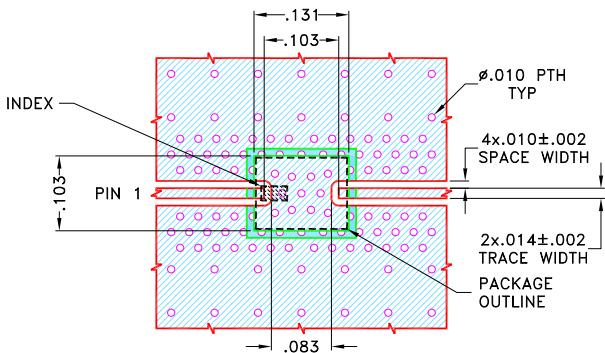


Pad Connections

INPUT	1
OUTPUT	2
GROUND	3

Product Marking: MH

Demo Board MCL P/N: TB-1172
Suggested PCB Layout (PL-679)

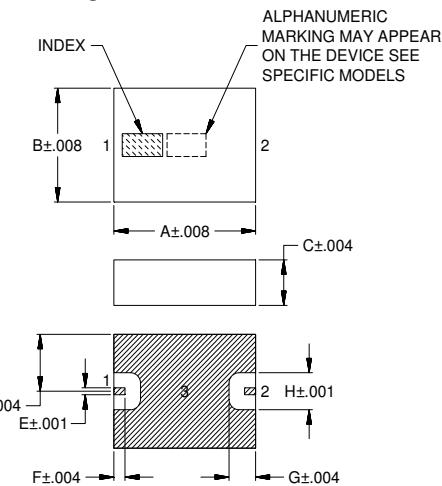


NOTES:

1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS (R04835 Lo Pro) WITH DIELECTRIC THICKNESS .0073±.0007. 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 PATTERN WITH SMBC (SOLDER MASK OVER BARE COPPER)
 ■■■ DENOTES PCB COPPER PATTERN FREE OF SOLDERMASK

Outline Drawing



Outline Dimensions (inch)

A	B	C	D	E
.126	.098	.039	.049	.006
3.20	2.50	1.00	1.25	0.15
F	G	H	Wt.	
.010	.024	.032	grams	
0.25	0.60	0.81		0.03

Note: Please refer to case style drawing for details

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