

Ceramic

Low Pass Filter

LFCN-2352+

50Ω

DC to 23500 MHz



Generic photo used for illustration purposes only
CASE STYLE: FV1206-11

The Big Deal

- Good rejection, 35 dB typical
- Rugged, ceramic construction
- Small size, 3.2mm X 1.6mm (1206)
- LTCC Low pass filter at mm wave frequency

Product Overview

Mini-Circuits' LFCN-2352+ is an LTCC low pass filter with a passband from DC to 23500 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 1W RF input power and provides a wide operating temperature range from -55 to +125°C. Housed in a small 1206 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 3.2mm X 1.6mm (1206)	Saves space in dense circuit board layouts and minimizes the effects of parasitics.

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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+RoHS Compliant

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

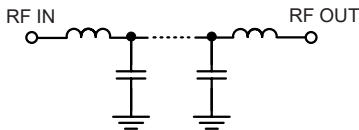
Features

- Low loss, 1.4 dB typical
- Good rejection 35 dB typical
- Good power handling, 1W
- Small size 3.2mm X 1.6mm (1206)
- Temperature stable
- LTCC construction

Applications

- 5G applications

Functional Schematic



Electrical Specifications^{1,2} at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	DC-F1	DC - 13000	—	0.6	1.1	dB
	F1-F2	13000 - 22000	—	1.1	1.6	dB
	F2-F3	22000 - 23500	—	1.4	—	dB
	Frequency Cut-off	F4	25000	3	—	dB
Stop Band	Return Loss	DC-F3	DC - 23500	12	—	dB
	Rejection Loss	F5-F6	28500 - 30000	20	29	dB
		F6-F7	30000 - 39000	30	33	dB
		F7-F8	39000 - 40000	—	35	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-LFCN-2352C+

Maximum Ratings

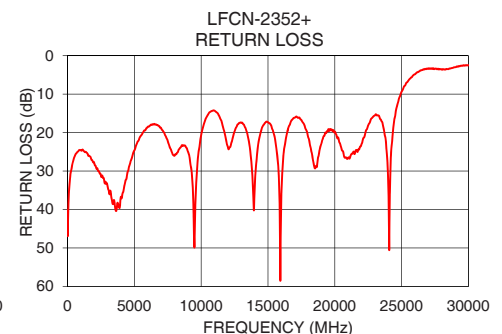
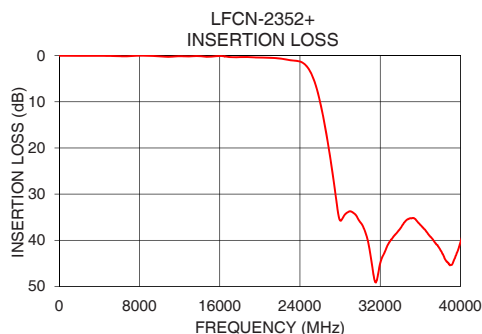
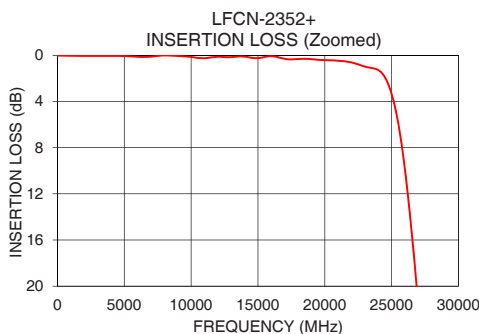
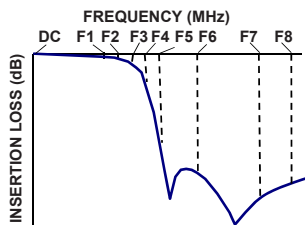
Operating Temperature	-55°C to 125°C
Storage Temperature	-55°C to 125°C
RF Power Input*	1W max. @25°C

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	0.02	40.10
100	0.02	36.03
300	0.03	29.46
500	0.03	26.49
1000	0.04	24.57
5000	0.06	24.65
13000	0.16	17.45
15000	0.24	17.30
22000	0.62	23.00
23500	1.10	17.05
25000	3.37	9.36
26000	9.96	4.83
26500	15.34	3.75
27000	21.83	3.29
27600	30.98	3.38
28500	34.38	3.49
30000	36.04	2.46
32000	44.95	3.49
39000	45.35	2.56
40000	40.43	2.54

Typical Frequency Response



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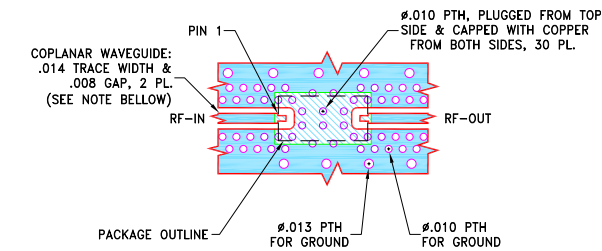


Pad Connections

INPUT	1
OUTPUT	2
GROUND	3

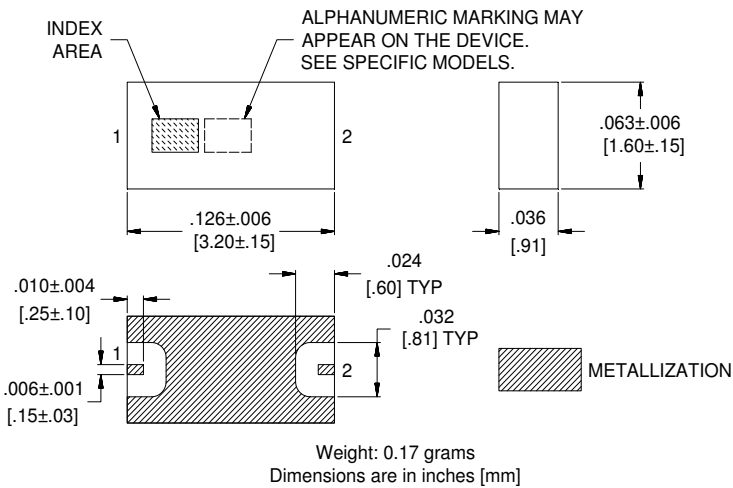
Product Marking: LY

Demo Board MCL P/N: TB-LFCN-2352C+
Suggested PCB Layout (PL-702)



- NOTES:
- TRACE WIDTH & GAP PARAMETERS ARE SHOWN FOR MEGTRON-7 R5785(N); DIELECTRIC THICKNESS: .0079±.001; COPPER: HVLP/HVLP, 1/2 Oz EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
 - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
- Legend:
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
 - DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

Outline Drawing



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