

Ceramic

LTCC Bandpass Filter

BFCV-5270+

50Ω

4040 to 6500 MHz



Generic photo used for illustration purposes only
CASE STYLE: JV1210C

The Big Deal

- Small size 3.2mm x 2.5mm
- Wide passband (4040-6500 MHz)
- Low Insertion Loss (1.5 dB typical)
- Wide stopband rejection up to 14 GHz

Product Overview

The BFCV-5270+ LTCC Band Pass Filter is constructed with multiple layers in order to achieve a miniature size and high repeatability of performance. Wrap-around terminations minimize variations in performance due to parasitics. These units offer low insertion loss and very good wide band rejection.

Key Features

Feature	Advantages
Small Size (3.20mm x2.5 mm)	Allows for high layout density of circuit boards, while minimizing the effects of parasitics.
Wrap around termination	Provides excellent solderability and easy visual inspection capability.
Wide bandwidth	Enables high data rate in communication systems.
LTCC construction	Provides a rugged package that is well suited for tough environments including high humidity and high temperature extremes.

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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Features

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

Applications

- Software defined radio
- Satellite television broadcast
- Weather Radar

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

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—	—	5270	—	MHz
	Insertion Loss	F2-F5	4040-6500	—	1.5	dB
	VSWR	F2-F5	4040-6500	—	2.3	:1
Stop Band, Lower	Insertion Loss	DC-F1	DC-3250	14	17	dB
	VSWR	DC-F1	DC-3250	—	20	:1
Stop Band, Upper	Insertion Loss	F6	8080	—	17	dB
		F7-F8	8500-12000	15	20	dB
	VSWR	F8-F9	12000-14000	—	17	dB
		F7-F8	8500-12000	—	20	:1

1. Measured on Mini-Circuits Characterization Test Board TB-945+

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.

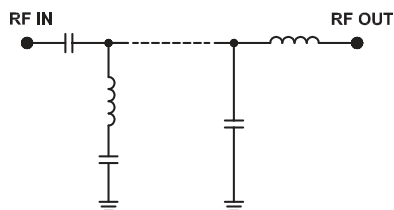
Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	6 W max @ +25°C

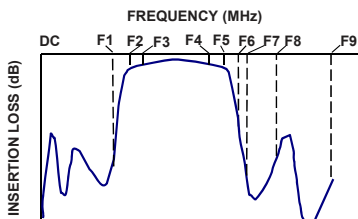
*Passband rating, derate linearly to 0.25W at 100°C ambient

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

Functional Schematic



Typical Frequency Response

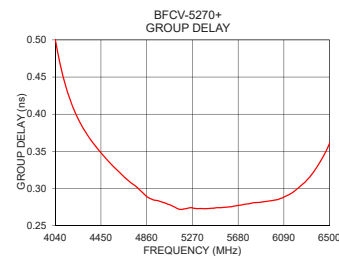
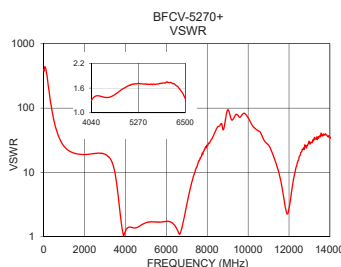
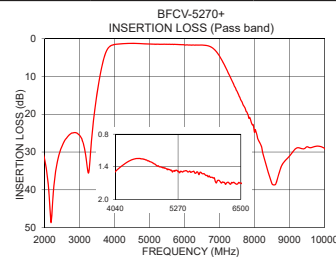
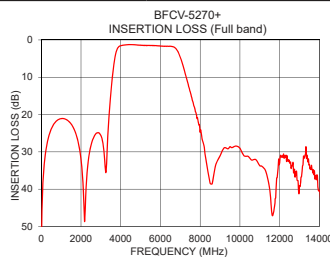


Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
10	56.84	393.65	4040	0.50
2000	31.98	18.97	4100	0.46
3000	25.61	19.22	4150	0.43
3250	35.57	16.50	4250	0.39
3410	20.55	12.58	4300	0.38
3600	8.95	5.72	4500	0.34
3750	3.62	2.17	4750	0.30
4040	1.49	1.30	4850	0.29
4150	1.40	1.40	5000	0.28
5270	1.49	1.71	5270	0.27
6300	1.72	1.64	5500	0.27
6500	1.70	1.35	5700	0.28
6900	3.34	2.19	5800	0.28
7200	8.11	6.17	5900	0.28
7500	13.92	12.09	6000	0.28
7820	20.31	21.29	6100	0.29
8080	25.93	28.55	6200	0.30
8500	38.40	50.73	6300	0.31
12000	32.92	2.75	6400	0.33
14000	40.35	35.35	6500	0.36

+RoHS Compliant

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



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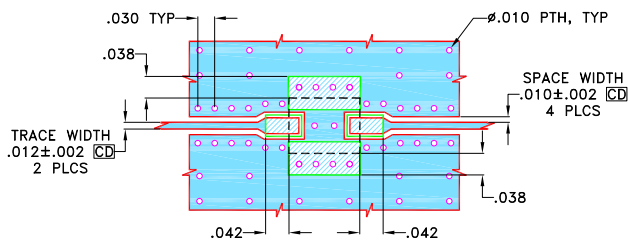


Pad Connections

RF IN	1
RF OUT	3
GROUND	2,4

Product Marking: HW

Demo Board MCL P/N: TB-945+
Suggested PCB Layout (PL-503)

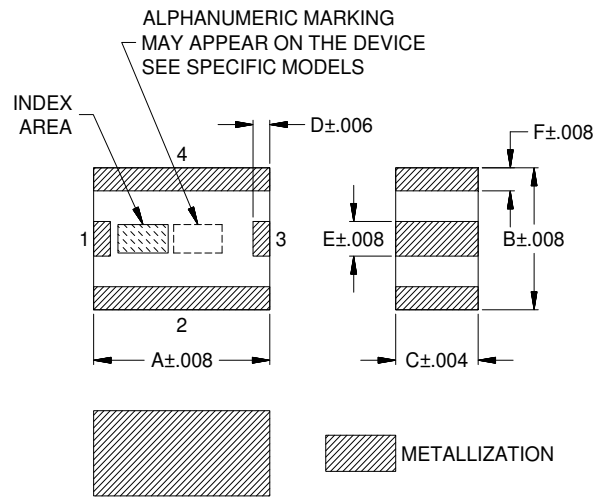


NOTES:

- TRACE WIDTH & SPACE WIDTH IS SHOWN FOR ROGERS (R04350B) WITH DIELECTRIC THICKNESS .0066"±.0007". COPPER 1/2 Oz. EACH SIDE FOR OTHER MATERIALS TRACE WIDTH & SPACE WIDTH MAY NEED TO BE MODIFIED.
- 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 SOLDERMASK

Outline Drawing



Outline Dimensions (inch mm)

A	B	C	D	E	F	Wt.
.126	.098	.059	.012	.024	.016	grams
3.2	2.5	1.5	.3	.6	.4	.03

Note: Please refer to case style drawing for details

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