



CERAMIC

Low Pass Filter

50Ω DC¹ to 9170 MHz

LFCN-9170+

Mini-Circuits

FEATURES

- Excellent Power Handling, 8 W
- Small Size
- 7 Sections
- Temperature Stable
- Hermetically Sealed
- LTCC Construction
- Protected by U.S. Patent 6,943,646



Generic photo used for illustration purposes only

CASE STYLE: FV1206-4

APPLICATIONS

- Electronic Warfare (EW)
- Harmonic Rejection
- Transmitters/Receivers
- Lab Use

+RoHS Compliant

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

PRODUCT OVERVIEW

Mini-Circuits' LFCN-9170+ is an LTCC low pass filter with a passband from DC to 9170 MHz, supporting a variety of applications. This model provides 1.0 dB typical passband insertion loss and 30 dB typical stopband rejection. It handles up to 8 W RF input power and provides a wide operating temperature range from -55 to +100°C. Housed in a tiny 1206 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
LTCC Construction	Provides repeatable performance in a rugged, ceramic package well suited for tough environments such as high humidity and temperature extremes.
Tiny Size (0.12x0.06x0.04")	Saves space in dense circuit board layouts and minimizes the effects of parasitics.
High Power Handling, 8 W	Supports a wide range of system power requirements.
Wrap-Around Terminations	Provides excellent solderability and easy visual inspection.
Wide Operating Temperature Range, -55 to +100°C	Enables reliable performance in extreme environments.

REV. B
ECO-011891
LFCN-9170+
MCL NY
250613

Mini-Circuits®

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LFCN-9170+50Ω DC¹ to 9170 MHz**ELECTRICAL SPECIFICATIONS^{1,2} AT +25°C**

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Insertion Loss	DC-F1	DC-9170	1.0	3.0	dB
	Freq. Cut-Off	F2	9800	3.0		dB
	VSWR	DC-F1	DC-9170	1.6		:1
Stopband	Rejection Loss	F3-F4	11360-19000	20	30	dB
		F4-F5	11630-18770	28	38	
	VSWR	F3-F5	11360-19000		30	:1

1. In Application where DC voltage is present at either input or output ports, de-coupling capacitors are required.

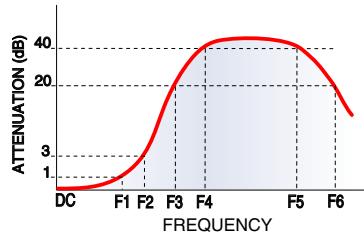
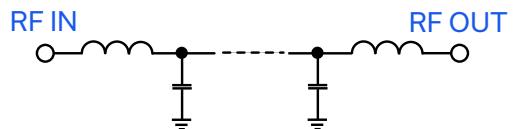
2. Measured on Mini-Circuits Characterization Test Board TB-810-9170+.

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-55°C to +100°C
Storage Temperature	-55°C to +100°C
RF Power Input ³	8 W max. at +25°C

3. Passband rating, derate linearly to 3 W at +100°C ambient.

Permanent damage may occur if any of these limits are exceeded.

TYPICAL FREQUENCY RESPONSE**FUNCTIONAL SCHEMATIC**



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Low Pass Filter

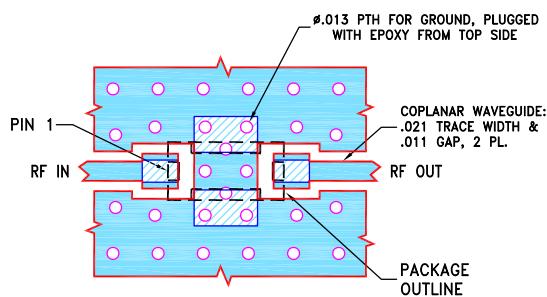
LFCN-9170+

50Ω DC¹ to 9170 MHz

PIN CONNECTIONS

RF IN	1
RF OUT	3
GROUND	2,4

PRODUCT MARKING: BY

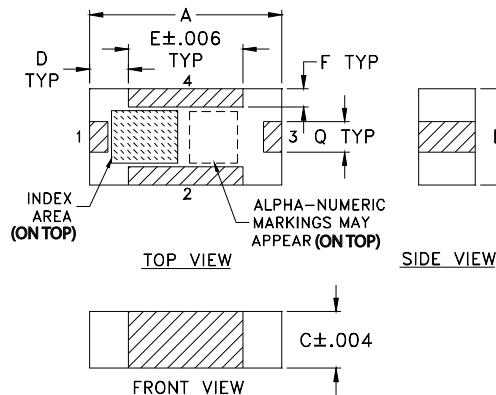
DEMO BOARD MCL P/N: TB-810-9170+
SUGGESTED PCB LAYOUT (PL-546)

NOTES:

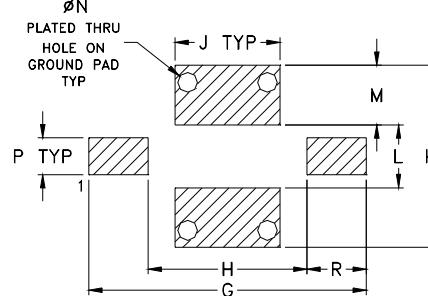
1. TRACE WIDTH & GAP PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010±.001. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

OUTLINE DRAWING



PCB Land Pattern



OUTLINE DIMENSIONS (Inches mm)

A	B	C	D	E	F	G	H	J
.126	.063	.037	.026	.075	.012	.182	.104	.069
3.20	1.60	0.94	0.66	1.91	0.30	4.62	2.64	1.75
K	L	M	N	P	Q	R		wt
.119	.041	.039	.013	.024	.020	.039		grams
3.02	1.04	0.99	0.33	0.61	0.51	0.99		.020

TAPE & REEL INFORMATION: F75



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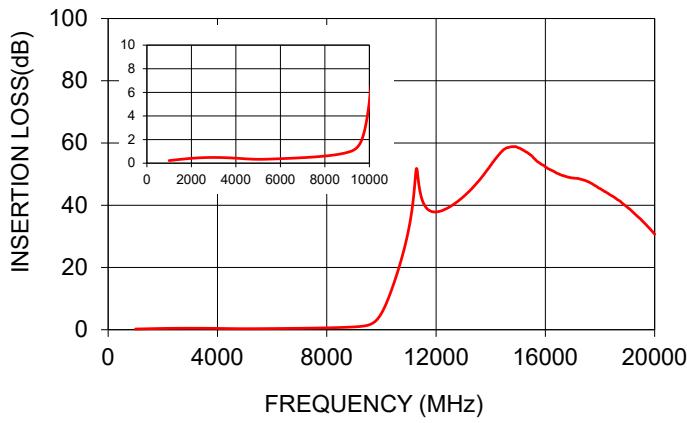
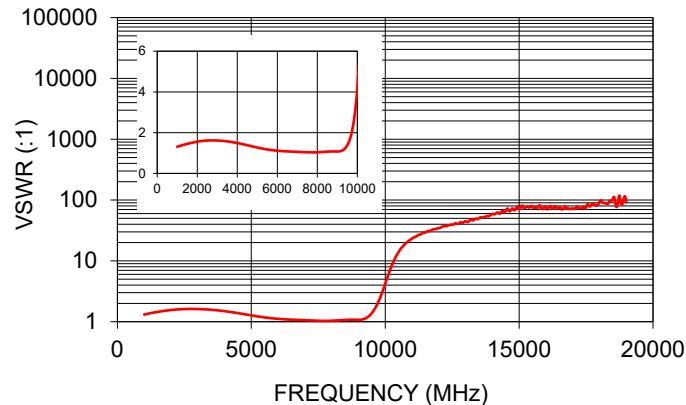
Low Pass Filter

LFCN-9170+

Mini-Circuits®

50Ω DC¹ to 9170 MHz**TYPICAL PERFORMANCE DATA AT +25°C**

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1000	0.22	1.31
2000	0.41	1.56
4000	0.42	1.49
6000	0.38	1.12
9160	1.00	1.09
9800	2.90	2.42
10000	5.24	4.20
11360	47.39	27.89
11620	39.43	31.15
12000	37.84	34.46
14000	52.82	59.27
16000	52.35	76.32
18000	45.35	93.87
18760	41.10	113.28
19000	39.35	92.67

INSERTION LOSS**VSWR****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/terms/viewterm.html

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