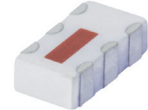


Power Splitter/Combiner

SCN-2-35+ SCN-2-35

2 Way-0° 50Ω 2825 to 3700 MHz



Generic photo used for illustration purposes only
CASE STYLE: FV1206-1

Maximum Ratings

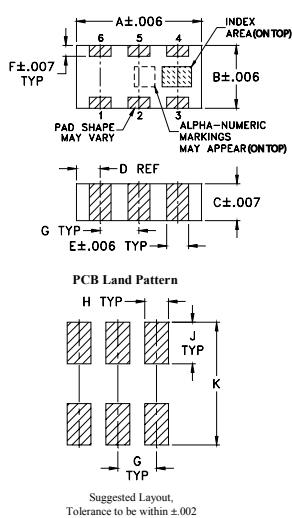
| | |
|-----------------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 100°C |
| Power Input (as a splitter) | 4W* max. |

*Derate linearly to 1.3W at 100°C ambient, power input as combiner is limited by rating of external 100Ω Resistor.
Permanent damage may occur if any of these limits are exceeded.

Pin Connections

| | |
|----------|----------------------------|
| SUM PORT | 2 |
| PORT 1 | 6 |
| PORT 2 | 4 |
| GROUND | 1,3,5 |
| PORT 1-2 | resistor external 100 OHMS |

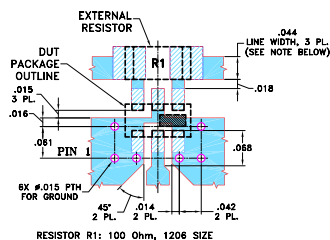
Outline Drawing



Outline Dimensions (inch / mm)

| A | B | C | D | E | F | |
|------|------|------|------|------|------|-------|
| .126 | .063 | .035 | .024 | .022 | .011 | |
| 3.20 | 1.60 | 0.89 | 0.61 | 0.56 | 0.28 | |
| G | H | J | K | | | wt |
| .039 | .024 | .042 | .123 | | | grams |
| 0.99 | 0.61 | 1.07 | 3.12 | | | .020 |

Demo Board MCL P/N: TB-252
Suggested PCB Layout (PL-129)



- NOTES:
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH 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

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

Features

- isolation resistor, external 100 ohms
- low insertion loss, 0.4 dB typ.
- excellent amplitude unbalance, 0.1 dB typ.
- excellent phase unbalance, 0.8 deg. typ.
- high isolation, 28 dB typ.
- excellent power handling, 4W as splitter
- small size, 0.12"X0.06"X0.035"
- ESD non-sensitive
- temperature stable LTCC technology
- wrap around terminations for excellent solderability
- low cost
- protected by US patent 6,967,544

Applications

- amateur radio
- defense
- wireless communication

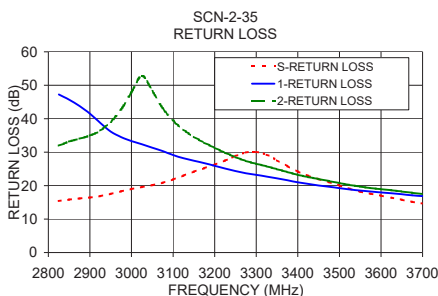
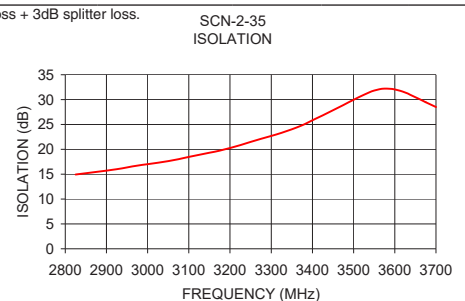
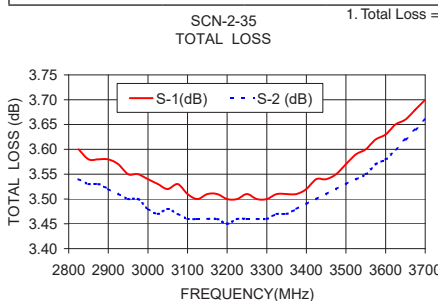
Electrical Specifications

| FREQUENCY (MHz) | INSERTION LOSS (dB) ABOVE 3.0 dB | | ISOLATION (dB) | | PHASE UNBALANCE (Degrees) | | AMPLITUDE UNBALANCE (dB) | | RETURN LOSS (dB) | |
|-----------------|-------------------------------------|------|----------------|------|---------------------------|------|--------------------------|------|------------------|-------------|
| | Typ. | Max. | Typ. | Min. | Typ. | Max. | Typ. | Max. | INPUT Typ. | OUTPUT Typ. |
| 2825-3700 | 0.4 | 1.3 | 22 | 13 | 1.0 | 4.0 | 0.1 | 0.3 | 18 | 20 |
| 3200-3500 | 0.4 | 1.0 | 28 | 18 | 0.8 | 4.0 | 0.1 | 0.3 | 20 | 23 |

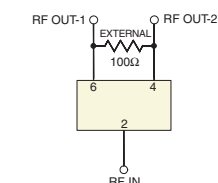
Typical Performance Data

| Frequency (MHz) | Total Loss ¹ (dB) | | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | Return Loss (dB) | | |
|-----------------|------------------------------|------|--------------------------|----------------|------------------------|------------------|-------|-------|
| | S-1 | S-2 | | | | S | 1 | 2 |
| 2825.00 | 3.60 | 3.54 | 0.06 | 14.94 | 0.28 | 15.39 | 47.26 | 31.96 |
| 2900.00 | 3.58 | 3.52 | 0.05 | 15.70 | 0.22 | 16.46 | 41.52 | 34.99 |
| 3000.00 | 3.54 | 3.48 | 0.05 | 17.02 | 0.21 | 18.99 | 33.34 | 47.87 |
| 3100.00 | 3.51 | 3.46 | 0.05 | 18.47 | 0.17 | 21.86 | 29.16 | 39.50 |
| 3200.00 | 3.50 | 3.45 | 0.05 | 20.26 | 0.14 | 26.24 | 25.93 | 31.34 |
| 3300.00 | 3.50 | 3.46 | 0.04 | 22.71 | 0.14 | 30.10 | 23.20 | 26.54 |
| 3450.00 | 3.54 | 3.51 | 0.04 | 27.85 | 0.12 | 21.96 | 20.06 | 21.98 |
| 3500.00 | 3.57 | 3.53 | 0.04 | 29.97 | 0.13 | 20.04 | 19.24 | 20.75 |
| 3550.00 | 3.60 | 3.55 | 0.04 | 31.81 | 0.11 | 18.22 | 18.51 | 19.70 |
| 3575.00 | 3.62 | 3.57 | 0.05 | 32.20 | 0.09 | 17.56 | 18.24 | 19.31 |
| 3600.00 | 3.63 | 3.58 | 0.05 | 32.06 | 0.06 | 17.00 | 17.98 | 18.95 |
| 3625.00 | 3.65 | 3.60 | 0.05 | 31.43 | 0.04 | 16.42 | 17.72 | 18.61 |
| 3650.00 | 3.66 | 3.62 | 0.05 | 30.50 | 0.01 | 15.80 | 17.43 | 18.26 |
| 3675.00 | 3.68 | 3.64 | 0.04 | 29.47 | 0.02 | 15.18 | 17.13 | 17.88 |
| 3700.00 | 3.70 | 3.66 | 0.04 | 28.52 | 0.03 | 14.65 | 16.85 | 17.50 |

1. Total Loss = Insertion Loss + 3dB splitter loss.



electrical schematic



2 Way-0° Power Splitter/Combiner

SCN-2-35

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0dBm @Temperature = +25°C

| FREQ. (MHz) | TOTAL LOSS ¹ (dB) | | AMP. UNBAL. (dB) | PHASE UNBAL. (deg.) | ISOLATION (dB) | VSWR (:1) | | |
|----------------|---------------------------------|------|------------------------|---------------------------|-------------------|--------------|------|------|
| | S-1 | S-2 | | | | S | 1 | 2 |
| 10 | 3.56 | 3.54 | 0.02 | 0.10 | 3.56 | 2.00 | 1.97 | 1.98 |
| 50 | 3.55 | 3.54 | 0.01 | 0.05 | 3.54 | 2.01 | 1.96 | 1.97 |
| 100 | 3.56 | 3.55 | 0.01 | 0.02 | 3.58 | 2.00 | 1.95 | 1.96 |
| 500 | 3.57 | 3.59 | 0.02 | 0.27 | 4.25 | 1.96 | 1.78 | 1.79 |
| 750 | 3.58 | 3.59 | 0.01 | 0.31 | 4.88 | 1.94 | 1.63 | 1.63 |
| 800 | 3.59 | 3.59 | 0.00 | 0.40 | 5.02 | 1.93 | 1.60 | 1.60 |
| 875 | 3.60 | 3.59 | 0.01 | 0.42 | 5.24 | 1.93 | 1.55 | 1.55 |
| 900 | 3.59 | 3.59 | 0.00 | 0.45 | 5.32 | 1.93 | 1.54 | 1.54 |
| 1000 | 3.60 | 3.59 | 0.01 | 0.57 | 5.63 | 1.92 | 1.49 | 1.48 |
| 1100 | 3.60 | 3.60 | 0.00 | 0.65 | 5.96 | 1.92 | 1.44 | 1.43 |
| 1125 | 3.60 | 3.60 | 0.00 | 0.68 | 6.04 | 1.92 | 1.42 | 1.42 |
| 1175 | 3.60 | 3.60 | 0.00 | 0.71 | 6.20 | 1.91 | 1.40 | 1.40 |
| 1200 | 3.60 | 3.60 | 0.00 | 0.74 | 6.29 | 1.91 | 1.39 | 1.39 |
| 1400 | 3.61 | 3.60 | 0.01 | 0.85 | 6.98 | 1.90 | 1.30 | 1.30 |
| 1600 | 3.61 | 3.59 | 0.02 | 0.97 | 7.72 | 1.87 | 1.23 | 1.23 |
| 1700 | 3.61 | 3.59 | 0.02 | 1.03 | 8.11 | 1.86 | 1.20 | 1.20 |
| 1800 | 3.61 | 3.58 | 0.03 | 1.10 | 8.52 | 1.84 | 1.17 | 1.17 |
| 1900 | 3.60 | 3.57 | 0.03 | 1.16 | 8.93 | 1.82 | 1.15 | 1.15 |
| 2000 | 3.59 | 3.55 | 0.04 | 1.28 | 9.38 | 1.79 | 1.14 | 1.14 |
| 2050 | 3.59 | 3.55 | 0.04 | 1.31 | 9.61 | 1.78 | 1.13 | 1.14 |
| 2100 | 3.58 | 3.54 | 0.04 | 1.31 | 9.85 | 1.77 | 1.13 | 1.13 |
| 2150 | 3.57 | 3.53 | 0.04 | 1.37 | 10.10 | 1.75 | 1.13 | 1.13 |
| 2200 | 3.57 | 3.53 | 0.04 | 1.38 | 10.36 | 1.74 | 1.12 | 1.13 |
| 2225 | 3.56 | 3.53 | 0.03 | 1.42 | 10.50 | 1.73 | 1.12 | 1.13 |
| 2250 | 3.56 | 3.52 | 0.04 | 1.45 | 10.63 | 1.72 | 1.12 | 1.13 |
| 2275 | 3.56 | 3.52 | 0.04 | 1.46 | 10.77 | 1.71 | 1.12 | 1.13 |
| 2300 | 3.55 | 3.51 | 0.04 | 1.48 | 10.92 | 1.70 | 1.12 | 1.13 |
| 2350 | 3.54 | 3.50 | 0.04 | 1.52 | 11.21 | 1.68 | 1.12 | 1.13 |
| 2400 | 3.53 | 3.49 | 0.04 | 1.56 | 11.53 | 1.66 | 1.13 | 1.13 |
| 2450 | 3.52 | 3.48 | 0.04 | 1.60 | 11.86 | 1.64 | 1.13 | 1.13 |
| 2500 | 3.51 | 3.47 | 0.04 | 1.65 | 12.20 | 1.61 | 1.13 | 1.14 |
| 2550 | 3.50 | 3.45 | 0.05 | 1.66 | 12.57 | 1.59 | 1.13 | 1.14 |
| 2600 | 3.49 | 3.44 | 0.05 | 1.72 | 12.94 | 1.57 | 1.13 | 1.14 |
| 2650 | 3.48 | 3.43 | 0.05 | 1.76 | 13.35 | 1.54 | 1.13 | 1.14 |
| 2700 | 3.47 | 3.41 | 0.06 | 1.77 | 13.77 | 1.51 | 1.13 | 1.14 |
| 2750 | 3.45 | 3.40 | 0.05 | 1.84 | 14.23 | 1.48 | 1.13 | 1.14 |
| 2800 | 3.45 | 3.38 | 0.07 | 1.89 | 14.73 | 1.45 | 1.13 | 1.13 |
| 2825 | 3.44 | 3.38 | 0.06 | 1.88 | 14.98 | 1.44 | 1.12 | 1.13 |
| 2850 | 3.43 | 3.37 | 0.06 | 1.91 | 15.24 | 1.42 | 1.12 | 1.13 |
| 2900 | 3.42 | 3.35 | 0.07 | 1.96 | 15.80 | 1.39 | 1.12 | 1.13 |
| 2950 | 3.41 | 3.34 | 0.07 | 1.99 | 16.45 | 1.36 | 1.11 | 1.12 |
| 3000 | 3.40 | 3.33 | 0.07 | 2.03 | 17.09 | 1.33 | 1.11 | 1.12 |
| 3100 | 3.38 | 3.30 | 0.08 | 2.10 | 18.67 | 1.27 | 1.10 | 1.11 |
| 3200 | 3.37 | 3.28 | 0.09 | 2.18 | 20.61 | 1.21 | 1.09 | 1.10 |
| 3300 | 3.36 | 3.27 | 0.09 | 2.22 | 23.29 | 1.15 | 1.09 | 1.08 |
| 3400 | 3.36 | 3.27 | 0.09 | 2.28 | 27.13 | 1.12 | 1.10 | 1.08 |
| 3500 | 3.38 | 3.28 | 0.10 | 2.36 | 34.73 | 1.14 | 1.12 | 1.09 |
| 3600 | 3.42 | 3.31 | 0.11 | 2.43 | 42.16 | 1.20 | 1.15 | 1.10 |
| 3700 | 3.47 | 3.35 | 0.12 | 2.50 | 29.68 | 1.29 | 1.18 | 1.14 |
| 3800 | 3.53 | 3.41 | 0.12 | 2.56 | 24.76 | 1.41 | 1.22 | 1.18 |
| 3900 | 3.62 | 3.49 | 0.12 | 2.64 | 21.68 | 1.54 | 1.27 | 1.24 |
| 4000 | 3.74 | 3.60 | 0.13 | 2.71 | 19.39 | 1.70 | 1.34 | 1.30 |
| 4250 | 4.14 | 3.98 | 0.16 | 2.92 | 15.77 | 2.19 | 1.52 | 1.48 |
| 4500 | 4.68 | 4.50 | 0.19 | 3.08 | 13.57 | 2.86 | 1.74 | 1.70 |

¹ Total Loss = Insertion Loss+ 3dB Splitter Loss



2 Way-0° Power Splitter/Combiner

SCN-2-35

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0dBm @Temperature = -55°C

| FREQ. (MHz) | TOTAL LOSS ¹ (dB) | | AMP. UNBAL. (dB) | PHASE UNBAL. (deg.) | ISOLATION (dB) | VSWR (:1) | | |
|----------------|---------------------------------|------|------------------------|---------------------------|-------------------|--------------|------|------|
| | S-1 | S-2 | | | | S | 1 | 2 |
| 10 | 3.54 | 3.53 | 0.01 | 0.10 | 3.54 | 2.01 | 1.97 | 1.99 |
| 50 | 3.52 | 3.53 | 0.01 | 0.15 | 3.50 | 2.02 | 1.96 | 1.98 |
| 100 | 3.54 | 3.51 | 0.02 | 0.27 | 3.56 | 2.00 | 1.97 | 1.96 |
| 500 | 3.49 | 3.53 | 0.04 | 0.11 | 4.17 | 1.97 | 1.80 | 1.82 |
| 750 | 3.49 | 3.49 | 0.00 | 0.47 | 4.79 | 1.94 | 1.66 | 1.65 |
| 800 | 3.49 | 3.49 | 0.00 | 0.35 | 4.93 | 1.94 | 1.63 | 1.62 |
| 875 | 3.49 | 3.49 | 0.00 | 0.40 | 5.13 | 1.93 | 1.58 | 1.57 |
| 900 | 3.48 | 3.48 | 0.00 | 0.38 | 5.21 | 1.93 | 1.57 | 1.56 |
| 1000 | 3.48 | 3.49 | 0.01 | 0.22 | 5.51 | 1.93 | 1.51 | 1.51 |
| 1100 | 3.47 | 3.48 | 0.01 | 0.39 | 5.83 | 1.92 | 1.46 | 1.46 |
| 1125 | 3.47 | 3.48 | 0.01 | 0.35 | 5.91 | 1.91 | 1.45 | 1.44 |
| 1175 | 3.47 | 3.48 | 0.01 | 0.29 | 6.07 | 1.91 | 1.43 | 1.42 |
| 1200 | 3.46 | 3.48 | 0.02 | 0.27 | 6.14 | 1.92 | 1.41 | 1.41 |
| 1400 | 3.45 | 3.49 | 0.04 | 0.38 | 6.78 | 1.91 | 1.32 | 1.33 |
| 1600 | 3.44 | 3.48 | 0.04 | 0.52 | 7.47 | 1.90 | 1.23 | 1.26 |
| 1700 | 3.44 | 3.46 | 0.02 | 0.61 | 7.84 | 1.89 | 1.21 | 1.22 |
| 1800 | 3.43 | 3.45 | 0.02 | 0.60 | 8.25 | 1.87 | 1.19 | 1.21 |
| 1900 | 3.44 | 3.45 | 0.01 | 0.69 | 8.62 | 1.87 | 1.16 | 1.18 |
| 2000 | 3.42 | 3.44 | 0.02 | 0.76 | 9.04 | 1.86 | 1.14 | 1.18 |
| 2050 | 3.43 | 3.44 | 0.01 | 0.77 | 9.25 | 1.85 | 1.14 | 1.17 |
| 2100 | 3.42 | 3.43 | 0.01 | 0.79 | 9.48 | 1.85 | 1.14 | 1.18 |
| 2150 | 3.41 | 3.43 | 0.02 | 0.87 | 9.73 | 1.83 | 1.14 | 1.18 |
| 2200 | 3.41 | 3.41 | 0.00 | 0.95 | 9.98 | 1.83 | 1.14 | 1.18 |
| 2225 | 3.42 | 3.41 | 0.01 | 0.92 | 10.10 | 1.82 | 1.14 | 1.18 |
| 2250 | 3.42 | 3.41 | 0.01 | 0.91 | 10.22 | 1.82 | 1.14 | 1.18 |
| 2275 | 3.42 | 3.41 | 0.01 | 0.92 | 10.36 | 1.82 | 1.14 | 1.18 |
| 2300 | 3.41 | 3.40 | 0.01 | 0.93 | 10.49 | 1.81 | 1.14 | 1.18 |
| 2350 | 3.41 | 3.39 | 0.02 | 0.94 | 10.76 | 1.80 | 1.14 | 1.19 |
| 2400 | 3.40 | 3.38 | 0.02 | 0.92 | 11.07 | 1.79 | 1.15 | 1.20 |
| 2450 | 3.39 | 3.37 | 0.02 | 0.90 | 11.40 | 1.77 | 1.15 | 1.20 |
| 2500 | 3.37 | 3.35 | 0.02 | 0.92 | 11.75 | 1.74 | 1.15 | 1.20 |
| 2550 | 3.36 | 3.33 | 0.03 | 0.96 | 12.11 | 1.71 | 1.15 | 1.20 |
| 2600 | 3.36 | 3.32 | 0.04 | 0.92 | 12.47 | 1.70 | 1.16 | 1.21 |
| 2650 | 3.35 | 3.31 | 0.04 | 0.90 | 12.87 | 1.68 | 1.16 | 1.21 |
| 2700 | 3.33 | 3.28 | 0.05 | 0.87 | 13.29 | 1.65 | 1.16 | 1.20 |
| 2750 | 3.32 | 3.27 | 0.05 | 0.82 | 13.73 | 1.62 | 1.16 | 1.20 |
| 2800 | 3.31 | 3.26 | 0.05 | 0.81 | 14.22 | 1.60 | 1.16 | 1.20 |
| 2825 | 3.29 | 3.25 | 0.04 | 0.84 | 14.49 | 1.58 | 1.15 | 1.20 |
| 2850 | 3.28 | 3.23 | 0.05 | 0.82 | 14.76 | 1.57 | 1.15 | 1.19 |
| 2900 | 3.26 | 3.20 | 0.05 | 0.82 | 15.36 | 1.52 | 1.14 | 1.18 |
| 2950 | 3.24 | 3.18 | 0.06 | 0.84 | 16.03 | 1.48 | 1.13 | 1.17 |
| 3000 | 3.21 | 3.16 | 0.05 | 0.82 | 16.72 | 1.43 | 1.12 | 1.15 |
| 3100 | 3.18 | 3.11 | 0.07 | 0.84 | 18.35 | 1.34 | 1.09 | 1.12 |
| 3200 | 3.14 | 3.07 | 0.07 | 0.83 | 20.55 | 1.23 | 1.07 | 1.08 |
| 3300 | 3.11 | 3.04 | 0.07 | 0.78 | 23.23 | 1.14 | 1.07 | 1.03 |
| 3400 | 3.10 | 3.03 | 0.07 | 0.78 | 27.86 | 1.06 | 1.11 | 1.04 |
| 3500 | 3.11 | 3.04 | 0.07 | 0.80 | 36.98 | 1.11 | 1.16 | 1.10 |
| 3600 | 3.15 | 3.09 | 0.06 | 0.73 | 36.62 | 1.22 | 1.20 | 1.16 |
| 3700 | 3.22 | 3.15 | 0.07 | 0.78 | 27.73 | 1.36 | 1.25 | 1.24 |
| 3800 | 3.30 | 3.23 | 0.07 | 0.81 | 23.77 | 1.51 | 1.31 | 1.33 |
| 3900 | 3.41 | 3.35 | 0.07 | 0.84 | 20.86 | 1.69 | 1.37 | 1.42 |
| 4000 | 3.55 | 3.49 | 0.06 | 0.87 | 18.86 | 1.89 | 1.44 | 1.52 |
| 4250 | 3.98 | 3.89 | 0.09 | 0.99 | 15.59 | 2.46 | 1.61 | 1.74 |
| 4500 | 4.44 | 4.32 | 0.12 | 1.17 | 13.52 | 3.09 | 1.75 | 1.91 |

¹ Total Loss = Insertion Loss+ 3dB Splitter Loss



2 Way-0° Power Splitter/Combiner

SCN-2-35

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0dBm @Temperature = +100°C

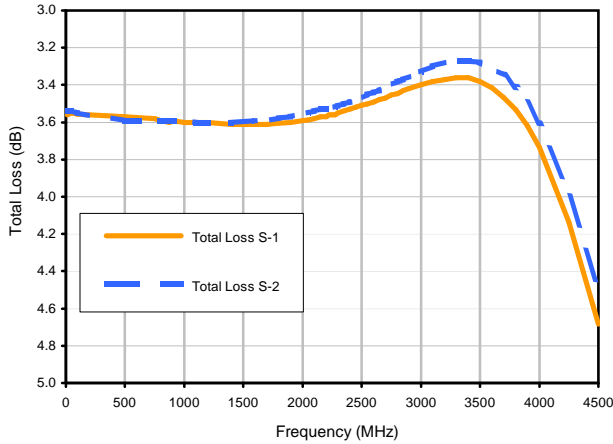
| FREQ. (MHz) | TOTAL LOSS ¹ (dB) | | AMP. UNBAL. (dB) | PHASE UNBAL. (deg.) | ISOLATION (dB) | VSWR (:1) | | |
|----------------|---------------------------------|------|------------------------|---------------------------|-------------------|--------------|------|------|
| | S-1 | S-2 | | | | S | 1 | 2 |
| 10 | 3.57 | 3.55 | 0.02 | 0.13 | 3.58 | 2.00 | 1.96 | 1.97 |
| 50 | 3.56 | 3.54 | 0.02 | 0.04 | 3.57 | 2.00 | 1.96 | 1.96 |
| 100 | 3.56 | 3.58 | 0.02 | 0.26 | 3.59 | 2.01 | 1.93 | 1.96 |
| 500 | 3.61 | 3.63 | 0.02 | 0.62 | 4.26 | 1.97 | 1.76 | 1.77 |
| 750 | 3.64 | 3.65 | 0.01 | 0.90 | 4.90 | 1.95 | 1.61 | 1.61 |
| 800 | 3.65 | 3.64 | 0.01 | 1.04 | 5.05 | 1.95 | 1.58 | 1.57 |
| 875 | 3.65 | 3.65 | 0.00 | 1.17 | 5.28 | 1.95 | 1.53 | 1.53 |
| 900 | 3.65 | 3.65 | 0.00 | 1.24 | 5.36 | 1.94 | 1.52 | 1.51 |
| 1000 | 3.66 | 3.65 | 0.01 | 1.40 | 5.69 | 1.93 | 1.46 | 1.46 |
| 1100 | 3.67 | 3.66 | 0.01 | 1.60 | 6.03 | 1.93 | 1.41 | 1.41 |
| 1125 | 3.68 | 3.67 | 0.01 | 1.65 | 6.11 | 1.93 | 1.40 | 1.39 |
| 1175 | 3.69 | 3.67 | 0.02 | 1.68 | 6.28 | 1.93 | 1.38 | 1.37 |
| 1200 | 3.69 | 3.67 | 0.02 | 1.74 | 6.37 | 1.93 | 1.36 | 1.35 |
| 1400 | 3.70 | 3.67 | 0.03 | 2.08 | 7.11 | 1.90 | 1.29 | 1.27 |
| 1600 | 3.70 | 3.65 | 0.05 | 2.42 | 7.90 | 1.87 | 1.22 | 1.19 |
| 1700 | 3.71 | 3.65 | 0.06 | 2.64 | 8.30 | 1.85 | 1.19 | 1.16 |
| 1800 | 3.70 | 3.63 | 0.07 | 2.84 | 8.74 | 1.82 | 1.16 | 1.13 |
| 1900 | 3.69 | 3.61 | 0.08 | 3.02 | 9.19 | 1.78 | 1.14 | 1.11 |
| 2000 | 3.66 | 3.59 | 0.07 | 3.27 | 9.68 | 1.74 | 1.13 | 1.09 |
| 2050 | 3.66 | 3.58 | 0.08 | 3.36 | 9.93 | 1.71 | 1.12 | 1.08 |
| 2100 | 3.65 | 3.57 | 0.08 | 3.46 | 10.19 | 1.69 | 1.11 | 1.08 |
| 2150 | 3.64 | 3.56 | 0.08 | 3.60 | 10.45 | 1.67 | 1.11 | 1.07 |
| 2200 | 3.63 | 3.56 | 0.07 | 3.67 | 10.73 | 1.65 | 1.10 | 1.07 |
| 2225 | 3.62 | 3.55 | 0.07 | 3.74 | 10.88 | 1.63 | 1.10 | 1.07 |
| 2250 | 3.61 | 3.55 | 0.06 | 3.80 | 11.03 | 1.62 | 1.10 | 1.07 |
| 2275 | 3.61 | 3.54 | 0.07 | 3.83 | 11.18 | 1.60 | 1.10 | 1.06 |
| 2300 | 3.60 | 3.54 | 0.06 | 3.90 | 11.34 | 1.59 | 1.10 | 1.06 |
| 2350 | 3.59 | 3.53 | 0.06 | 3.99 | 11.65 | 1.56 | 1.10 | 1.06 |
| 2400 | 3.57 | 3.51 | 0.06 | 4.09 | 11.99 | 1.53 | 1.10 | 1.06 |
| 2450 | 3.56 | 3.50 | 0.06 | 4.18 | 12.34 | 1.50 | 1.10 | 1.06 |
| 2500 | 3.55 | 3.49 | 0.06 | 4.28 | 12.70 | 1.47 | 1.10 | 1.07 |
| 2550 | 3.53 | 3.48 | 0.05 | 4.34 | 13.10 | 1.44 | 1.10 | 1.07 |
| 2600 | 3.52 | 3.47 | 0.05 | 4.43 | 13.49 | 1.41 | 1.10 | 1.07 |
| 2650 | 3.51 | 3.46 | 0.05 | 4.49 | 13.90 | 1.38 | 1.10 | 1.07 |
| 2700 | 3.50 | 3.45 | 0.05 | 4.57 | 14.33 | 1.35 | 1.10 | 1.08 |
| 2750 | 3.49 | 3.44 | 0.05 | 4.64 | 14.80 | 1.31 | 1.10 | 1.09 |
| 2800 | 3.49 | 3.44 | 0.05 | 4.71 | 15.31 | 1.28 | 1.10 | 1.09 |
| 2825 | 3.47 | 3.42 | 0.05 | 4.71 | 15.56 | 1.27 | 1.10 | 1.10 |
| 2850 | 3.47 | 3.42 | 0.05 | 4.76 | 15.81 | 1.25 | 1.10 | 1.10 |
| 2900 | 3.46 | 3.42 | 0.04 | 4.84 | 16.37 | 1.23 | 1.10 | 1.11 |
| 2950 | 3.46 | 3.41 | 0.05 | 4.87 | 17.01 | 1.20 | 1.10 | 1.12 |
| 3000 | 3.46 | 3.41 | 0.05 | 4.95 | 17.63 | 1.18 | 1.11 | 1.13 |
| 3100 | 3.45 | 3.40 | 0.05 | 5.05 | 19.14 | 1.14 | 1.11 | 1.14 |
| 3200 | 3.46 | 3.40 | 0.06 | 5.16 | 20.92 | 1.11 | 1.12 | 1.16 |
| 3300 | 3.48 | 3.42 | 0.06 | 5.23 | 23.36 | 1.12 | 1.13 | 1.19 |
| 3400 | 3.50 | 3.43 | 0.07 | 5.35 | 26.74 | 1.15 | 1.14 | 1.20 |
| 3500 | 3.53 | 3.45 | 0.08 | 5.45 | 32.68 | 1.20 | 1.15 | 1.22 |
| 3600 | 3.58 | 3.49 | 0.09 | 5.57 | 44.44 | 1.26 | 1.16 | 1.22 |
| 3700 | 3.62 | 3.52 | 0.10 | 5.70 | 32.84 | 1.33 | 1.17 | 1.23 |
| 3800 | 3.68 | 3.56 | 0.12 | 5.83 | 26.69 | 1.40 | 1.19 | 1.23 |
| 3900 | 3.74 | 3.62 | 0.12 | 6.00 | 23.18 | 1.48 | 1.22 | 1.22 |
| 4000 | 3.83 | 3.69 | 0.14 | 6.15 | 20.55 | 1.58 | 1.25 | 1.22 |
| 4250 | 4.10 | 3.94 | 0.16 | 6.75 | 16.41 | 1.89 | 1.40 | 1.22 |
| 4500 | 4.52 | 4.35 | 0.18 | 7.32 | 13.81 | 2.37 | 1.60 | 1.34 |

¹ Total Loss = Insertion Loss+ 3dB Splitter Loss

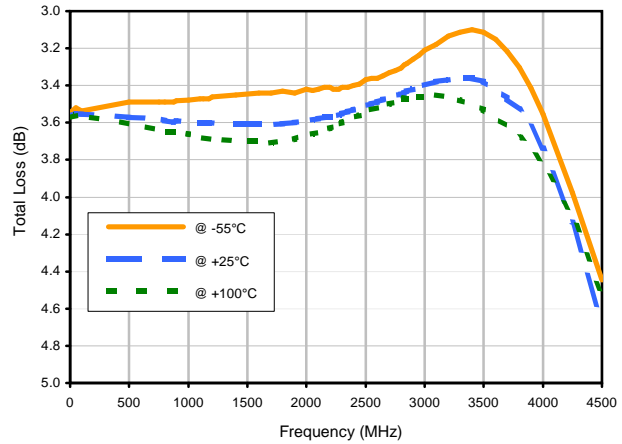


Typical Performance Curves

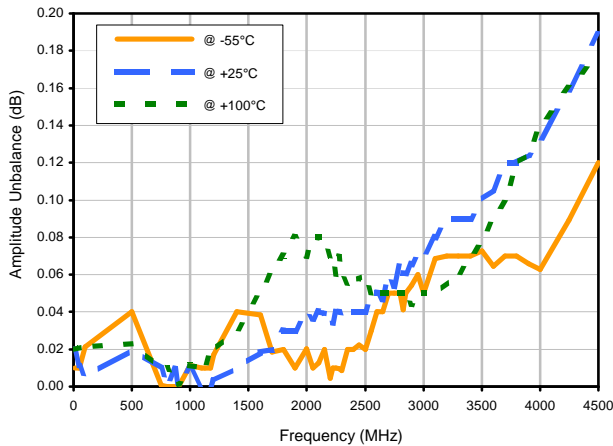
Total Loss



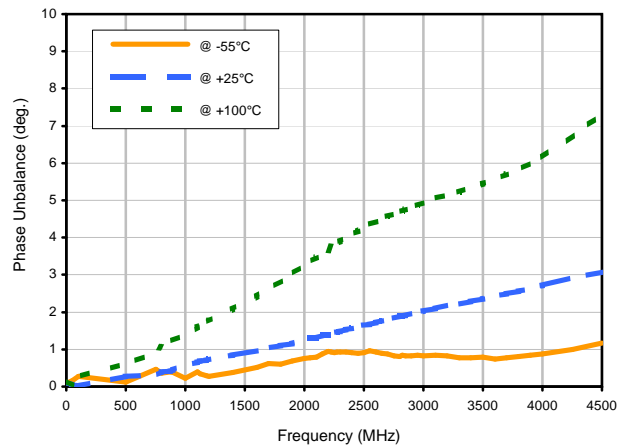
Total Loss S-1 vs. TEMPERATURE



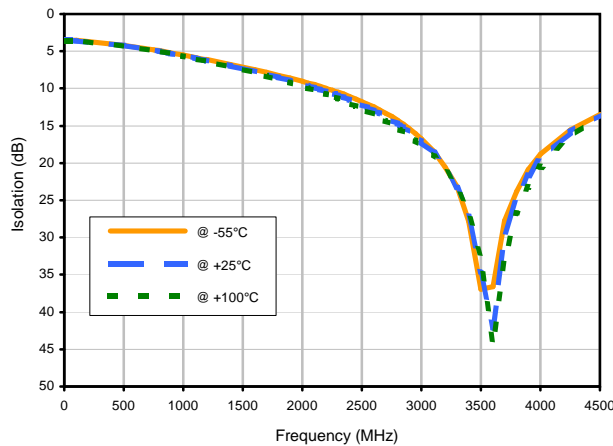
Amplitude Unbalance vs. TEMPERATURE



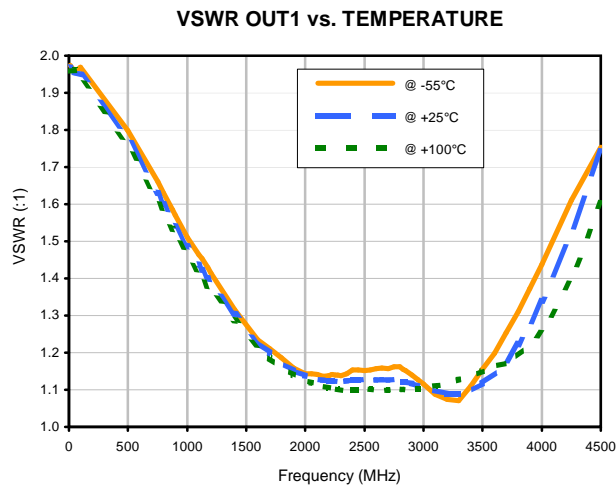
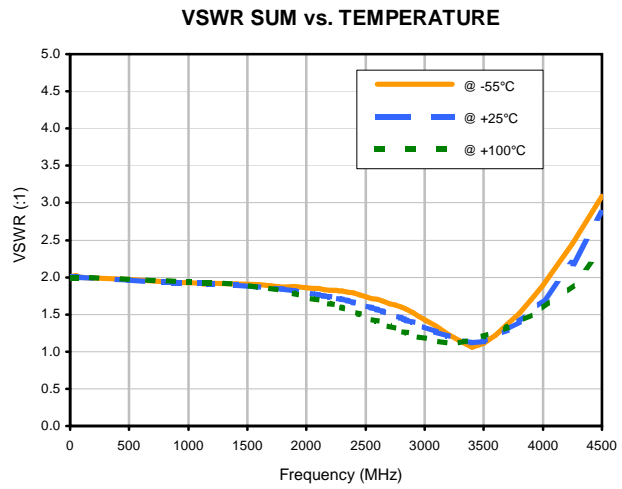
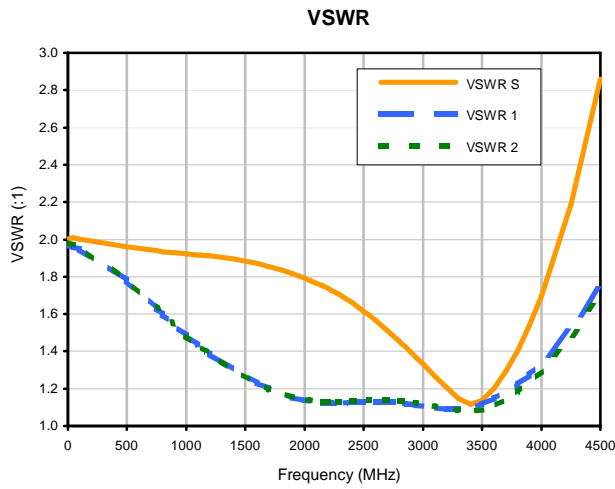
Phase Unbalance vs. TEMPERATURE



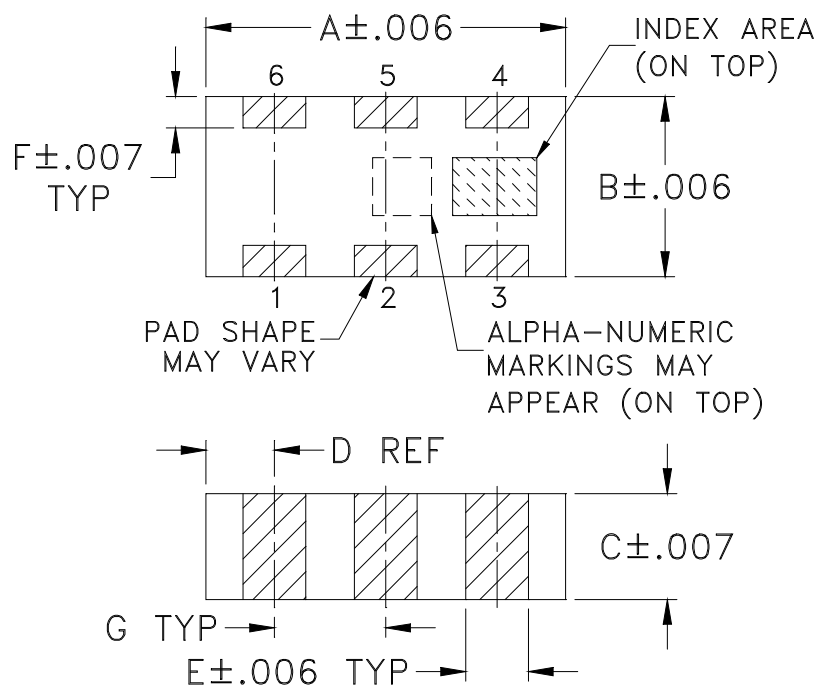
Isolation 1-2 vs. TEMPERATURE



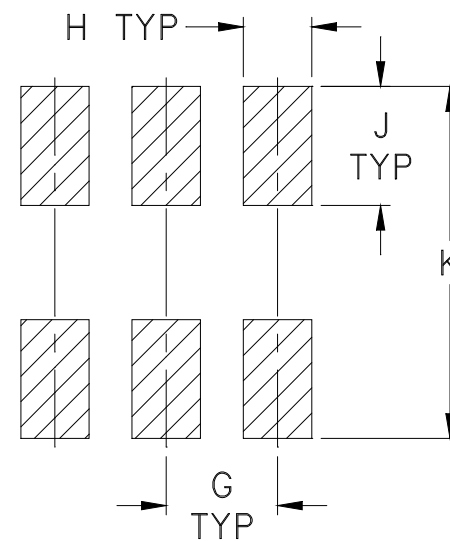
Typical Performance Curves



Outline Dimensions



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 | WT. GRAM |
|----------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----|----|----|----|----------|
| FV1206-1 | .126 (3.20) | .063 (1.60) | .035 (0.89) | .024 (0.61) | .022 (0.56) | .011 (0.28) | .039 (0.99) | .024 (0.61) | .042 (1.07) | .123 (3.12) | -- | -- | -- | -- | .020 |

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

Notes:

- Open style, ceramic base.
- 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.

Tape & Reel Packaging

TR-F75

DEVICE ORIENTATION IN T&R

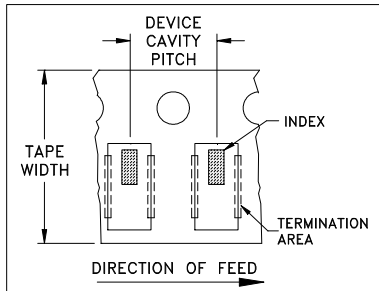


ILLUSTRATION 1

| Applicable Case Styles |
|------------------------|
| FV1206-1 FV1206-3 |

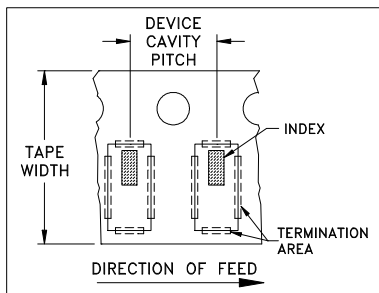


ILLUSTRATION 2

| Applicable Case Styles |
|---|
| FV1206-4 FV1206-5 FV1206-6 FV1206-7 FV1206-9 JC0603C-1 |

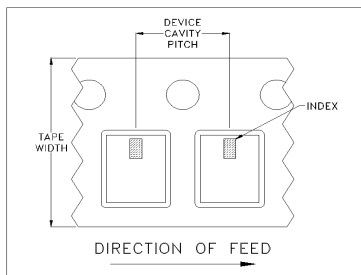


ILLUSTRATION 3

| Applicable Case Styles |
|--|
| FV1206-12 NL1008C-6 NL1008C-7 NL1008C-9 NL1008C-10 |

| Tape Width, mm | Device Cavity Pitch, mm | Reel Size, inches | Devices per Reel | |
|----------------|-------------------------|-------------------|-------------------------------------|------|
| 8 | 4 | 7 | Small quantity standards (see note) | 20 |
| | | | | 50 |
| | | | | 100 |
| | | | | 200 |
| | | | | 500 |
| | | | 1000 | |
| | | | Standard | 3000 |

Note: Please consult individual model data sheet to determine device per reel availability.

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

Mini-Circuits ISO 9001 & ISO 14001 Certified

Mini-Circuits[®]

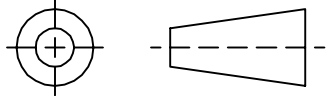
INTERNET <http://www.minicircuits.com>

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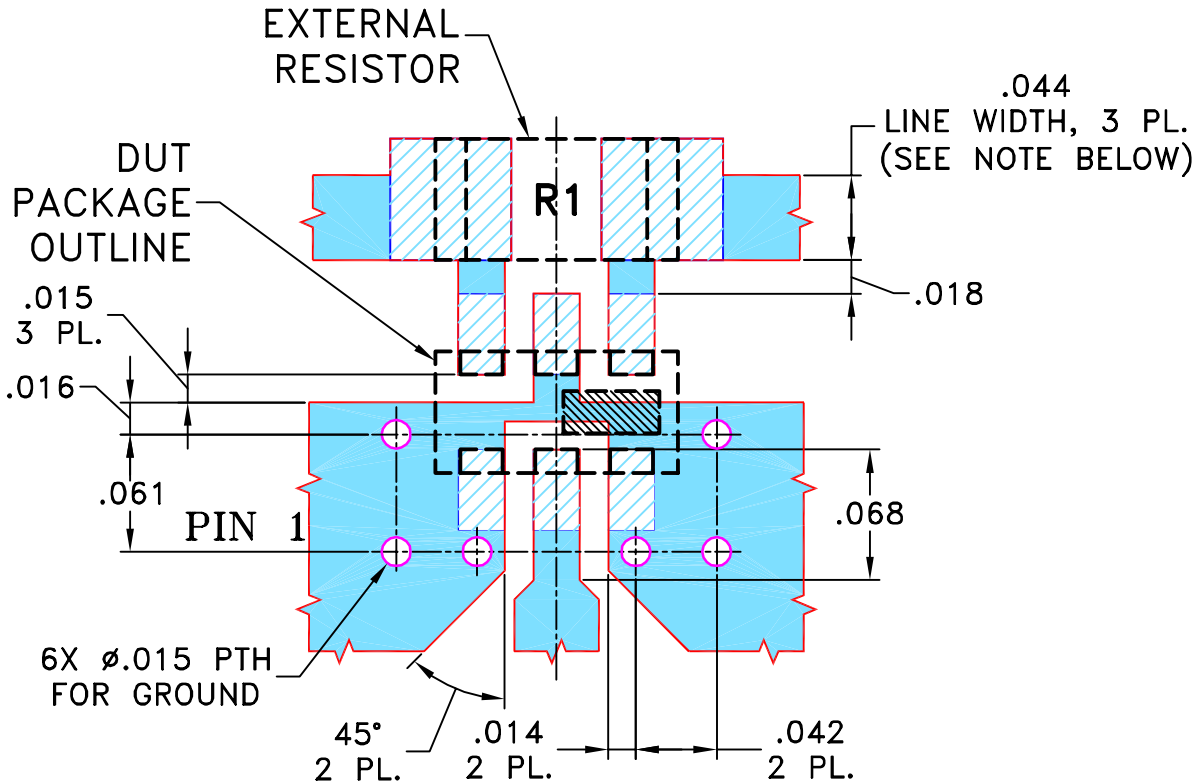
THIRD ANGLE PROJECTION



REVISIONS

| REV | ECN No. | DESCRIPTION | DATE | DR | AUTH |
|-----|---------|------------------------------------|----------|----|------|
| A | M86650 | UPDATED NOTE 2 | 04/18/03 | GF | DJ |
| B | M86880 | CHANGED APPEARANCE | 05/05/03 | IL | ABD |
| C | M91639 | REMOVED NOTE 2, UPDATED DIMENSIONS | 04/14/04 | AV | DJ |
| D | M102713 | ADDED "...WITH SMOBC" | 01/16/06 | GF | IL |

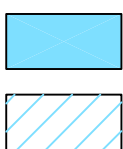
SUGGESTED MOUNTING CONFIGURATION
FOR FV1206-1 CASE STYLE, "pa" PIN CONNECTION.



RESISTOR R1: 100 Ohm, 1206 SIZE

NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; 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.



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 | 04/11/03 |
| TOLERANCES ON: | CHECKED IL | 04/15/03 |
| 2 PL DECIMALS ± | APPROVED ABD | 04/15/03 |
| 3 PL DECIMALS ± .005 | | |
| ANGLES ± | | |
| FRACTIONS ± | | |



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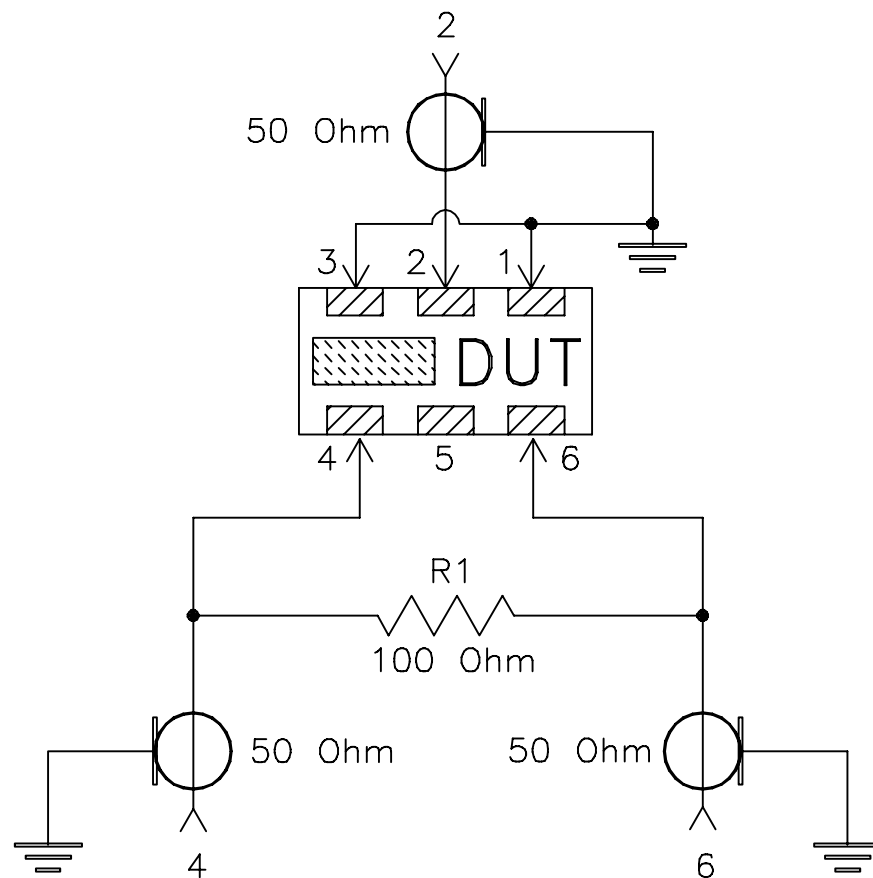
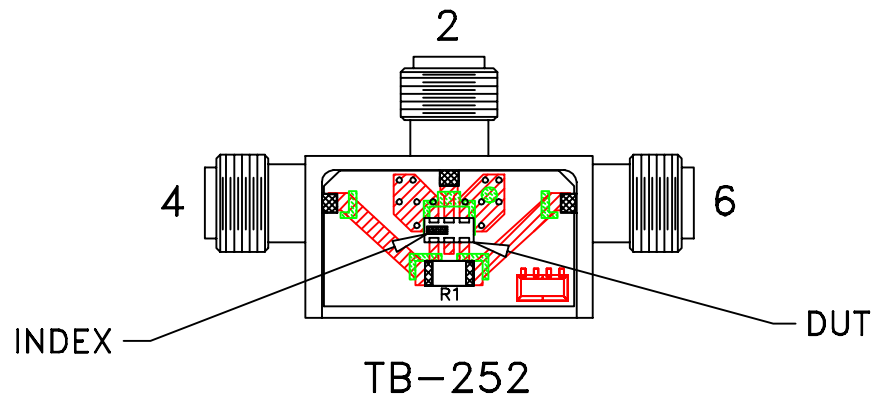
PL, pa, FV1206-1, SCN, TB-252

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| SIZE | CODE IDENT | DRAWING NO: | REV: |
|-------|------------|-------------|--------|
| A | 15542 | 98-PL-129 | D |
| FILE: | 98PL129 | SCALE: | 10:1 |
| | | SHEET: | 1 OF 1 |

Evaluation Board and Circuit


For Pin Connections refer to Data Sheet of the DUT



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent, Dielectric Constant=3.5, Thickness=.020 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 |