LTCC SURFACE MOUNT

Band Pass Filter

BFCV-5270+

50Ω 4040 to 6500 MHz

THE BIG DEAL

- Low Insertion Loss, 1.5 dB Typ.
- Passband Return Loss, 8 dB Typ.
- Stopband Rejection, 20 dB Typ.
- 1210 Surface Mount Footprint

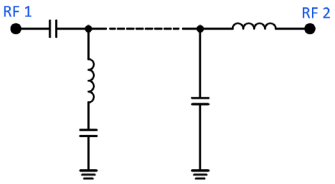


Generic photo used for illustration purposes only

APPLICATIONS

- Software Defined Radio
- Satellite Television Broadcast
- Weather Radar

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

The BFCV-5270+ is a passive RF component optimized for band-pass filter applications in low-frequency circuits. Its ceramic-based construction ensures stable electrical performance across a wide operating range, supporting consistent center frequency and bandwidth characteristics under varying environmental conditions. Its internal structure is engineered to minimize parasitic effects, which is critical for maintaining sharp filter response and low insertion loss. The compact form factor and controlled electrical behavior contribute to high reliability and repeatable filter performance that is well suited for dense PCB layouts.

ELECTRICAL SPECIFICATIONS[1,2] AT +25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency[3]	—	—	—	5270	—	MHz
	Insertion Loss	F1-F2	4040 - 6500	—	1.5	—	dB
		F3-F4	4150 - 6300	—	1.5	4.0	
	Return Loss	F1-F2	4040 - 6500	—	8	—	dB
Stopband, Lower	Rejection	DC-F5	DC - 3250	14	17	—	dB
Stopband, Upper	Rejection	F6	8080	—	17	—	dB
		F7-F8	8500 - 12000	15	20	—	
		F8-F9	12000 - 14000	—	17	—	

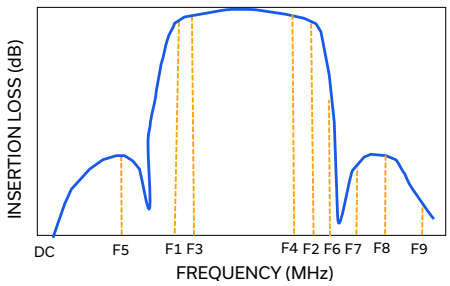
1. Tested in Evaluation Board P/N TB-BFCV-5270+.
2. This component should not be used as a DC-block. In applications where DC voltage and/or current is present at either the input or output ports, external DC blocking capacitors are required.
3. Typical variation ± 5%

ABSOLUTE MAXIMUM RATINGS[4]

Operating Temperature	-55°C to +100°C
Storage Temperature	-55°C to +100°C
Input Power[5]	6 W @ +25°C

4. Permanent damage may occur if any of these limits are exceeded.
5. Power rating applies only to signals within the passband. Power rating above +25°C operating temperature decreases linearly to 0.25 W at +100°C.

TYPICAL FREQUENCY RESPONSE



REV. B
ECO-028838
BFCV-5270+
EDU2449_2
MCINU
260407

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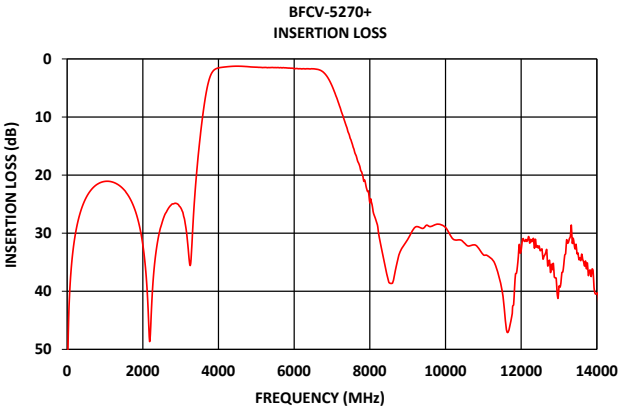
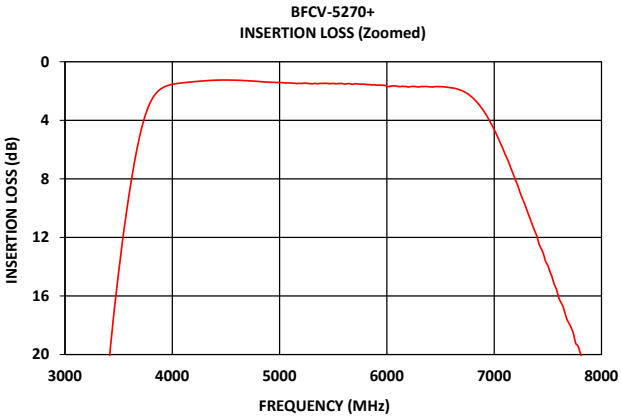
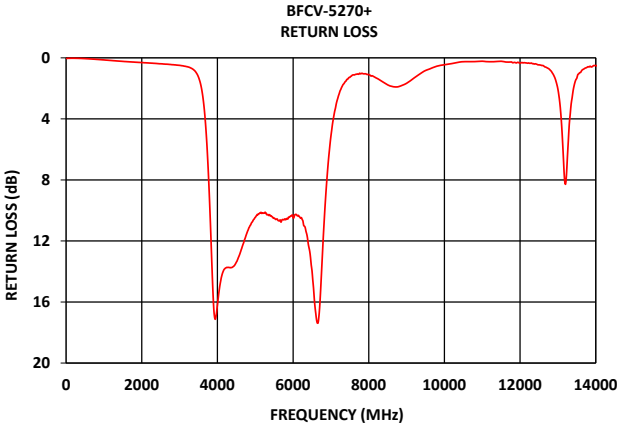
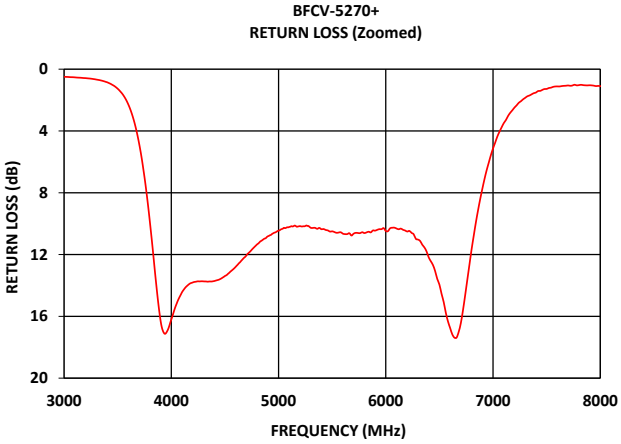
50Ω 4040 to 6500 MHz

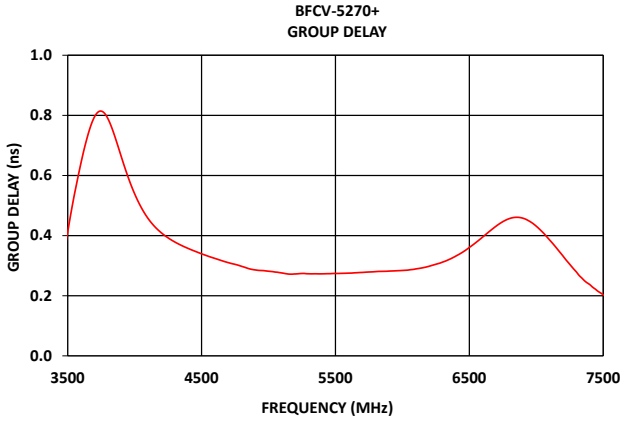
TYPICAL PERFORMANCE GRAPHS AT +25°C











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FUNCTIONAL DIAGRAM

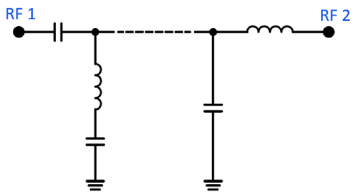
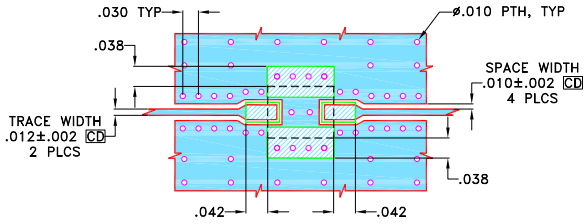


Figure 1. BFCV-5270+ Functional Diagram

PAD DESCRIPTION

Function	Pad Number	Description
RF1	1	Connects to RF Input Port
RF2	3	Connects to RF Output Port
GROUND	2,4	Connects to Ground on PCB, (See drawing PL-503)

SUGGESTED PCB LAYOUT



NOTES:

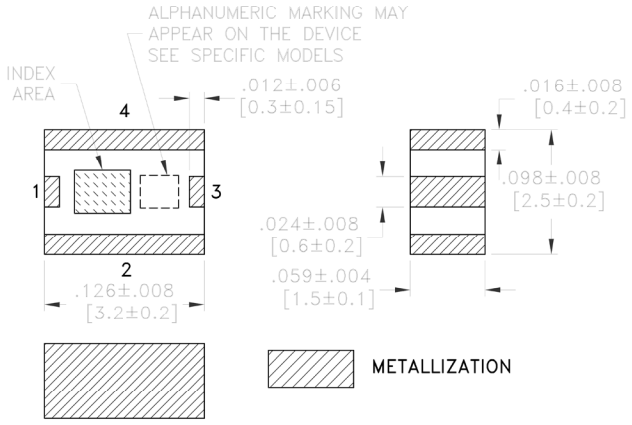
1. TRACE WIDTH & SPACE WIDTH IS SHOWN FOR ROGERS (RO4350B) WITH DIELECTRIC THICKNESS .0066"±.0007". COPPER 1/2 Oz. EACH SIDE FOR OTHER MATERIALS TRACE WIDTH & SPACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

Figure 2. Suggested PCB Layout

CASE STYLE DRAWING



WEIGHT: .03 grams.
DIMENSIONS ARE IN INCH [MM].

PRODUCT MARKING*: NC

*Marking may contain other features or characters for internal lot control.

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ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASHBOARD CLICK HERE

Performance Data & Graphs	Data Graphs S-Parameter (S2P Files) Data Set (.zip file) De-embedded to device pads
Case Style	JV1210C Lead Finish: Tin over Nickel Plate
RoHS/REACH Status	Compliant
Tape and Reel	F74
Suggested Layout for PCB Design	PL-503
Evaluation Board	TB-BFCV-5270+ Gerber File
Environmental Rating	ENV02T1

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-Circuits' 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