

Ceramic

Bandpass Filter

BFCN-5151+

50Ω

4120 to 6440 MHz

The Big Deal

- Small size 3.2mm x 1.6mm
- Pass band (4120-6440 MHz)
- High rejection in upper stopband



CASE STYLE: FV1206-7

Product Overview

The BFCN-5151+ LTCC Band Pass Filter achieves a miniature size and high repeatability of performance. Wrap-around terminations minimize variations in performance due to parasitics. Covering 4120 to 6440 MHz, these units offer excellent rejection over a deep stopband.

Key Features

Feature	Advantages
Small Size (3.20mm x1.6 mm)	Allows for high layout density of circuit boards, while minimizing effects of parasitics.
Rejection peaks close to pass band	Provides good rejection of signals close to the pass band, for improved system performance.
Deep stopband	Upper stopband features transmission zeroes for high rejection.
LTCC construction	Provides a rugged package that is well suited for tough environments including high humidity and high temperature extremes.

Ceramic Bandpass Filter

50Ω 4120 to 6440 MHz

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Features

- Small size
- Temperature stable
- Hermetically sealed
- LTCC construction

Applications

- Harmonic Rejection
- Transmitters / Receivers



Generic photo used for illustration purposes only

CASE STYLE: FV1206-7

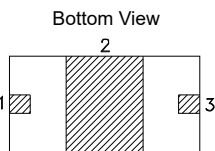
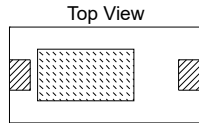
+RoHS Compliant

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

Maximum Ratings

Operating Temperature	-55°C to +100°C
Storage Temperature	-55°C to +100°C
RF Power Input	1W max.

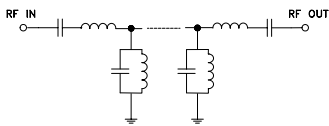
Permanent damage may occur if any of these limits are exceeded.



Pad Connections

Input	1
Output	3
Ground	2

Functional Schematic



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

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	5151	—	MHz
	Insertion Loss	F1-F2	—	1.2	3.0	dB
	Return Loss	F1-F2	4120-6440	—	14	—
Stop Band, Lower	Insertion Loss	DC-F3	DC-3000	20	24	dB
Stop Band, Upper	Insertion Loss	F4-F5	8820-10450	20	32	dB
		F5-F6	10450-14250	15	25	dB

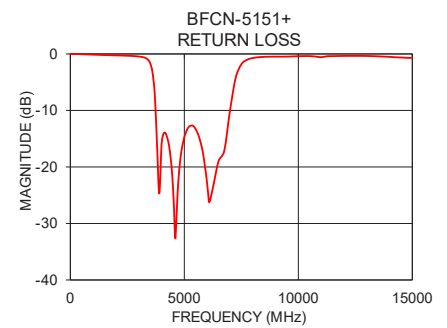
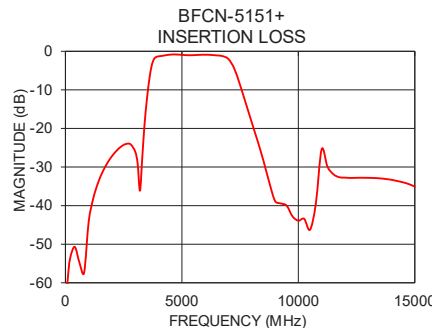
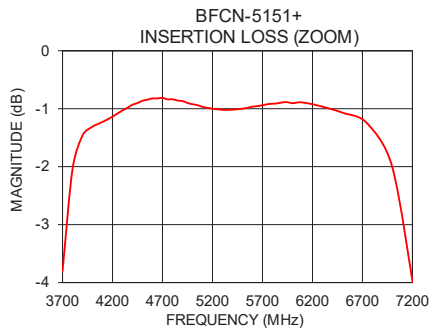
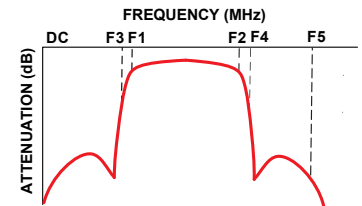
1. Measured on Mini-Circuits Characterization Test Board TB-812+.

2. This filter is not intended for use as a DC Blocking circuit element. In Application where DC voltage is present at either input or output ports, blocking capacitors are required at the corresponding RF port.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)
600	54.74	0.06
1600	31.21	0.20
2400	24.66	0.30
3200	36.16	0.59
3600	7.33	3.18
4000	1.31	15.96
5500	1.00	13.33
6750	1.26	17.18
7250	4.49	4.26
8000	18.44	0.72
9000	38.80	0.48
10000	43.91	0.39
11000	25.41	0.58
13000	32.80	0.36
15000	35.07	0.71

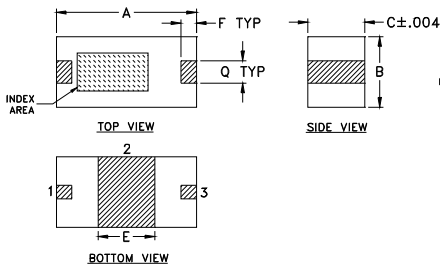
Specification Definition



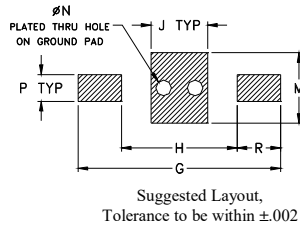
Bandpass Filter

BFCN-5151+

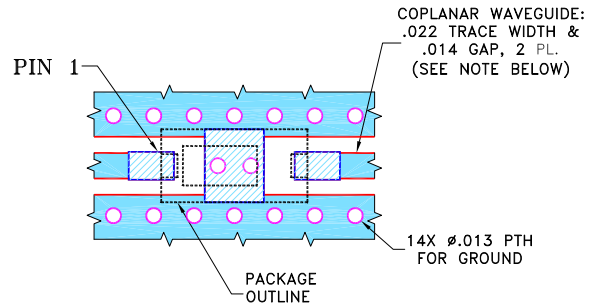
Outline Drawing



PCB Land Pattern



Demo Board MCL P/N: TB- 812+ Suggested PCB Layout (PL-439)



NOTES:

1. COPLANAR WAVEGUIDE IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS $.010" \pm .001"$, 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.

Product Marking: N/A

Pad Connections

Input	1
Output	3
Ground	2

Outline Dimensions (inch/mm)

A	B	C	E	F	G	H
.126	.063	.051	.051	.014	.183	.104
3.20	1.60	1.30	1.30	0.36	4.65	2.64
J	M	N	P	Q	R	wt
.051	.063	.014	.024	.020	.039	grams
1.30	1.60	0.36	0.61	0.51	0.99	.020

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

