

Ceramic Bandpass Filter

BFCN-5100+

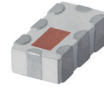
50Ω 3100 to 7100 MHz

Features

- Extremely wide passband, 3100-7100 MHz
- Low loss <1.3 dB typ.
- Small size (0.126"x0.063"x0.037")
- Temperature stable
- Hermetically sealed

Applications

- Harmonic Rejection
- Transmitters / receivers
- EW



Generic photo used for illustration purposes only

CASE STYLE: FV1206-6

+RoHS Compliant

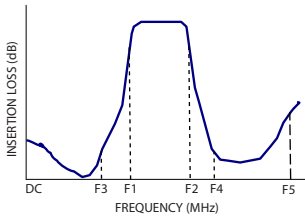
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications



Available Tape and Reel at no extra cost

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

Specification Definition



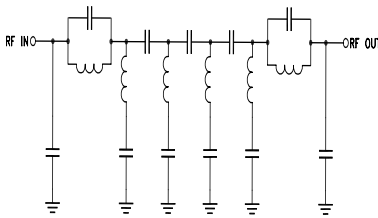
Electrical Specifications^{1,2} at 25°C

| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|------------------|------------------|-----------------|------|------|------|------|
| Pass Band | Center Frequency | — | — | 5100 | — | MHz |
| | Insertion Loss | F1 - F2 | — | 1.5 | 2.1 | dB |
| | VSWR | F1 - F2 | — | 2.0 | — | :1 |
| Stop Band, Lower | Insertion Loss | DC - F3 | — | 25 | — | dB |
| | VSWR | DC - F3 | — | 20 | — | :1 |
| Stop Band, Upper | Insertion Loss | F4 - F5 | — | 20 | — | dB |
| | VSWR | F4 - F5 | — | 30 | — | :1 |

1. Measured on Mini-Circuits Characterization Test Board TB-712+.

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.

Functional Schematic



Maximum Ratings

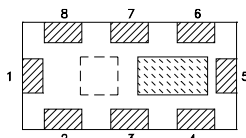
| | |
|-----------------------|-----------------|
| Operating Temperature | -40°C to +85°C |
| Storage Temperature* | -55°C to +100°C |
| RF Power Input** | 2W at 25°C |

* 12 months max.

**Passband rating, derate linearly to 0.5W at 85°C ambient

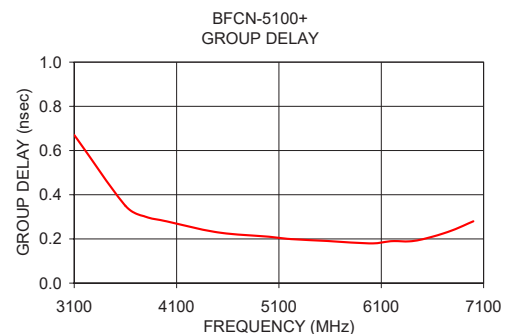
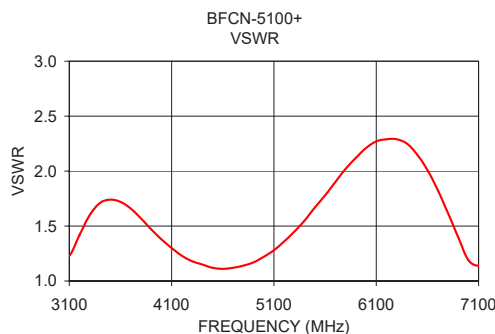
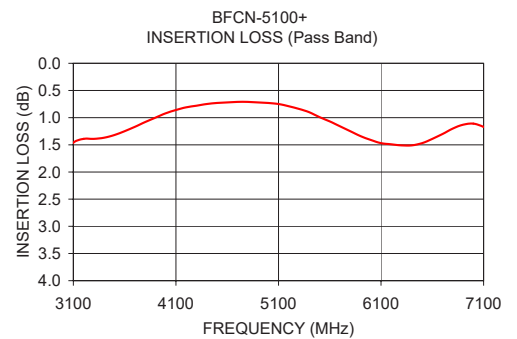
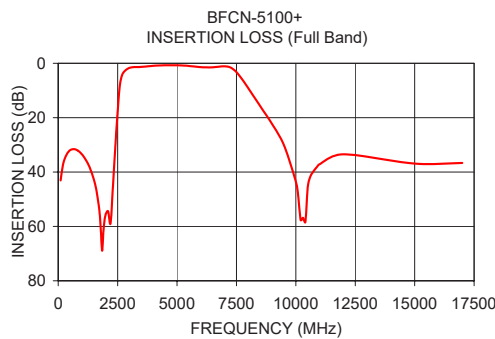
Permanent damage may occur if any of these limits are exceeded.

Top View



Pad Connections

| | |
|--------|-------------|
| Input | 1 |
| Output | 5 |
| Ground | 2,3,4,6,7,8 |



Full Band Performance

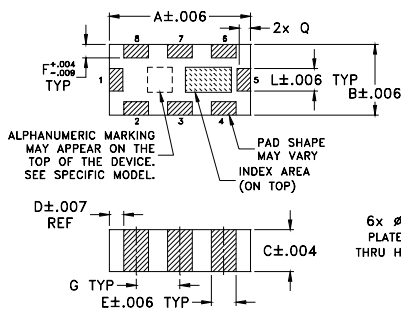
Pass Band Performance

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) | Frequency (MHz) | Insertion Loss (dB) | Group Delay (nsec) |
|-----------------|---------------------|-----------|-----------------|---------------------|--------------------|
| 100.00 | 43.08 | 331.23 | 3100.00 | 1.46 | 0.67 |
| 1000.00 | 33.50 | 69.18 | 3600.00 | 1.25 | 0.35 |
| 2000.00 | 55.46 | 29.88 | 3800.00 | 1.08 | 0.30 |
| 2100.00 | 54.46 | 25.43 | 4000.00 | 0.92 | 0.28 |
| 3100.00 | 1.46 | 1.23 | 4500.00 | 0.73 | 0.23 |
| 5000.00 | 0.73 | 1.22 | 5000.00 | 0.73 | 0.21 |
| 6000.00 | 1.41 | 2.21 | 5200.00 | 0.79 | 0.20 |
| 7000.00 | 1.11 | 1.19 | 5600.00 | 1.07 | 0.19 |
| 7100.00 | 1.17 | 1.14 | 6000.00 | 1.41 | 0.18 |
| 9000.00 | 22.35 | 32.17 | 6200.00 | 1.49 | 0.19 |
| 9500.00 | 30.15 | 38.73 | 6400.00 | 1.51 | 0.19 |
| 11000.00 | 37.13 | 57.48 | 6600.00 | 1.39 | 0.21 |
| 12000.00 | 33.46 | 102.12 | 6800.00 | 1.20 | 0.24 |
| 15000.00 | 36.89 | 39.53 | 7000.00 | 1.11 | 0.28 |
| 17000.00 | 36.67 | 54.34 | 7100.00 | 1.17 | 0.31 |

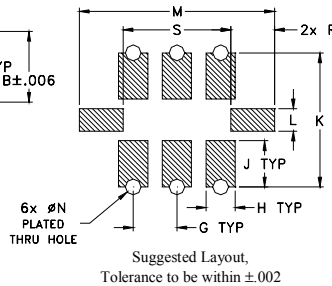
Pad Connections

| | |
|--------|-------------|
| Input | 1 |
| Output | 5 |
| Ground | 2,3,4,6,7,8 |

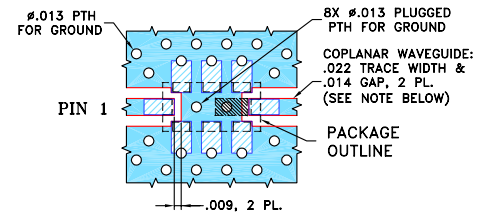
Outline Drawing



PCB Land Pattern



Demo Board MCL P/N: TB-712-D+ Suggested PCB Layout (PL-393)



- NOTE:**
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .001". 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.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
 - DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G | H | J | |
|------|------|------|------|------|------|------|------|-------|--|
| .126 | .063 | .037 | .013 | .022 | .012 | .039 | .026 | .041 | |
| 3.20 | 1.60 | 0.94 | 0.33 | 0.56 | 0.30 | 0.99 | 0.66 | 1.04 | |
| K | L | M | N | P | Q | R | S | wt | |
| .119 | .020 | .174 | .014 | -- | .012 | .039 | .096 | grams | |
| 3.02 | 0.51 | 4.42 | 0.36 | -- | 0.30 | 0.99 | 2.44 | .017 | |

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.
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