

Ceramic Balance Filter

50Ω 4650 to 5150 MHz

BBFCV-492+



Generic photo used for illustration purposes only

CASE STYLE: JV1210C-4

+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, 2000 |

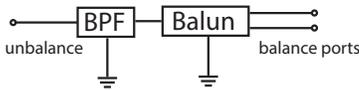
Features

- Small size (0.126"x0.098"x0.039")
- Temperature stable
- Hermetically sealed
- LTCC construction

Applications

- 5G
- Cellular

Simplified Schematic



Electrical Specifications at 25°C

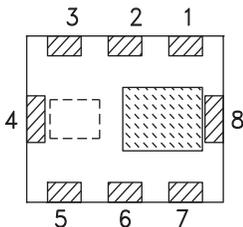
| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|---------------------|-----------------|------|------|------|--------|
| Impedance Ratio | | | 2:1 | | |
| Insertion Loss | 4650 - 5150 | — | — | 3.5 | dB |
| Attenuation | 50-1098 | 28 | — | — | dB |
| | 1098-4000 | 20 | — | — | |
| | 6696-8049 | 22 | — | — | |
| | 9645-12750 | 10 | — | — | |
| Amplitude Unbalance | 4650-5150 | — | — | 1.3 | dB |
| Phase Unbalance | 4650-5150 | — | — | 12 | degree |
| Input VSWR | 4650-5150 | — | 1.67 | — | |

Maximum Ratings

| | |
|----------------------------------|-----------------|
| Operating Temperature | -55°C to +105°C |
| Storage Temperature ¹ | -55°C to +105°C |
| RF Power Input ² | 1W @25°C |

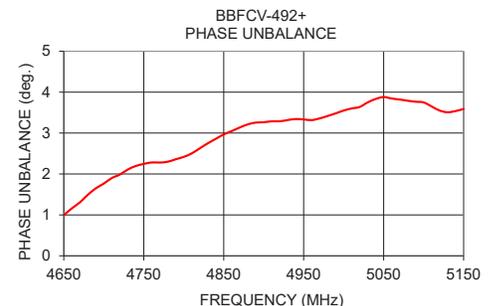
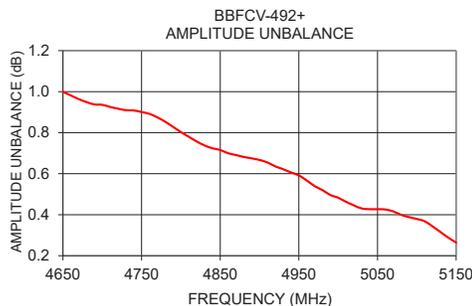
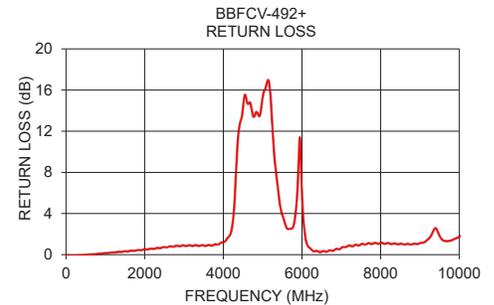
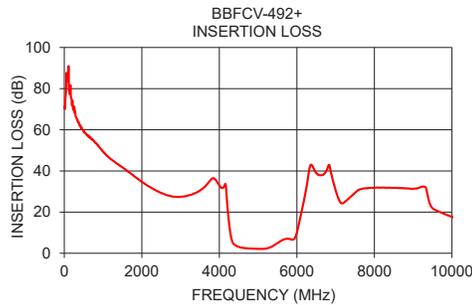
1. Refer to product storage temperature after installation
Suggestion for T&R unused product storage condition: +5 ~ +35 °C, Humidity 45~75%RH, 12 month Max
2. Derate linearly to 0.5W at 85°C

Top View



Pad Connections

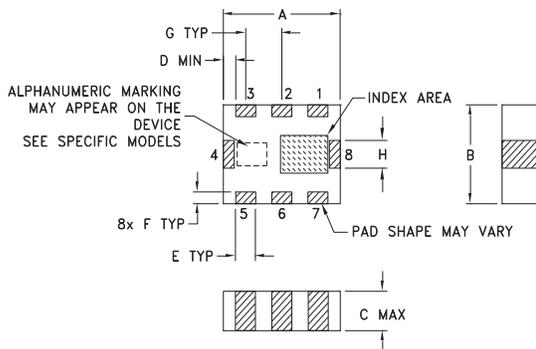
| | |
|-----------------|---------|
| Unbalanced Port | 7 |
| Balanced Port | 3, 5 |
| GND | 2, 4, 8 |
| GND or DC Feed | 6 |
| NC | 1 |



Typical Performance Data

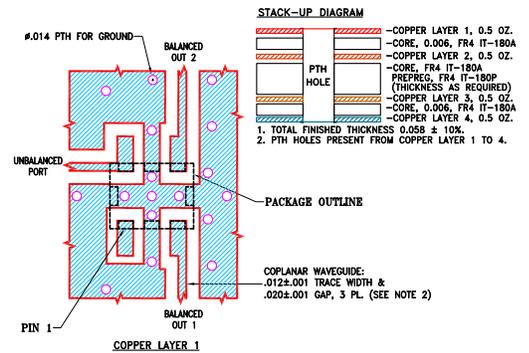
| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) | Amplitude Unbalance (dB) | Phase Unbalance (Deg.) |
|-----------------|---------------------|------------------|--------------------------|------------------------|
| 10 | 71.41 | 0.06 | 1.38 | 100.60 |
| 50 | 81.78 | 0.04 | 2.23 | 151.82 |
| 100 | 83.48 | 0.04 | 8.13 | 134.82 |
| 500 | 59.00 | 0.08 | 9.62 | 168.96 |
| 1000 | 49.41 | 0.26 | 10.86 | 120.62 |
| 2000 | 34.69 | 0.62 | 1.97 | 57.65 |
| 3000 | 27.42 | 1.00 | 3.11 | 6.88 |
| 3500 | 30.50 | 1.00 | 1.03 | 40.22 |
| 4000 | 32.88 | 1.31 | 3.27 | 90.58 |
| 4650 | 2.52 | 14.66 | 1.00 | 1.33 |
| 5150 | 2.17 | 16.82 | 0.26 | 3.55 |
| 6000 | 10.14 | 5.42 | 0.91 | 0.65 |
| 7000 | 30.56 | 0.79 | 4.17 | 74.13 |
| 8000 | 31.83 | 1.25 | 1.36 | 63.10 |
| 9000 | 31.36 | 1.24 | 4.95 | 80.75 |
| 10000 | 17.71 | 1.88 | 3.06 | 167.42 |

Outline Drawing



Suggested Layout, Tolerance to be within .002

Demo Board MCL P/N: TB-1053+ Suggested PCB Layout (PL-632)



- NOTES:
- PCB IS MULTILAYER PCB, SEE STACK-UP DIAGRAM.
 - TRACE WIDTH & GAP PARAMETERS ARE SHOWN FOR FR4 IT-180A WITH DIELECTRIC THICKNESS .006"±.0007"; COPPER: 1/2 OZ. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
 - LAYERS 2,3,4 OF THE PCB ARE CONTINUOUS GROUND PLANE.
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G |
|------|------|------|------|------|-------|------|
| .126 | .098 | .039 | .004 | .022 | .012 | .039 |
| 3.2 | 2.5 | 1.0 | 0.1 | 0.56 | 0.3 | 1.0 |
| H | J | K | L | M | wt | |
| .028 | .031 | .024 | .130 | 0.15 | grams | |
| 0.7 | 0.8 | 0.6 | 3.30 | 3.81 | 0.030 | |

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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