



CERAMIC

# Bandpass Filter

## BFCV-2852+

Mini-Circuits

50Ω 28 to 28.8 GHz

### THE BIG DEAL

- mmWave bandpass filter
- Low Insertion Loss – Mid band 2.3 dB typical
- Pick and place standard case style
- Small size 3.2mm x 2.5mm
- Reduced footprint area by employing LGA (Land grid array)
- Suited for very high-volume production
- High quality distributed filter topology
- Wide rejection band



Generic photo used for illustration purposes only

CASE STYLE: JV1210C-10

#### +RoHS Compliant

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

### APPLICATIONS

- 5G Telecommunications

### PRODUCT OVERVIEW

The BFCV-2852+ LTCC Bandpass Filter covers the passband from 28 to 28.8 GHz, with as low as 2.3 dB passband loss, and up to 35dB stopband rejection. This model handles up to 1W 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 is able to achieve repeatable performance on a lot-to-lot basis, up to mmWave frequencies.

### KEY FEATURES

Feature	Advantages
mmWave compatible	Designed for mmWave passband, 28 to 28.8 GHz
Proprietary mmWave compatible LTCC material system	Low loss and repeatable performance on a lot-to-lot basis up to mmWave frequencies.
Cost effective	LTCC is scalable technology that allows for cost reduction at volume.
Small size (3.2mm x 2.5mm)	Allows for high layout density of circuit boards, while minimizing effects of parasitics.
Surface Mountable	Suitable for very high volume automated assembly process





CERAMIC

# Bandpass Filter

## BFCV-2852+

### ELECTRICAL SPECIFICATIONS<sup>1</sup> AT 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Units	
Passband	Center Frequency	—	—	28.3	—	GHz	
	Insertion Loss	F1-F2	28 - 28.8	—	2.3	3.5	dB
	Return Loss	F1-F2	28 - 28.8	—	11	—	dB
Stop Band, Lower	Insertion Loss	DC-F3	0.1 - 21	35	42	—	dB
		21 - 25.5	20	26	—	dB	
Stop Band, Upper	Insertion Loss	F4-F5	31 - 35	16	22	—	dB
		35 - 45	—	12	—	dB	

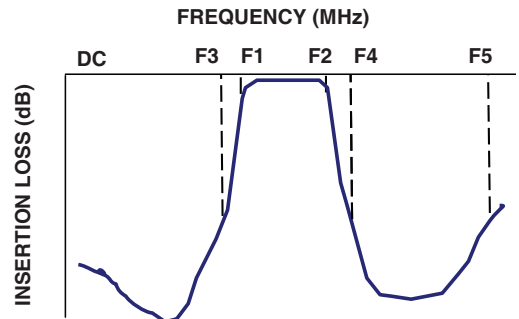
1. Measured on Mini-Circuits Test Board TB-BFCV-2852C+ with feedline losses removed by normalization of S12 and S21 traces to measurement of the thru-line.

### MAXIMUM RATINGS

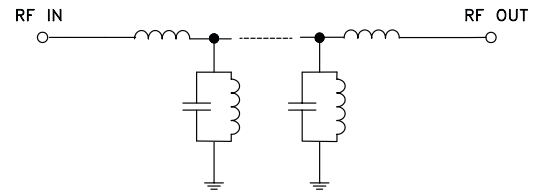
Parameter	Ratings
Operating temperature	-55°C to +125°C
Storage temperature	-55°C to +125°C
RF Power Input	1W max.

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

### TYPICAL FREQUENCY RESPONSE



### FUNCTIONAL SCHEMATIC





CERAMIC

# Bandpass Filter

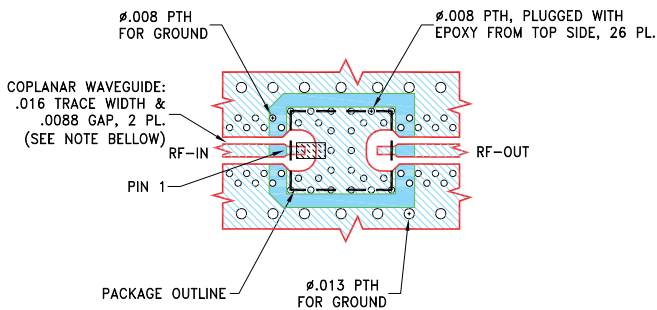
## BFCV-2852+

### PAD CONNECTIONS

INPUT	1
OUTPUT	2
GROUND	3

PRODUCT MARKING: MG

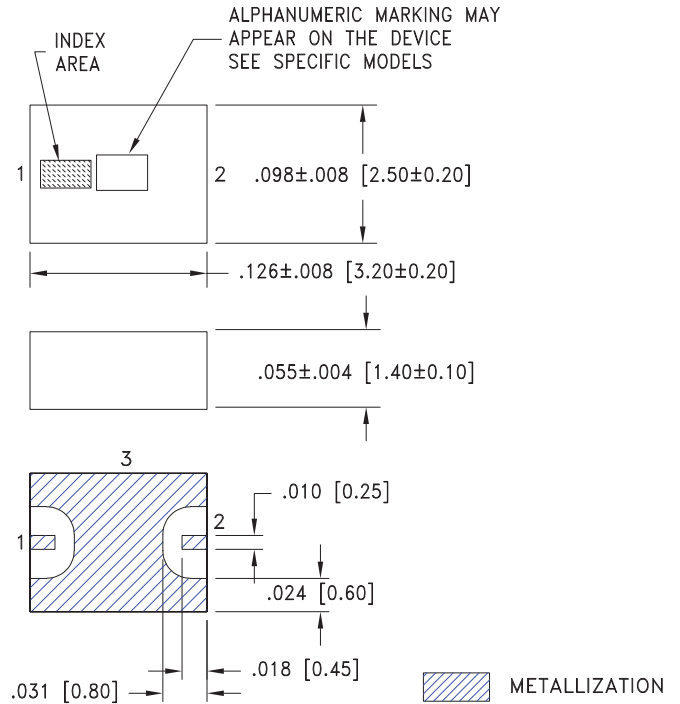
DEMO BOARD MCL P/N: TB-BFCV-2852C+  
SUGGESTED PCB LAYOUT: PL-712



**NOTES:**

1. TRACE WIDTH & GAP PARAMETERS ARE SHOWN FOR MEGTRON-7 R5785(N); DIELECTRIC THICKNESS: .0079±.001; COPPER: HVLP/HVLP. 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



Weight: .045 grams

Dimensions are in inches (mm). Tolerances: 3 Pl. ±.005



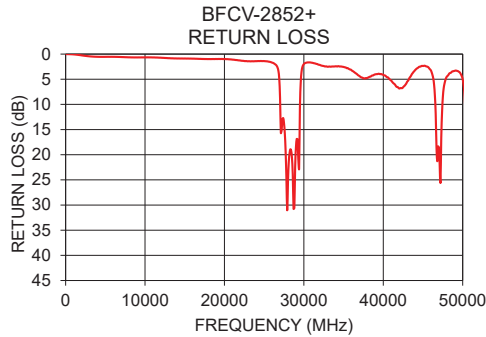
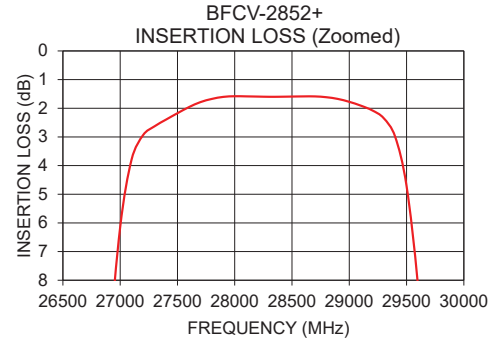
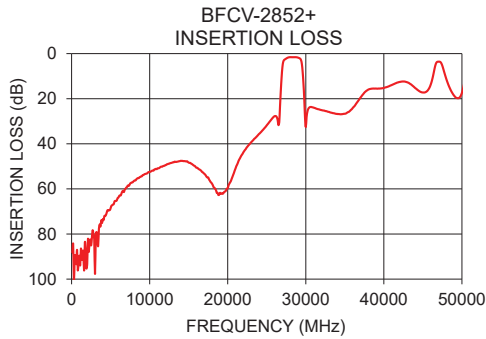
CERAMIC

# Bandpass Filter

## BFCV-2852+

### TYPICAL PERFORMANCE DATA AT 25°C

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)
100	88.09	0.01
5000	68.52	0.54
10000	52.51	0.65
12500	48.81	0.77
15000	48.32	0.88
17500	54.91	0.98
20000	59.70	0.98
22500	41.35	1.38
25000	31.80	1.39
27500	2.17	13.76
28000	1.58	25.19
28800	1.61	30.54
30000	32.58	1.99
32500	25.47	2.37
35000	26.66	2.55
37500	17.32	4.79
40000	15.22	4.12
42500	12.37	6.58
45000	17.23	2.36
50000	17.34	5.01



- 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](http://www.minicircuits.com/MCLStore/terms.jsp)

