

Ceramic

Bandpass Filter

50Ω 3400 to 3850 MHz

BFCV-3641+



Generic photo used for illustration purposes only

CASE STYLE: JV1210C-2

Features

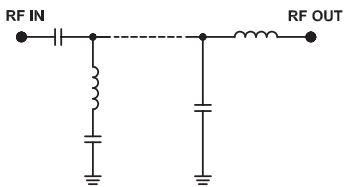
- small size
- temperature stable
- hermetically sealed
- LTCC construction
- excellent stopband rejection (usable to 12 GHz, 20 dB typ.)

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

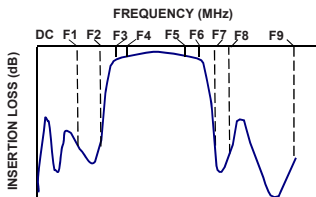
Applications

- software defined radio
- WLAN
- cellular network

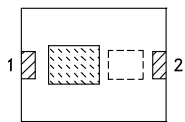
Functional Schematic



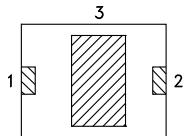
Typical Frequency Response



TOP VIEW



BOTTOM VIEW



Pad Connections

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

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

| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit | |
|-------------------------|------------------|-----------------|-----------|------|------|------|----|
| Pass Band | Center Frequency | — | — | 3636 | — | MHz | |
| | Insertion Loss | F3-F6 | 3400-3850 | — | 1.9 | 3.5 | dB |
| | | F4-F5 | 3600-3800 | — | 1.6 | — | dB |
| Stop Band, Lower | VSWR | F3-F6 | 3400-3850 | — | 1.7 | — | :1 |
| | Insertion Loss | DC-F1 | DC-2670 | 26 | 35 | — | dB |
| | | F2 | 2930 | — | 20 | — | dB |
| Stop Band, Upper | VSWR | DC-F1 | DC-2670 | — | 20 | — | :1 |
| | Insertion Loss | F7 | 4650 | — | 20 | — | dB |
| | | F8-F9 | 5350-9600 | 30 | 35 | — | dB |
| | | F8-F9 | 5350-9600 | — | 20 | — | :1 |

(1) Measured on Mini-Circuits Characterization Test Board TB-980+

(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.

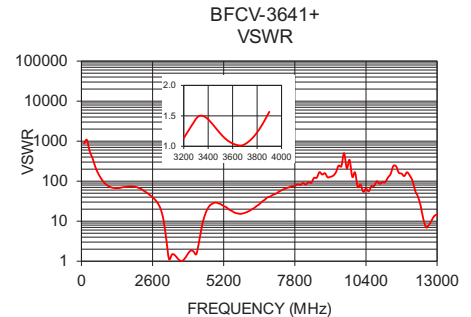
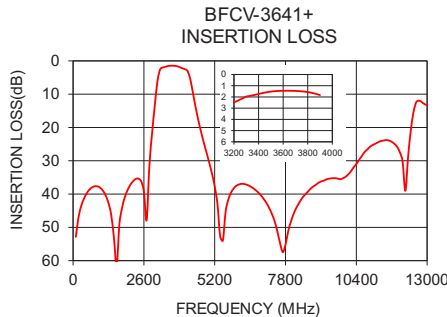
Maximum Ratings

| | |
|-----------------------|-----------------|
| Operating Temperature | -55°C to +100°C |
| Storage Temperature | -55°C to +100°C |
| RF Power Input* | 0.5W max @ |

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

Typical Performance Data at 25°C

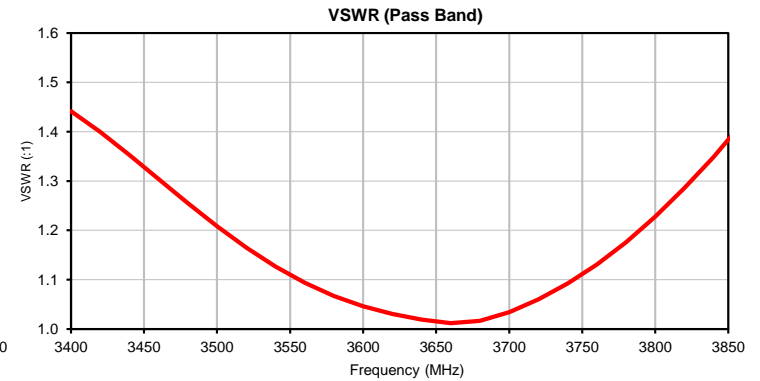
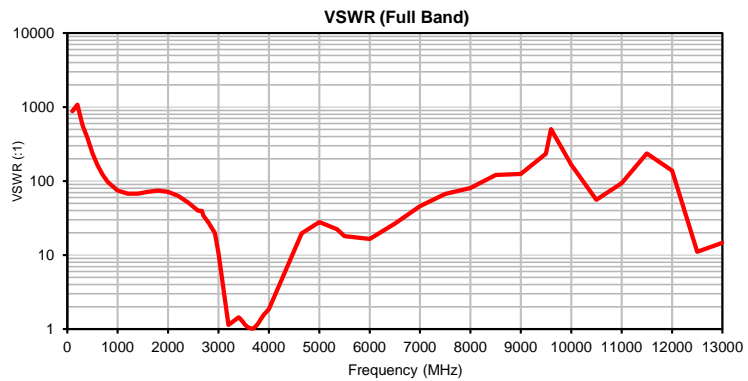
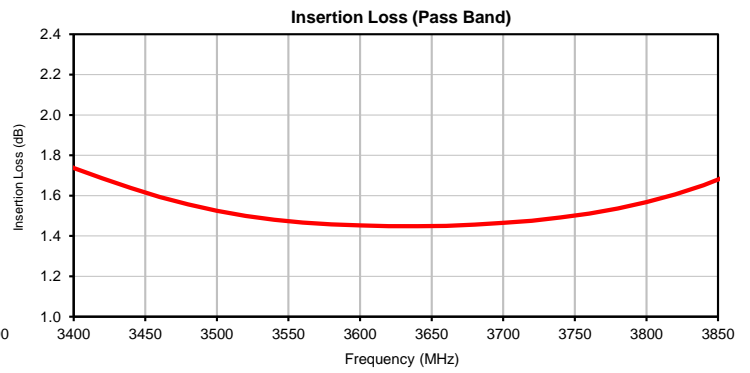
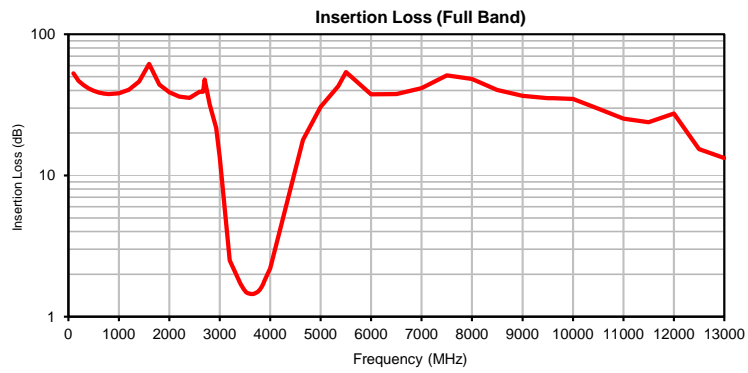
| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 100 | 52.86 | 876.08 |
| 500 | 39.78 | 235.50 |
| 1000 | 38.14 | 74.48 |
| 2000 | 38.83 | 71.53 |
| 3400 | 1.74 | 1.44 |
| 3600 | 1.45 | 1.05 |
| 3800 | 1.57 | 1.23 |
| 3900 | 1.83 | 1.57 |
| 4600 | 17.86 | 19.72 |
| 5300 | 42.92 | 22.23 |
| 7000 | 41.47 | 45.89 |
| 9600 | 35.24 | 502.48 |
| 11000 | 25.28 | 93.97 |
| 12000 | 27.47 | 138.85 |
| 13000 | 13.31 | 14.68 |



Typical Performance Data

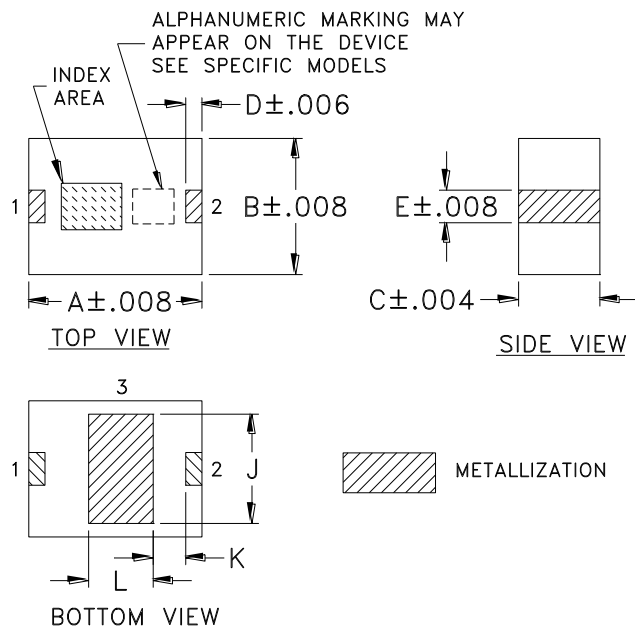
| FREQUENCY (MHz) | INSERTION LOSS (dB) | VSWR (:1) |
|--------------------|------------------------|--------------|
| 100 | 52.86 | 876.08 |
| 200 | 46.92 | 1074.59 |
| 300 | 43.57 | 564.53 |
| 400 | 41.36 | 384.59 |
| 500 | 39.78 | 235.50 |
| 600 | 38.68 | 162.13 |
| 700 | 37.99 | 122.93 |
| 800 | 37.67 | 97.57 |
| 1000 | 38.14 | 74.48 |
| 1200 | 40.48 | 67.51 |
| 1400 | 46.27 | 67.67 |
| 1600 | 61.67 | 71.57 |
| 1800 | 44.07 | 74.24 |
| 2000 | 38.83 | 71.53 |
| 2200 | 36.15 | 62.92 |
| 2400 | 35.37 | 51.16 |
| 2600 | 39.23 | 39.72 |
| 2670 | 39.23 | 39.72 |
| 2700 | 47.87 | 33.95 |
| 2800 | 31.69 | 27.49 |
| 2930 | 21.77 | 19.75 |
| 3000 | 13.37 | 10.68 |
| 3200 | 2.50 | 1.13 |
| 3400 | 1.74 | 1.44 |
| 3420 | 1.69 | 1.40 |
| 3440 | 1.64 | 1.35 |
| 3460 | 1.59 | 1.30 |
| 3480 | 1.56 | 1.26 |
| 3500 | 1.52 | 1.21 |
| 3520 | 1.50 | 1.17 |
| 3540 | 1.48 | 1.13 |
| 3560 | 1.47 | 1.09 |
| 3580 | 1.46 | 1.07 |
| 3600 | 1.45 | 1.05 |
| 3620 | 1.45 | 1.03 |
| 3640 | 1.45 | 1.02 |
| 3660 | 1.45 | 1.01 |
| 3680 | 1.46 | 1.02 |
| 3700 | 1.46 | 1.03 |
| 3720 | 1.48 | 1.06 |
| 3740 | 1.49 | 1.09 |
| 3760 | 1.51 | 1.13 |
| 3780 | 1.54 | 1.18 |
| 3800 | 1.57 | 1.23 |
| 3820 | 1.61 | 1.29 |
| 3840 | 1.65 | 1.35 |
| 3860 | 1.71 | 1.42 |
| 3880 | 1.77 | 1.49 |
| 3900 | 1.83 | 1.57 |
| 4000 | 2.20 | 1.86 |
| 4650 | 17.86 | 19.72 |
| 5000 | 30.61 | 27.97 |
| 5350 | 42.92 | 22.23 |
| 5500 | 53.98 | 18.04 |
| 6000 | 37.47 | 16.46 |
| 6500 | 37.68 | 26.52 |
| 7000 | 41.47 | 45.89 |
| 7500 | 51.17 | 67.14 |
| 8000 | 48.24 | 80.80 |
| 8500 | 40.31 | 120.90 |
| 9000 | 36.68 | 124.72 |
| 9500 | 35.26 | 233.79 |
| 9600 | 35.24 | 502.48 |
| 10000 | 34.84 | 165.77 |
| 10500 | 29.76 | 55.57 |
| 11000 | 25.28 | 93.97 |
| 11500 | 23.79 | 236.33 |
| 12000 | 27.47 | 138.85 |
| 12500 | 15.38 | 11.06 |
| 13000 | 13.31 | 14.68 |

Typical Performance Curves

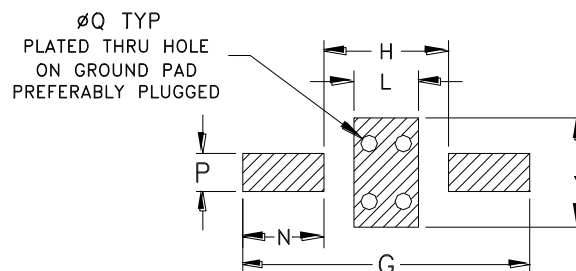


Outline Dimensions

JV1210C-2



PCB Land Pattern



Suggested Layout,
Tolerance to be within $\pm .002$

| CASE # | A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q | WT. GRAM |
|-----------|---------------|---------------|---------------|---------------|---------------|----------|---------------|---------------|---------------|----------------|---------------|----------|---------------|----------------|---------------|----------|
| JV1210C-2 | .126 (3.2) | .098 (2.5) | .059 (1.5) | .012 (0.3) | .024 (0.6) | -- -- | .205 (5.2) | .087 (2.2) | .079 (2.0) | .028 (0.70) | .047 (1.2) | -- -- | .059 (1.5) | .026 (0.65) | .012 (0.3) | .045 |

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .01$; 3 Pl. $\pm .005$

Notes:

1. Open style, ceramic base.
2. Termination finish: **as shown below or indicated on Data Sheet.**
For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.
3. Pad tolerance is non-cumulative. Minimum spacing between each pad is .004.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS

Tape & Reel Packaging TR-F74

DEVICE ORIENTATION IN T&R

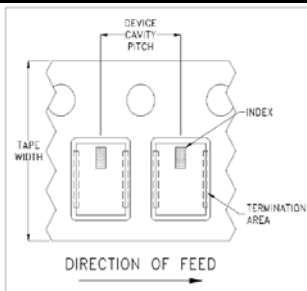


ILLUSTRATION 1

Applicable Case Styles

GE0805C-1
 GE0805C-1AP
 JV1210C-1
 GU2939

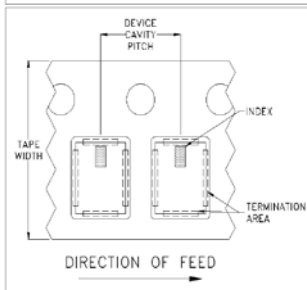


ILLUSTRATION 2

Applicable Case Styles

JV1210C
 JV1210C-2
 JV1210C-3
 JV1210C-4
 JV1210C-5
 JV1210C-6
 JV1210C-11

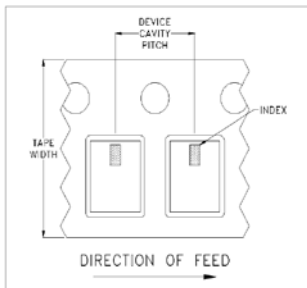


ILLUSTRATION 3

Applicable Case Styles

JC0603C-8
 JV1210C-7
 JV1210C-8
 JV1210C-9
 JV1210C-10
 JV1210C-13
 GE0805C-13

| Tape Width, mm | Device Cavity Pitch, mm | Real Size, inches | Devices per Reel | |
|----------------|-------------------------|-------------------|-------------------------------------|------|
| 8 | 4 | 7 | Small quantity standards (see note) | 20 |
| | | | | 50 |
| | | | | 100 |
| | | | | 200 |
| | | | | 500 |
| | | | Standard | 1000 |
| | | | | 2000 |
| | | | 4000 | |

Note: Small reel availability varies by model. Refer to pricing and availability on individual model dashboard.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf



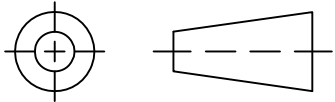
INTERNET <http://www.minicircuits.com>

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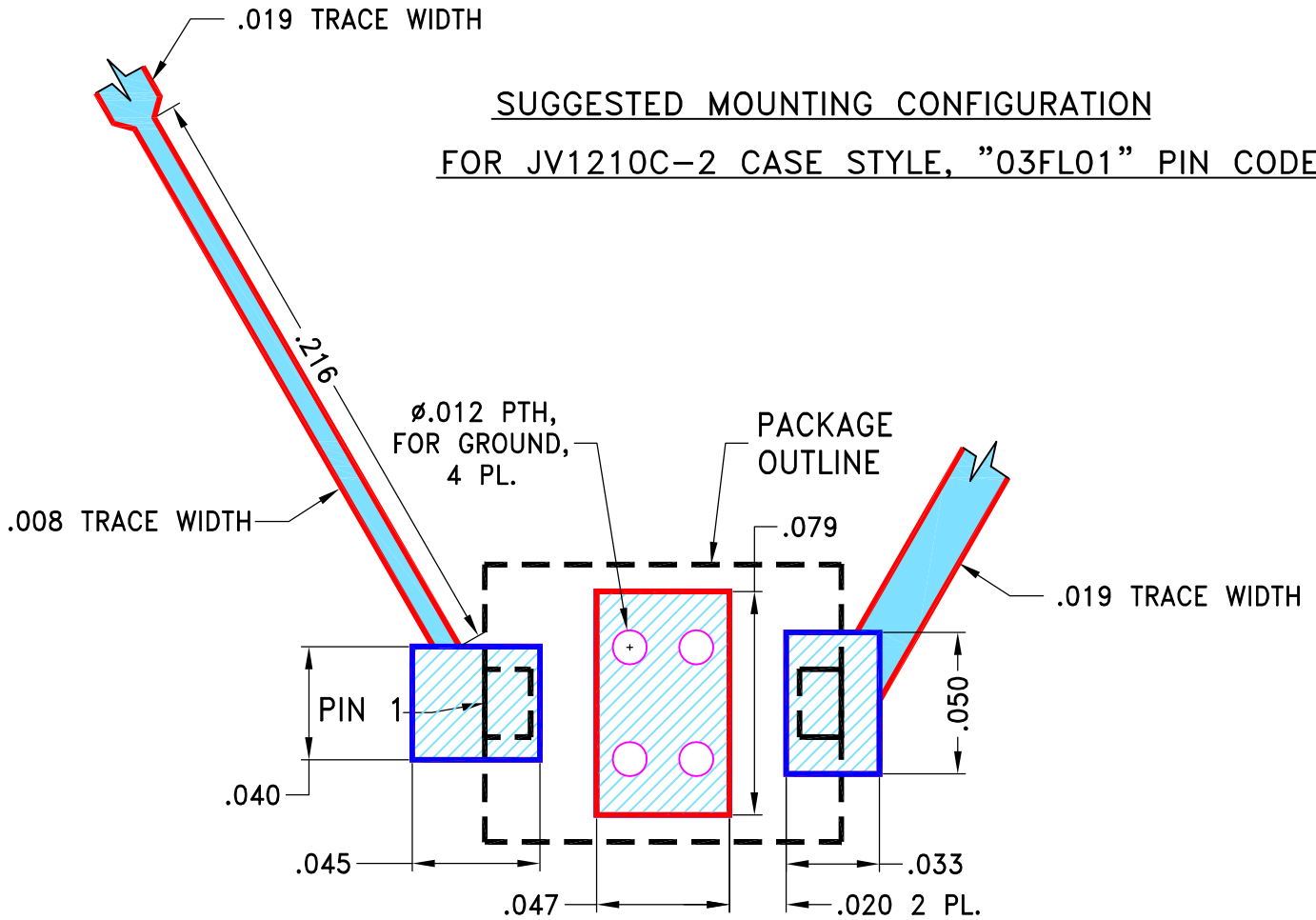
THIRD ANGLE PROJECTION



REVISIONS

| REV | ECN No. | DESCRIPTION | DATE | DR | AUTH |
|-----|---------|-------------|----------|----|------|
| OR | M169330 | NEW RELEASE | 08/08/18 | GF | BK |
| | | | | | |
| | | | | | |

SUGGESTED MOUNTING CONFIGURATION
FOR JV1210C-2 CASE STYLE, "03FL01" PIN CODE



NOTES:

1. TRACE WIDTH IS SHOWN FOR FR4 (IT-180A) WITH DIELECTRIC THICKNESS $.010 \pm .001$. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
3. UNIT LAND PATTERN WAS ADJUSTED FOR HIGH FREQUENCY PERFORMANCE AND DIFFERENT FROM SUGESTED LAYOUT AS PER JV1210C-2.



DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).



DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

| UNLESS OTHERWISE SPECIFIED | INITIALS | DATE |
|----------------------------|-------------|----------|
| DIMENSIONS ARE IN INCHES | DRAWN GF | 08/02/18 |
| TOLERANCES ON: | CHECKED IL | 08/07/18 |
| 2 PL DECIMALS ± | APPROVED BK | 08/08/18 |
| 3 PL DECIMALS ± .005 | | |
| ANGLES ± | | |
| FRACTIONS ± | | |



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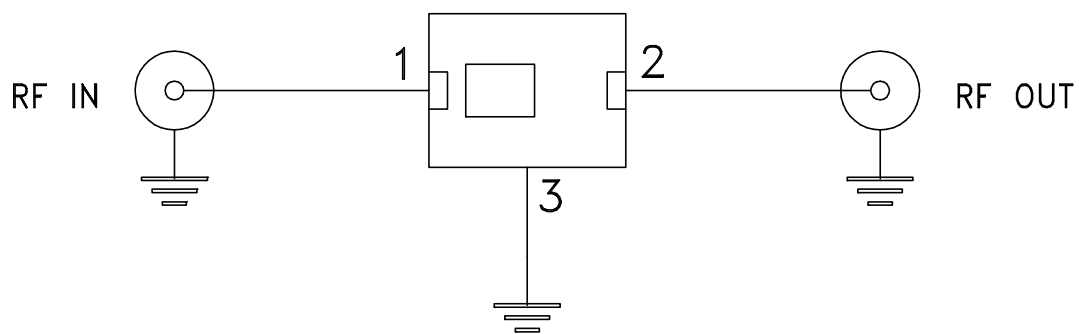
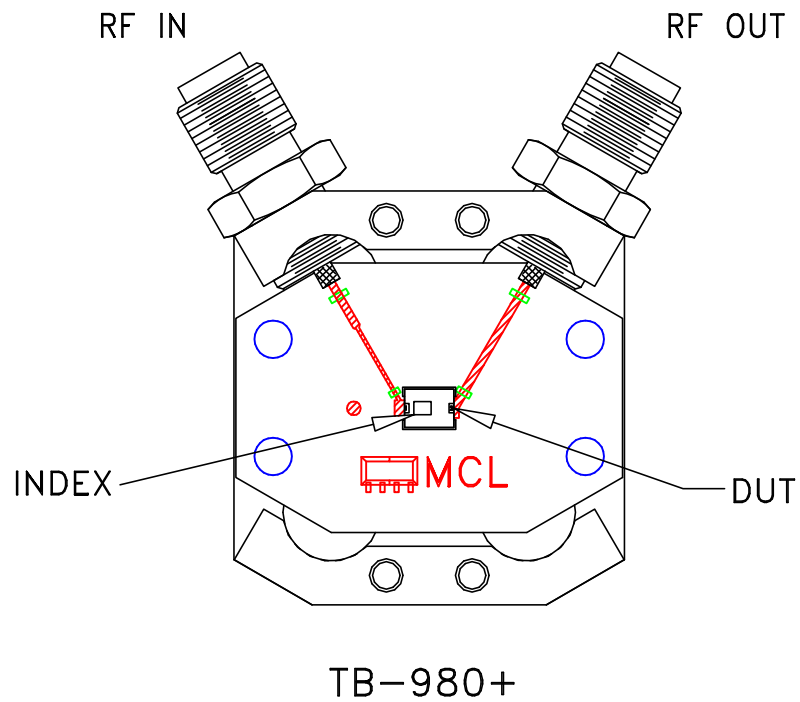
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 Brooklyn NY 11235

PL, 03FL01, JV1210C-2, TB-980+

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| | | | |
|-----------|---------------------|--------------------------|---------------|
| SIZE A | CODE IDENT 15542 | DRAWING NO: 98-PL-542 | REV: OR |
| FILE: | 98PL542 | SCALE: 15:1 | SHEET: 1 OF 1 |


Evaluation Board and Circuit



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: FR4 or equivalent,
Dielectric Constant=4.5, Thickness=.010 inch.

 **Mini-Circuits®**

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification | Test/Inspection Condition | Reference/Spec |
|----------------------------|---|--|
| Operating Temperature | -55° to 100°C Ambient Environment | Individual Model Data Sheet |
| Storage Temperature | -55° to 100° C Ambient Environment | Individual Model Data Sheet |
| Humidity | 90 to 95% RH, 240 hours, 50°C | MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours |
| Solder Reflow Heat | Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak | J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1 |
| Solderability | 10X Magnification | J-STD-002, Para 4.2.5, Test S, 95% Coverage |
| Vibration (High Frequency) | 20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36) | MIL-STD-202, Method 204, Condition D |
| Mechanical Shock | 50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes | MIL-STD-202, Method 213, Condition A |