

LTCC Bandpass Filter

BFCN-1152+

50Ω 11160 to 11970 MHz

The Big Deal

- Small size 3.2mm x 1.6mm
- Pass band (11000-12000 MHz)
- Very high rejection over wide band



CASE STYLE: FV1206-9

Product Overview

The BFCN-1152+ LTCC Band Pass Filter achieves a miniature size and high repeatability of performance. Wrap-around terminations minimize variations in performance due to parasitics. Covering 11160 to 11970 MHz, these units offer excellent rejection over a wide 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. |
| Wide stopband | No regrowth at 2nd harmonic permits filter to be used in presence of wideband undesired signals. |
| LTCC construction | Provides a rugged package that is well suited for tough environments including high humidity and high temperature extremes. |

Ceramic

Bandpass Filter

50Ω 11160 to 11970 MHz

Features

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

Applications

- Harmonic Rejection
- Transmitters / Receivers

BFCN-1152+

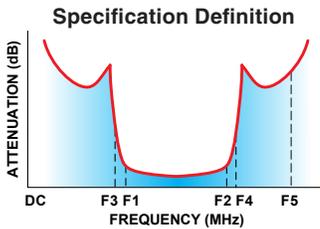


Generic photo used for illustration purposes only
CASE STYLE: FV1206-9

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

Available Tape and Reel at no extra cost

| Reel Size | Devices/Reel |
|-----------|-----------------------------------|
| 7" | 20, 50, 100, 200, 500, 1000, 3000 |



Electrical Specifications^(1,2) at 25°C

| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit | |
|------------------|------------------|-----------------|-------------|-------|------|------|----|
| Pass Band | Center Frequency | — | — | 11540 | — | MHz | |
| | Insertion Loss | F1-F2 | 11160-11970 | — | 5.0 | 7 | dB |
| | VSWR | F1-F2 | 11160-11970 | — | 1.65 | — | :1 |
| Stop Band, Lower | Insertion Loss | DC-F3 | DC-8950 | 35 | 50 | — | dB |
| | VSWR | DC-F3 | DC-8950 | — | 20 | — | :1 |
| Stop Band, Upper | Insertion Loss | F4-F5 | 13750-20900 | 25 | 35 | — | dB |
| | VSWR | F5-F6 | 20900-38000 | 15 | 25 | — | dB |
| | VSWR | F4-F6 | 13750-38000 | — | 10 | — | :1 |

1. Measured on Mini-Circuits Characterization Test Board TB-1003+ with feedline losses removed by normalization of S12 and S21 traces to measurement of TB thru-line.
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* | 2W at 25°C |

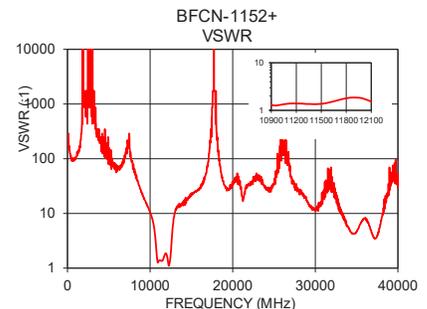
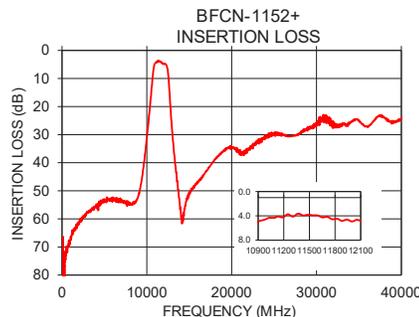
*Passband rating, derate linearly to 0.5W at 100°C ambient
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 1000 | 67.38 | 108.58 |
| 5000 | 54.08 | 86.86 |
| 9000 | 51.69 | 23.49 |
| 10000 | 31.18 | 10.56 |
| 10600 | 12.50 | 4.02 |
| 10800 | 6.48 | 1.79 |
| 11550 | 3.91 | 1.41 |
| 11800 | 4.50 | 1.79 |
| 12600 | 11.62 | 2.99 |
| 13000 | 29.17 | 10.37 |
| 17000 | 42.95 | 82.73 |
| 25000 | 30.09 | 36.20 |
| 32000 | 25.63 | 42.38 |
| 36000 | 27.21 | 8.23 |
| 40000 | 23.94 | 29.96 |

Pad Connections

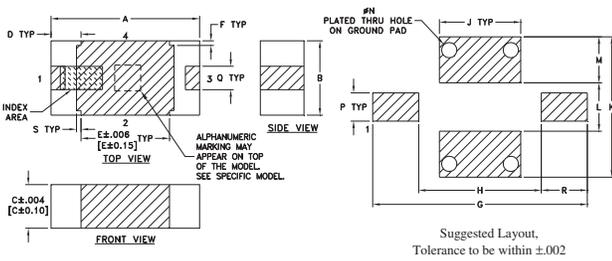
| | |
|--------|---|
| Input | 1 |
| Output | 3 |
| Ground | 2 |



Bandpass Filter

BFCN-1152+

Outline Drawing



Pad Connections

| | |
|--------|---|
| Input | 1 |
| Output | 3 |
| Ground | 2 |

Product Marking: JP

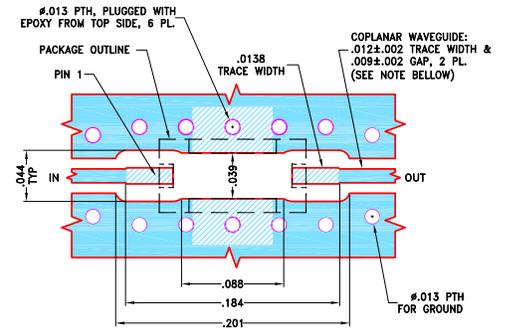
Outline Dimensions (inch/mm)

| | | | | | | | | |
|-------|-------|------|------|------|------|------|------|-------|
| A | B | C | D | E | F | G | H | J |
| .126 | .063 | .037 | .026 | .075 | .004 | .182 | .104 | .069 |
| 3.20 | 1.60 | 0.94 | 0.66 | 1.91 | 0.10 | 4.62 | 2.64 | 1.753 |
| K | L | M | N | P | Q | R | S | wt |
| 0.119 | 0.041 | .039 | .013 | .024 | .020 | .039 | .004 | grams |
| 3.023 | 1.041 | 0.99 | 0.33 | 0.61 | 0.51 | 0.99 | 0.10 | .020 |

Additional 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-Circuit's applicable established test performance criteria and measurement instructions.
- 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

Demo Board MCL P/N: TB- 1003+ Suggested PCB Layout (PL-610)



NOTES:

- TRACE WIDTH AND GAP PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .0066±.0007". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
 - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
 - UNIT LAND PATTERN WAS OPTIMIZED FOR BETTER PERFORMANCE.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.