



LTCC SURFACE MOUNT

Band Pass Filter

BFCV-8750+

50Ω 8.45 to 8.80 GHz

THE BIG DEAL

- 8.45 to 8.80 GHz Passband
- Wide Stopband Rejection up to 18 GHz
- Compact 3.2×2.5 mm Package
- Rugged, Temperature-stable LTCC Construction

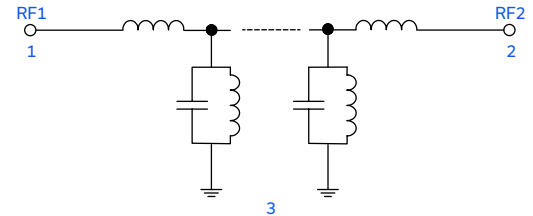


Generic photo used for illustration purposes only

APPLICATIONS

- Surveillance Radar Platforms
- Perimeter and Border Security Sensors
- UAV Payload Radars
- X-Band Receivers

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

The BFCV-8750+ LTCC bandpass filter provides a passband from 8.45 to 8.8 GHz with as low as 3 dB loss in the passband and up to 63 dB stopband rejection. This model handles up to 6.3 W RF input power and provides a wide operating temperature range from -55 to +125°C. Utilizing a proprietary LTCC material system and a distributed filter topology, this filter achieves highly repeatable performance on a lot-to-lot basis.

ELECTRICAL SPECIFICATIONS^{1,2,3} AT +25°C, Z₀ = 50Ω

Parameter	F#	Frequency (GHz)	Min.	Typ.	Max.	Units
Passband	Center Frequency ⁴		—	8.625	—	GHz
	Insertion Loss	F4-F5	—	3	4	dB
	Return Loss	F4-F5	—	9.5	—	dB
Stopband, Lower	Attenuation	DC-F1	50	63	—	dB
		F1-F2	45	55	—	
		F2-F3	30	38	—	
Stopband, Upper	Attenuation	F6-F7	30	44	—	dB
		F7-F8	50	60	—	

1. Tested on Evaluation Board P/N TB-BFCV-8750C+ with the connector and feedline effects de-embedded using the 2X Thru IEEE P370 method.

2. This filter is bi-directional. RF1 and RF2 ports may be interchanged, see S-Parameters for actual performance.

3. 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 port, an external DC blocking capacitor is required.

4. Typical variation ± 3 %.

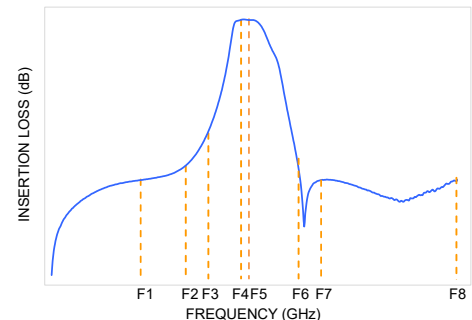
ABSOLUTE MAXIMUM RATINGS⁵

Operating Temperature	-55 °C to +125 °C
Storage Temperature	-55 °C to +125 °C
Input Power ⁶	6.3 W at +25 °C

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

6. Power rating applies only to signals within the passband. Power rating above +25 °C operating temperature decreases linearly to 2.57 W at +125 °C.

TYPICAL FREQUENCY RESPONSE





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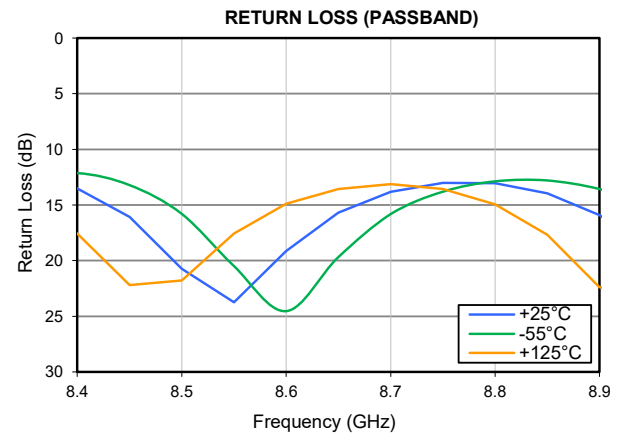
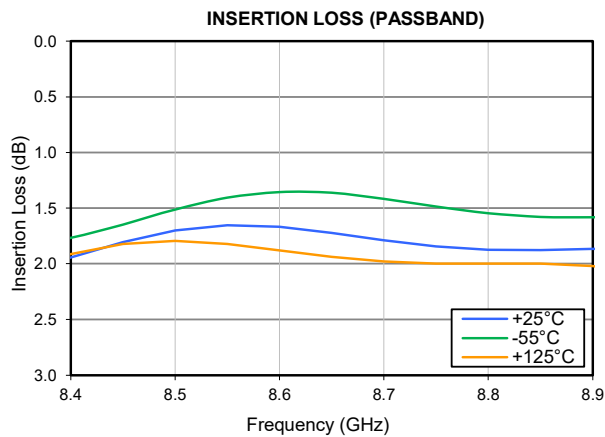
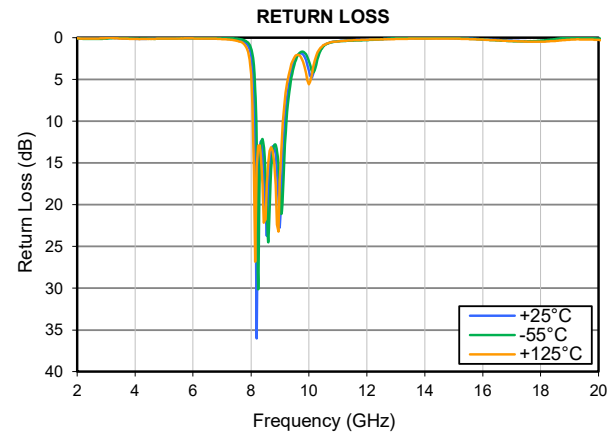
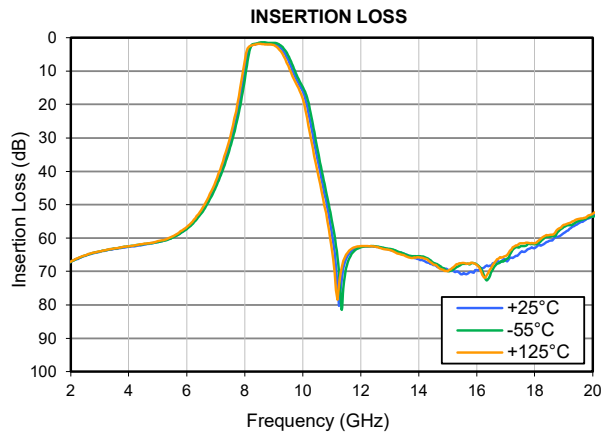
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Mini-Circuits

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TYPICAL PERFORMANCE GRAPHS





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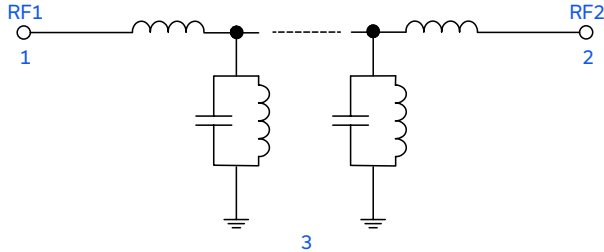
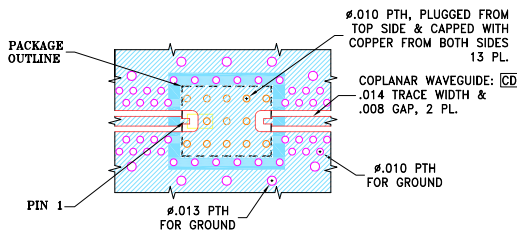


Figure 1. BFCV-8750+ Functional Diagram

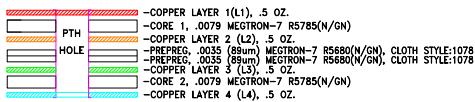
PAD DESCRIPTION

Function	Pad Number	Description
RF1 ²	1	Connects to RF Input Port
RF2 ²	2	Connects to RF Output Port
GROUND	3	Connects to Ground on PCB, (See drawing PL-743)

SUGGESTED PCB LAYOUT: PL-743



STACK-UP DIAGRAM



- TOTAL FINISHED THICKNESS 0.026 ± 10%.
- PTH PRESENT FROM COPPER LAYER 1 TO COPPER LAYER 4.
- INDICATED ON TOP VIEW PTH'S ARE PLUGGED WITH EPOXY AND CAPPED WITH COPPER FROM TOP SIDE.
- L2, L3 AND L4 ARE CONTINUOUS GROUND PLANES.

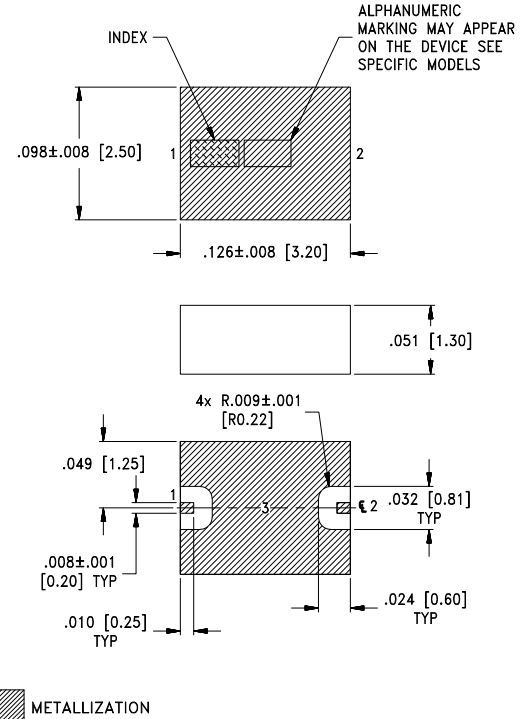
NOTES:

- PCB IS MULTILAYER PCB, SEE STACK-UP DIAGRAM.
- TRACE WIDTH & GAP PARAMETERS ARE SHOWN FOR MEGTRON-7 R-5785(N/GN), WITH DIELECTRIC THICKNESS .0079; COPPER: 1/2 OZ. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.

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

Figure 2. Suggested PCB Layout

CASE STYLE DRAWING



Weight: .040 grams

Dimensions are in inches [mm]. Tolerances: 3 PL. ±.005 Inches

PRODUCT MARKING*: X4

*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-15 Finish: Tin over Nickel plating
RoHS/REACH Status	Compliant
Tape and Reel	TR-F74
Suggested Layout for PCB Design	PL-743
Evaluation Board	TB-BFCV-8750C+
	Gerber File
Environmental Rating	ENV163

NOTES

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuits' applicable established test performance criteria and measurement instructions.
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