

Power Splitter/Combiner

ADQ-180

2 Way-90° 50Ω 120 to 180 MHz



CASE STYLE: CJ725

Maximum Ratings

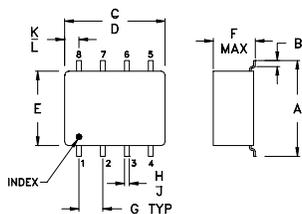
| | |
|-----------------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Power Input (as a splitter) | 1W max. |

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

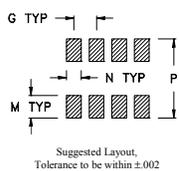
Pin Connections

| | |
|----------------------|---------|
| SUM PORT | 1 |
| PORT 1 (+90°) | 8 |
| PORT 2 (0°) | 4 |
| GROUND | 2,3,6,7 |
| 50 OHM TERM EXTERNAL | 5 |

Outline Drawing



PCB Land Pattern



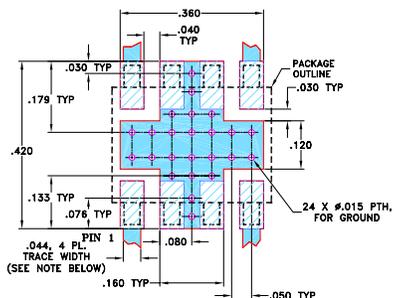
Suggested Layout, Tolerance to be within ±.002

Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G |
|-------|------|------|-------|------|------|------|
| .397 | .032 | .385 | .435 | .310 | .215 | .100 |
| 10.08 | 0.81 | 9.78 | 11.05 | 7.87 | 5.46 | 2.54 |

| H | J | K | L | M | N | P | wt |
|------|------|------|------|------|------|-------|-------|
| .015 | .025 | .035 | .075 | .120 | .060 | .420 | grams |
| 0.38 | 0.64 | 0.89 | 1.91 | 3.05 | 1.52 | 10.67 | 0.45 |

Demo Board MCL P/N: TB-83 Suggested PCB Layout (PL-063)



- 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

- A. 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.
 B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
 C. The parts covered by this specification document are subject to Mini-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp

Features

- excellent amplitude unbalance, 0.6 dB typ. and phase unbalance, 0.7 deg. typ.
- very low insertion loss, 0.2 dB typ.
- small surface mount package
- protected under U.S. Patent 6,133,525

Applications

- VHF TV

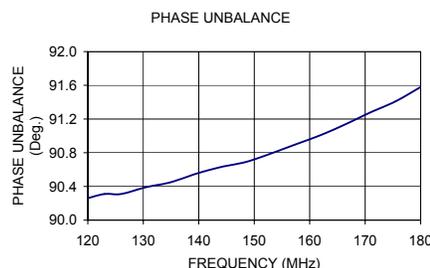
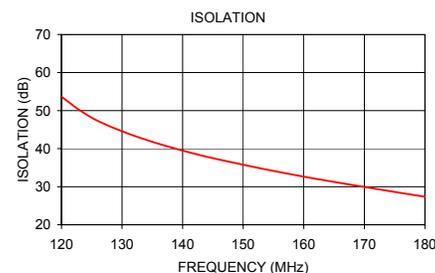
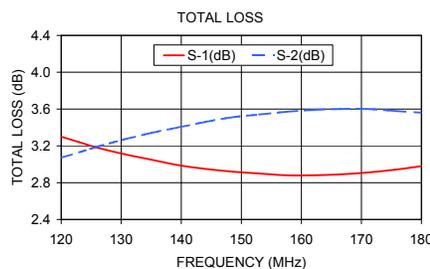
Electrical Specifications

| FREQ. RANGE (MHz) | ISOLATION (dB) | | INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB | | PHASE UNBALANCE (Degrees) | AMPLITUDE UNBALANCE (dB) |
|--------------------------------|----------------|------|---|------|---------------------------|--------------------------|
| | Typ. | Min. | Typ. | Max. | | |
| f _L -f _U | | | | | Max. | Max. |
| 120-180 | 35 | 20 | 0.2 | 0.7 | 6 | 1.5 |

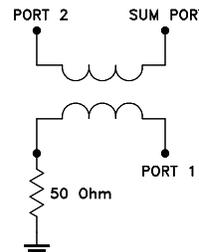
Typical Performance Data

| Frequency (MHz) | Total Loss ¹ (dB) | | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|-----------------|------------------------------|------|--------------------------|----------------|------------------------|--------|--------|--------|
| | S-1 | S-2 | | | | | | |
| 120.00 | 3.30 | 3.07 | 0.23 | 53.66 | 90.26 | 1.04 | 1.03 | 1.05 |
| 123.00 | 3.24 | 3.13 | 0.11 | 50.12 | 90.31 | 1.04 | 1.03 | 1.05 |
| 126.00 | 3.18 | 3.19 | 0.01 | 47.30 | 90.31 | 1.04 | 1.03 | 1.05 |
| 130.50 | 3.11 | 3.27 | 0.16 | 44.27 | 90.39 | 1.03 | 1.03 | 1.05 |
| 135.00 | 3.05 | 3.34 | 0.30 | 41.81 | 90.45 | 1.03 | 1.03 | 1.06 |
| 139.50 | 2.99 | 3.40 | 0.41 | 39.71 | 90.55 | 1.03 | 1.03 | 1.06 |
| 144.00 | 2.95 | 3.46 | 0.51 | 37.87 | 90.63 | 1.03 | 1.03 | 1.06 |
| 148.50 | 2.92 | 3.51 | 0.59 | 36.28 | 90.69 | 1.03 | 1.03 | 1.06 |
| 153.00 | 2.90 | 3.54 | 0.65 | 34.78 | 90.79 | 1.03 | 1.03 | 1.06 |
| 157.50 | 2.88 | 3.57 | 0.69 | 33.39 | 90.90 | 1.03 | 1.03 | 1.06 |
| 162.00 | 2.88 | 3.59 | 0.71 | 32.08 | 91.01 | 1.04 | 1.04 | 1.07 |
| 166.50 | 2.89 | 3.60 | 0.71 | 30.85 | 91.14 | 1.04 | 1.04 | 1.07 |
| 171.00 | 2.91 | 3.60 | 0.69 | 29.66 | 91.28 | 1.05 | 1.05 | 1.08 |
| 175.50 | 2.94 | 3.58 | 0.64 | 28.50 | 91.41 | 1.05 | 1.06 | 1.08 |
| 180.00 | 2.98 | 3.56 | 0.57 | 27.36 | 91.58 | 1.06 | 1.06 | 1.09 |

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



electrical schematic



2 Way-90° Power Splitter/Combiner

ADQ-180

Typical Performance Data

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

| FREQ. (MHz) | TOTAL LOSS ¹ (dB) | | | AMP. UNBAL. (dB) | PHASE UNBAL. From 90° (deg.) | ISOLATION (dB) 1-2 | VSWR (:1) | | |
|----------------|---------------------------------|------|------|------------------------|------------------------------------|--------------------------|--------------|------|------|
| | S-1 | S-2 | AVG. | | | | S | 1 | 2 |
| 60 | 6.36 | 1.29 | 3.82 | 5.07 | 0.41 | 40.55 | 1.02 | 1.03 | 1.03 |
| 65 | 5.89 | 1.45 | 3.67 | 4.45 | 0.39 | 39.98 | 1.02 | 1.03 | 1.03 |
| 70 | 5.49 | 1.61 | 3.55 | 3.88 | 0.38 | 39.50 | 1.02 | 1.03 | 1.03 |
| 75 | 5.13 | 1.77 | 3.45 | 3.36 | 0.34 | 39.15 | 1.02 | 1.02 | 1.03 |
| 80 | 4.81 | 1.93 | 3.37 | 2.88 | 0.32 | 38.79 | 1.02 | 1.02 | 1.03 |
| 85 | 4.53 | 2.08 | 3.31 | 2.45 | 0.30 | 38.48 | 1.02 | 1.02 | 1.03 |
| 90 | 4.29 | 2.23 | 3.26 | 2.05 | 0.28 | 38.26 | 1.02 | 1.02 | 1.03 |
| 95 | 4.07 | 2.38 | 3.22 | 1.69 | 0.23 | 38.08 | 1.02 | 1.02 | 1.03 |
| 100 | 3.87 | 2.52 | 3.20 | 1.35 | 0.22 | 37.88 | 1.02 | 1.02 | 1.02 |
| 105 | 3.70 | 2.66 | 3.18 | 1.04 | 0.19 | 37.65 | 1.02 | 1.02 | 1.02 |
| 110 | 3.55 | 2.79 | 3.17 | 0.76 | 0.15 | 37.46 | 1.02 | 1.02 | 1.02 |
| 115 | 3.42 | 2.91 | 3.16 | 0.51 | 0.14 | 37.34 | 1.02 | 1.02 | 1.02 |
| 120 | 3.30 | 3.02 | 3.16 | 0.28 | 0.11 | 37.20 | 1.02 | 1.02 | 1.02 |
| 125 | 3.20 | 3.12 | 3.16 | 0.08 | 0.07 | 37.10 | 1.02 | 1.02 | 1.02 |
| 130 | 3.11 | 3.22 | 3.16 | 0.11 | 0.04 | 37.10 | 1.02 | 1.02 | 1.02 |
| 135 | 3.03 | 3.31 | 3.17 | 0.27 | 0.00 | 37.15 | 1.02 | 1.02 | 1.02 |
| 140 | 2.97 | 3.39 | 3.18 | 0.42 | 0.04 | 37.21 | 1.02 | 1.02 | 1.02 |
| 145 | 2.92 | 3.45 | 3.18 | 0.53 | 0.09 | 37.24 | 1.02 | 1.02 | 1.02 |
| 150 | 2.87 | 3.51 | 3.19 | 0.64 | 0.13 | 37.15 | 1.02 | 1.02 | 1.01 |
| 155 | 2.84 | 3.56 | 3.20 | 0.71 | 0.16 | 37.04 | 1.02 | 1.03 | 1.01 |
| 160 | 2.82 | 3.59 | 3.21 | 0.77 | 0.18 | 36.84 | 1.02 | 1.03 | 1.01 |
| 165 | 2.81 | 3.62 | 3.21 | 0.81 | 0.26 | 36.64 | 1.02 | 1.03 | 1.01 |
| 170 | 2.81 | 3.63 | 3.22 | 0.82 | 0.28 | 36.31 | 1.02 | 1.03 | 1.01 |
| 175 | 2.82 | 3.64 | 3.23 | 0.82 | 0.32 | 35.92 | 1.03 | 1.04 | 1.02 |
| 180 | 2.84 | 3.63 | 3.23 | 0.79 | 0.37 | 35.44 | 1.03 | 1.04 | 1.02 |
| 185 | 2.87 | 3.61 | 3.24 | 0.73 | 0.45 | 34.76 | 1.03 | 1.05 | 1.02 |
| 190 | 2.92 | 3.57 | 3.24 | 0.65 | 0.52 | 33.96 | 1.04 | 1.05 | 1.02 |
| 195 | 2.98 | 3.52 | 3.25 | 0.54 | 0.59 | 33.04 | 1.04 | 1.06 | 1.03 |
| 200 | 3.05 | 3.45 | 3.25 | 0.40 | 0.68 | 32.00 | 1.05 | 1.07 | 1.03 |
| 205 | 3.15 | 3.38 | 3.26 | 0.23 | 0.75 | 30.85 | 1.06 | 1.08 | 1.04 |
| 210 | 3.26 | 3.29 | 3.27 | 0.03 | 0.91 | 29.67 | 1.07 | 1.09 | 1.05 |
| 215 | 3.40 | 3.19 | 3.29 | 0.21 | 1.04 | 28.45 | 1.08 | 1.11 | 1.06 |
| 220 | 3.57 | 3.07 | 3.32 | 0.50 | 1.19 | 27.19 | 1.10 | 1.12 | 1.07 |
| 225 | 3.77 | 2.94 | 3.35 | 0.83 | 1.38 | 25.92 | 1.11 | 1.14 | 1.09 |
| 230 | 4.01 | 2.80 | 3.40 | 1.21 | 1.62 | 24.62 | 1.13 | 1.17 | 1.11 |
| 235 | 4.30 | 2.64 | 3.47 | 1.65 | 1.94 | 23.32 | 1.16 | 1.19 | 1.13 |
| 240 | 4.65 | 2.48 | 3.56 | 2.17 | 2.34 | 22.00 | 1.19 | 1.22 | 1.16 |
| 245 | 5.08 | 2.31 | 3.69 | 2.77 | 2.91 | 20.69 | 1.22 | 1.26 | 1.19 |
| 250 | 5.62 | 2.14 | 3.88 | 3.48 | 3.67 | 19.39 | 1.26 | 1.31 | 1.23 |

¹Total Loss = Insertion Loss + 3dB Splitter Loss

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2 Way-90° Power Splitter/Combiner

ADQ-180

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0dBm @Temperature = -40°C

| FREQ. (MHz) | TOTAL LOSS ¹ (dB) | | | AMP. UNBAL. (dB) | PHASE UNBAL. From 90° (deg.) | ISOLATION (dB) | VSWR (:1) | | |
|----------------|---------------------------------|------|------|------------------------|------------------------------------|-------------------|--------------|------|------|
| | S-1 | S-2 | AVG. | | | | S | 1 | 2 |
| 60 | 6.43 | 1.22 | 3.82 | 5.21 | 0.01 | 36.96 | 1.05 | 1.04 | 1.07 |
| 65 | 5.96 | 1.38 | 3.67 | 4.58 | 0.07 | 36.45 | 1.06 | 1.04 | 1.07 |
| 70 | 5.54 | 1.54 | 3.54 | 4.01 | 0.10 | 36.04 | 1.06 | 1.04 | 1.07 |
| 75 | 5.18 | 1.69 | 3.44 | 3.49 | 0.13 | 35.76 | 1.06 | 1.04 | 1.07 |
| 80 | 4.86 | 1.85 | 3.35 | 3.01 | 0.15 | 35.53 | 1.06 | 1.04 | 1.07 |
| 85 | 4.57 | 2.00 | 3.29 | 2.57 | 0.22 | 35.40 | 1.06 | 1.04 | 1.06 |
| 90 | 4.32 | 2.15 | 3.23 | 2.18 | 0.26 | 35.34 | 1.06 | 1.04 | 1.06 |
| 95 | 4.10 | 2.29 | 3.19 | 1.81 | 0.31 | 35.40 | 1.05 | 1.04 | 1.05 |
| 100 | 3.90 | 2.43 | 3.16 | 1.47 | 0.34 | 35.49 | 1.05 | 1.04 | 1.05 |
| 105 | 3.72 | 2.56 | 3.14 | 1.16 | 0.40 | 35.63 | 1.04 | 1.04 | 1.04 |
| 110 | 3.56 | 2.69 | 3.13 | 0.87 | 0.45 | 35.88 | 1.04 | 1.04 | 1.04 |
| 115 | 3.43 | 2.81 | 3.12 | 0.62 | 0.48 | 36.25 | 1.03 | 1.04 | 1.03 |
| 120 | 3.30 | 2.92 | 3.11 | 0.39 | 0.54 | 36.68 | 1.03 | 1.04 | 1.03 |
| 125 | 3.20 | 3.02 | 3.11 | 0.18 | 0.59 | 37.16 | 1.02 | 1.04 | 1.03 |
| 130 | 3.11 | 3.12 | 3.11 | 0.01 | 0.66 | 37.75 | 1.02 | 1.04 | 1.03 |
| 135 | 3.03 | 3.20 | 3.12 | 0.17 | 0.70 | 38.45 | 1.02 | 1.04 | 1.03 |
| 140 | 2.96 | 3.28 | 3.12 | 0.32 | 0.77 | 39.21 | 1.02 | 1.04 | 1.03 |
| 145 | 2.90 | 3.35 | 3.12 | 0.44 | 0.84 | 40.03 | 1.02 | 1.04 | 1.03 |
| 150 | 2.86 | 3.41 | 3.13 | 0.55 | 0.87 | 40.71 | 1.03 | 1.04 | 1.03 |
| 155 | 2.83 | 3.45 | 3.14 | 0.62 | 0.90 | 41.46 | 1.03 | 1.04 | 1.03 |
| 160 | 2.80 | 3.49 | 3.15 | 0.69 | 0.96 | 42.01 | 1.03 | 1.04 | 1.03 |
| 165 | 2.78 | 3.52 | 3.15 | 0.73 | 1.04 | 42.56 | 1.04 | 1.05 | 1.03 |
| 170 | 2.78 | 3.53 | 3.15 | 0.75 | 1.09 | 42.74 | 1.04 | 1.05 | 1.03 |
| 175 | 2.79 | 3.54 | 3.16 | 0.75 | 1.13 | 42.63 | 1.04 | 1.05 | 1.03 |
| 180 | 2.81 | 3.53 | 3.17 | 0.72 | 1.20 | 42.12 | 1.04 | 1.05 | 1.03 |
| 185 | 2.84 | 3.51 | 3.17 | 0.67 | 1.27 | 40.91 | 1.05 | 1.05 | 1.03 |
| 190 | 2.88 | 3.47 | 3.18 | 0.59 | 1.36 | 39.32 | 1.05 | 1.05 | 1.03 |
| 195 | 2.93 | 3.43 | 3.18 | 0.49 | 1.43 | 37.55 | 1.05 | 1.06 | 1.02 |
| 200 | 3.00 | 3.36 | 3.18 | 0.36 | 1.52 | 35.65 | 1.05 | 1.06 | 1.03 |
| 205 | 3.08 | 3.28 | 3.18 | 0.20 | 1.60 | 33.76 | 1.05 | 1.07 | 1.03 |
| 210 | 3.19 | 3.20 | 3.19 | 0.00 | 1.76 | 31.93 | 1.06 | 1.08 | 1.04 |
| 215 | 3.33 | 3.09 | 3.21 | 0.23 | 1.85 | 30.18 | 1.07 | 1.09 | 1.06 |
| 220 | 3.49 | 2.98 | 3.23 | 0.51 | 2.01 | 28.48 | 1.08 | 1.10 | 1.08 |
| 225 | 3.68 | 2.85 | 3.26 | 0.83 | 2.20 | 26.87 | 1.10 | 1.12 | 1.10 |
| 230 | 3.91 | 2.71 | 3.31 | 1.20 | 2.42 | 25.28 | 1.12 | 1.14 | 1.12 |
| 235 | 4.18 | 2.55 | 3.37 | 1.63 | 2.72 | 23.74 | 1.15 | 1.17 | 1.14 |
| 240 | 4.52 | 2.39 | 3.46 | 2.14 | 3.09 | 22.24 | 1.18 | 1.20 | 1.17 |
| 245 | 4.94 | 2.22 | 3.58 | 2.72 | 3.60 | 20.78 | 1.21 | 1.24 | 1.21 |
| 250 | 5.45 | 2.05 | 3.75 | 3.40 | 4.29 | 19.36 | 1.26 | 1.29 | 1.24 |

¹Total Loss = Insertion Loss + 3dB Splitter Loss

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ADQ-180

Typical Performance Data

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| FREQ. (MHz) | TOTAL LOSS ¹ (dB) | | | AMP. UNBAL. (dB) | PHASE UNBAL. From 90° (deg.) | ISOLATION (dB) | VSWR (:1) | | |
|----------------|---------------------------------|------|------|------------------------|------------------------------------|-------------------|--------------|------|------|
| | S-1 | S-2 | AVG. | | | | S | 1 | 2 |
| 60 | 6.41 | 1.28 | 3.85 | 5.13 | 0.66 | 39.93 | 1.01 | 1.03 | 1.02 |
| 65 | 5.94 | 1.44 | 3.69 | 4.50 | 0.64 | 39.90 | 1.02 | 1.03 | 1.02 |
| 70 | 5.54 | 1.60 | 3.57 | 3.93 | 0.65 | 39.95 | 1.02 | 1.03 | 1.02 |
| 75 | 5.18 | 1.77 | 3.47 | 3.41 | 0.67 | 40.19 | 1.02 | 1.03 | 1.02 |
| 80 | 4.86 | 1.92 | 3.39 | 2.94 | 0.68 | 40.37 | 1.02 | 1.03 | 1.02 |
| 85 | 4.58 | 2.08 | 3.33 | 2.50 | 0.69 | 40.55 | 1.01 | 1.03 | 1.02 |
| 90 | 4.33 | 2.23 | 3.28 | 2.11 | 0.66 | 40.75 | 1.01 | 1.03 | 1.02 |
| 95 | 4.11 | 2.37 | 3.24 | 1.74 | 0.67 | 40.88 | 1.01 | 1.03 | 1.02 |
| 100 | 3.92 | 2.51 | 3.21 | 1.40 | 0.67 | 40.93 | 1.01 | 1.03 | 1.02 |
| 105 | 3.74 | 2.65 | 3.20 | 1.09 | 0.66 | 40.83 | 1.02 | 1.03 | 1.02 |
| 110 | 3.59 | 2.78 | 3.19 | 0.82 | 0.65 | 40.73 | 1.02 | 1.02 | 1.02 |
| 115 | 3.46 | 2.90 | 3.18 | 0.56 | 0.68 | 40.61 | 1.02 | 1.02 | 1.02 |
| 120 | 3.34 | 3.01 | 3.18 | 0.33 | 0.66 | 40.46 | 1.03 | 1.02 | 1.02 |
| 125 | 3.24 | 3.12 | 3.18 | 0.13 | 0.66 | 40.20 | 1.03 | 1.02 | 1.03 |
| 130 | 3.15 | 3.21 | 3.18 | 0.06 | 0.66 | 39.95 | 1.03 | 1.02 | 1.02 |
| 135 | 3.07 | 3.30 | 3.19 | 0.22 | 0.64 | 39.74 | 1.03 | 1.02 | 1.02 |
| 140 | 3.01 | 3.38 | 3.19 | 0.36 | 0.62 | 39.49 | 1.03 | 1.02 | 1.02 |
| 145 | 2.96 | 3.44 | 3.20 | 0.48 | 0.59 | 39.18 | 1.03 | 1.02 | 1.02 |
| 150 | 2.92 | 3.50 | 3.21 | 0.58 | 0.58 | 38.75 | 1.03 | 1.02 | 1.01 |
| 155 | 2.89 | 3.55 | 3.22 | 0.66 | 0.59 | 38.36 | 1.03 | 1.03 | 1.01 |
| 160 | 2.87 | 3.59 | 3.23 | 0.72 | 0.58 | 37.91 | 1.03 | 1.03 | 1.01 |
| 165 | 2.85 | 3.61 | 3.23 | 0.76 | 0.54 | 37.45 | 1.03 | 1.03 | 1.02 |
| 170 | 2.85 | 3.62 | 3.24 | 0.77 | 0.51 | 36.90 | 1.03 | 1.04 | 1.02 |
| 175 | 2.87 | 3.62 | 3.24 | 0.76 | 0.52 | 36.29 | 1.03 | 1.04 | 1.03 |
| 180 | 2.89 | 3.62 | 3.25 | 0.72 | 0.46 | 35.56 | 1.03 | 1.05 | 1.03 |
| 185 | 2.93 | 3.60 | 3.26 | 0.67 | 0.41 | 34.66 | 1.04 | 1.06 | 1.04 |
| 190 | 2.97 | 3.56 | 3.27 | 0.59 | 0.35 | 33.65 | 1.04 | 1.07 | 1.05 |
| 195 | 3.04 | 3.51 | 3.27 | 0.48 | 0.29 | 32.57 | 1.05 | 1.07 | 1.05 |
| 200 | 3.11 | 3.45 | 3.28 | 0.34 | 0.22 | 31.40 | 1.06 | 1.09 | 1.06 |
| 205 | 3.21 | 3.37 | 3.29 | 0.17 | 0.14 | 30.20 | 1.07 | 1.10 | 1.06 |
| 210 | 3.33 | 3.29 | 3.31 | 0.04 | 0.00 | 29.00 | 1.08 | 1.11 | 1.07 |
| 215 | 3.47 | 3.19 | 3.33 | 0.28 | 0.08 | 27.79 | 1.10 | 1.13 | 1.08 |
| 220 | 3.64 | 3.07 | 3.36 | 0.57 | 0.25 | 26.57 | 1.11 | 1.15 | 1.09 |
| 225 | 3.85 | 2.95 | 3.40 | 0.90 | 0.42 | 25.38 | 1.13 | 1.17 | 1.10 |
| 230 | 4.10 | 2.81 | 3.45 | 1.29 | 0.69 | 24.15 | 1.15 | 1.19 | 1.11 |
| 235 | 4.40 | 2.65 | 3.52 | 1.74 | 1.02 | 22.91 | 1.18 | 1.22 | 1.13 |
| 240 | 4.76 | 2.49 | 3.62 | 2.27 | 1.44 | 21.65 | 1.20 | 1.25 | 1.15 |
| 245 | 5.20 | 2.32 | 3.76 | 2.88 | 2.04 | 20.38 | 1.23 | 1.29 | 1.18 |
| 250 | 5.76 | 2.16 | 3.96 | 3.60 | 2.90 | 19.12 | 1.27 | 1.33 | 1.21 |

¹Total Loss = Insertion Loss + 3dB Splitter Loss

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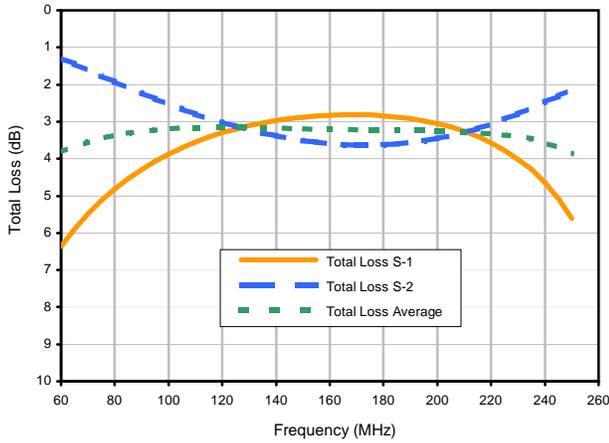


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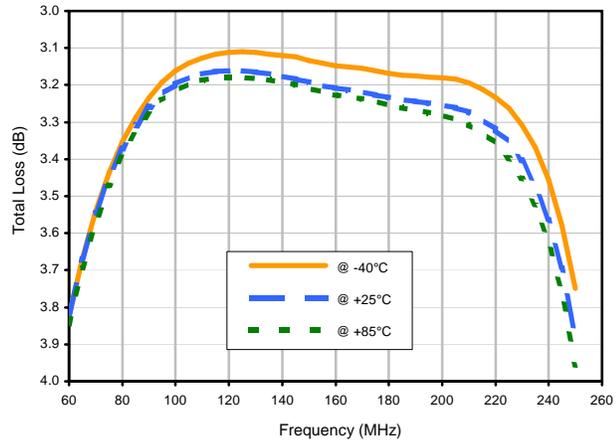


Typical Performance Curves

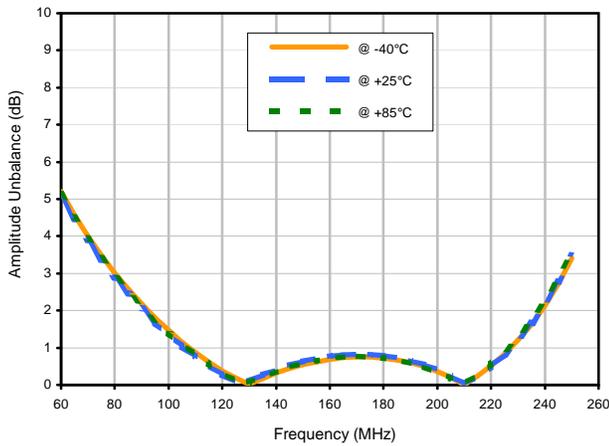
Total Loss



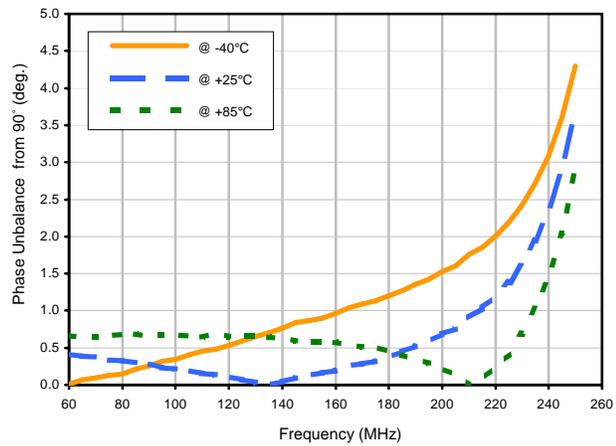
Average Total Loss vs. TEMPERATURE



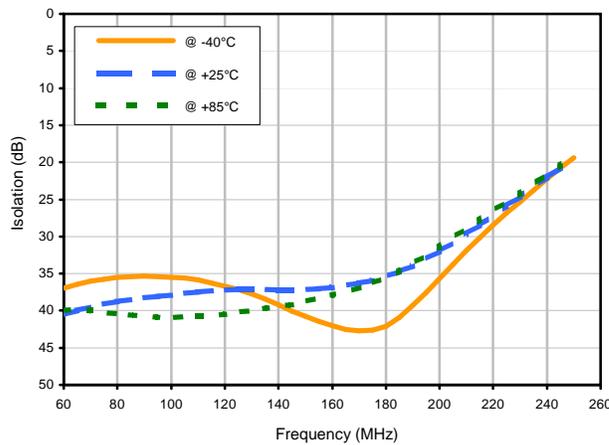
Amplitude Unbalance vs. TEMPERATURE



Phase Unbalance vs. TEMPERATURE

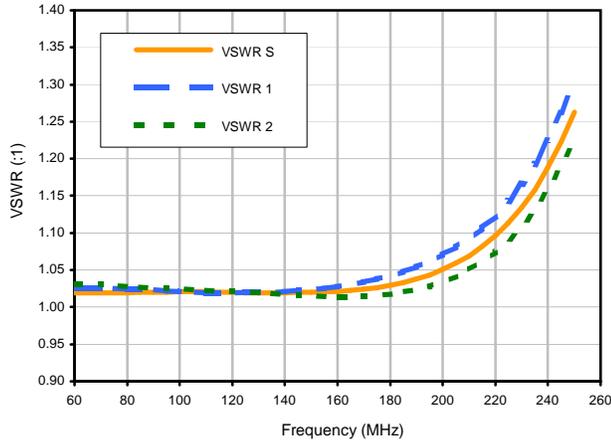


Isolation 1-2 vs. TEMPERATURE

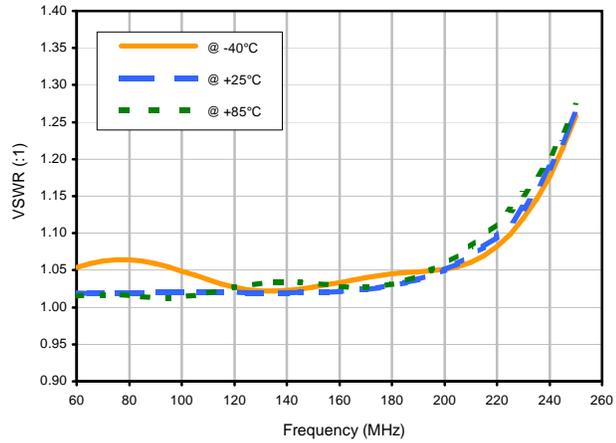


Typical Performance Curves

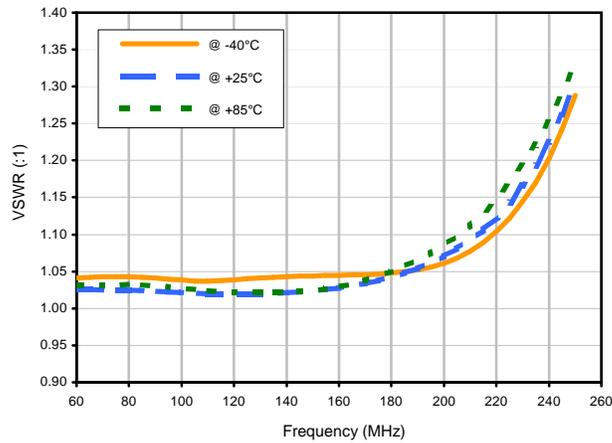
VSWR



VSWR SUM vs. TEMPERATURE



VSWR OUT1 vs. TEMPERATURE

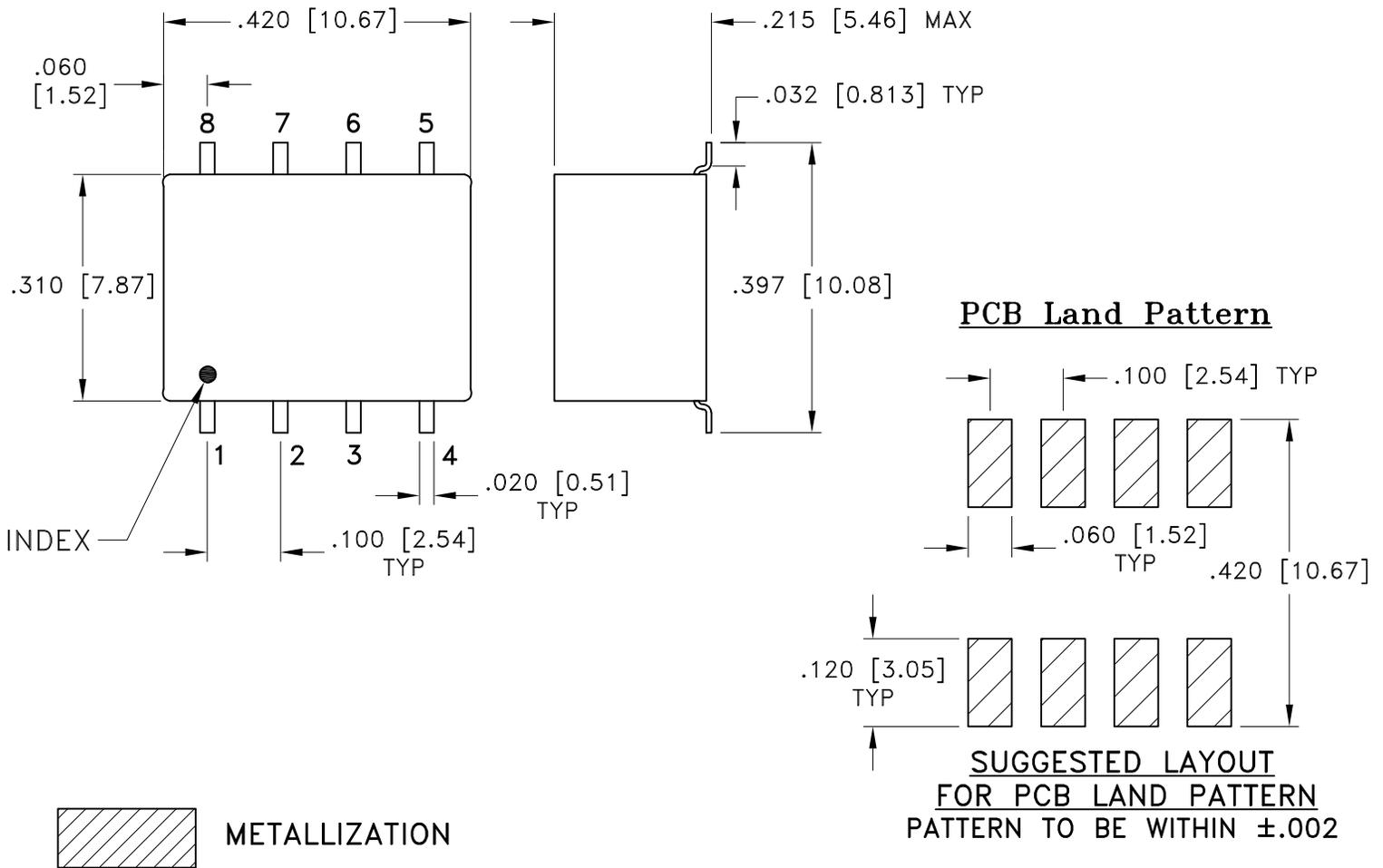


Case Style

CJ

Outline Dimensions

CJ725



Weight: .40 gram

Dimensions are in inches [mm]. Tolerances: 2 Pl. ± 0.01 ; 3 Pl. ± 0.005 Inch

Notes:

1. Case material: Plastic.
2. Termination finish:
Tin plate over Nickel plate.

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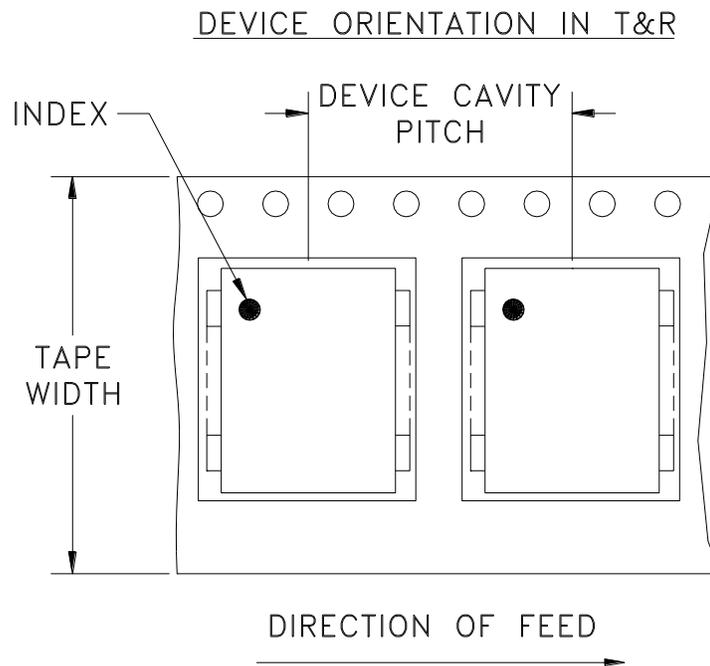
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Tape & Reel Packaging TR-F10



| Tape Width, mm | Device Cavity Pitch, mm | Reel Size, inches | Devices per Reel |
|----------------|-------------------------|-------------------|------------------|
| 24 | 16 | 7 | 10,20,50,100 |
| | | 13 | 200,500 |

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.

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



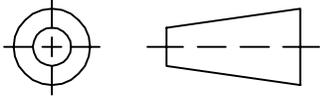
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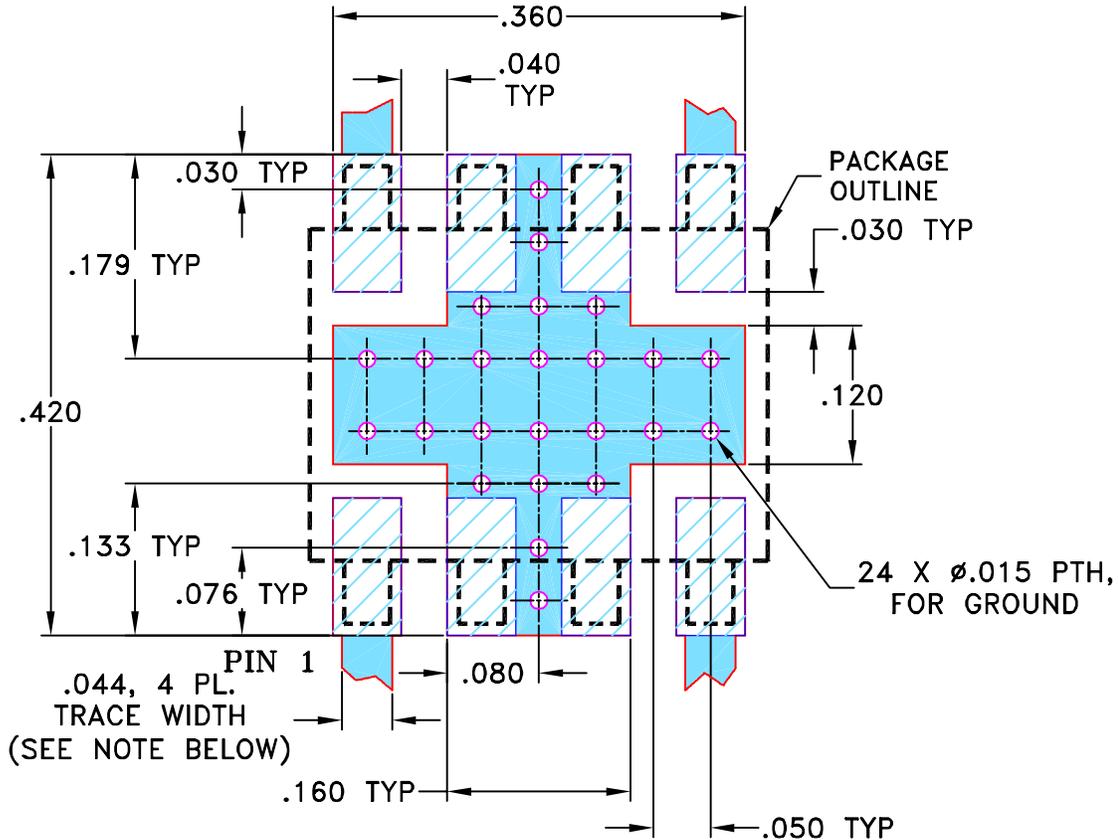
THIRD ANGLE PROJECTION



REVISIONS

| REV | ECN No. | DESCRIPTION | DATE | DR | AUTH |
|-----|---------|--------------------------------------|----------|----|------|
| OR | M82272 | NEW RELEASE | 08/06/02 | GF | DJ |
| A | M102713 | UPDATED NOTES, ADDED "...WITH SMOBC" | 01/16/06 | GT | IL |
| | | | | | |

SUGGESTED MOUNTING CONFIGURATION FOR CJ725 CASE STYLE, "ma", "nf" PIN CONNECTIONS



- 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 |
|----------------------------|----------|----------|
| DRAWN | GF | 07/18/02 |
| CHECKED | HY | 08/01/02 |
| APPROVED | DJ | 08/06/02 |

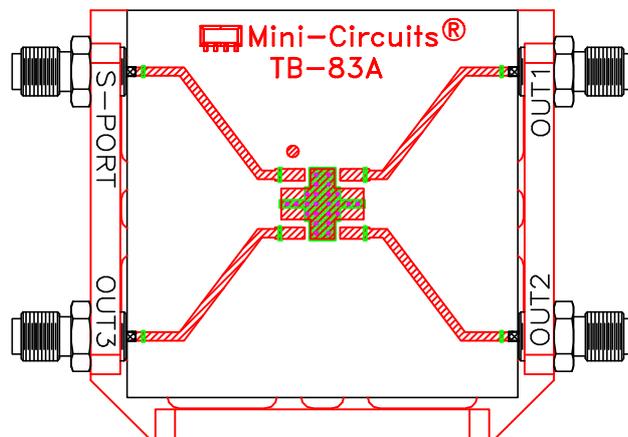
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Brooklyn NY 11235

PL, ma/nf, CJ725, AD3PS/ADQ, TB-83

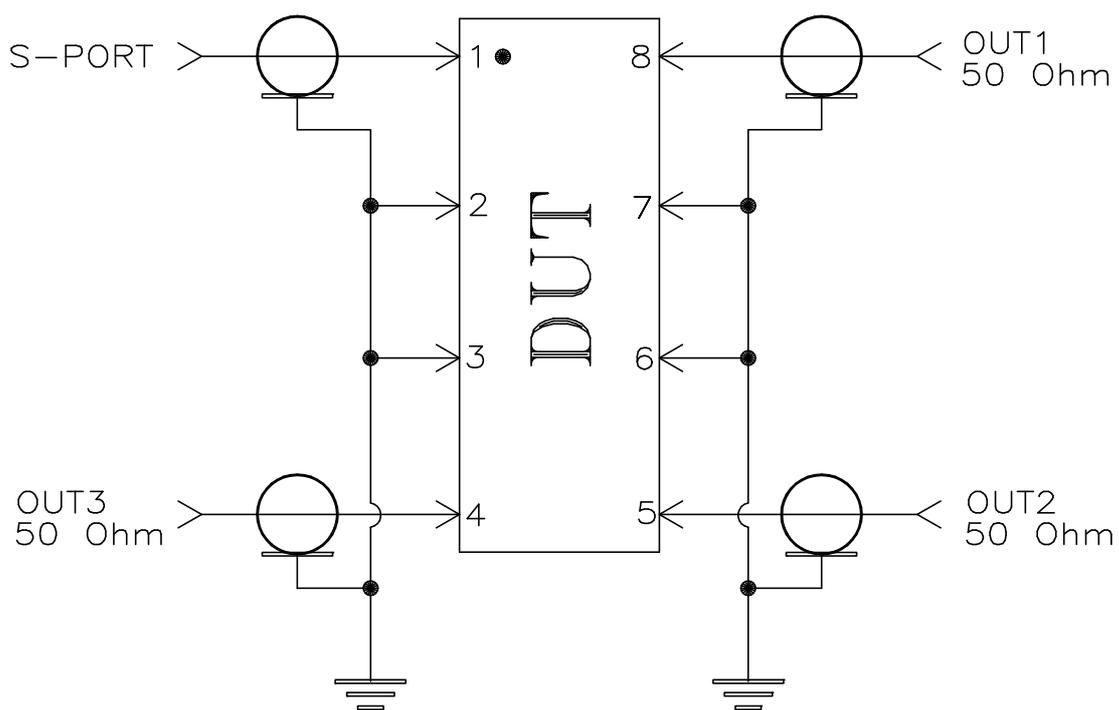
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| SIZE | CODE IDENT | DRAWING NO: | REV: |
|-------|------------|-------------|--------|
| A | 15542 | 98-PL-063 | A |
| FILE: | 98PL063 | SCALE: | SHEET: |
| | | 6:1 | 1 OF 1 |

Evaluation Board and Circuit



TB-83



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 | -40° to 85°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 |
| Thermal Shock | -55° to 100°C, 100 cycles | MIL-STD-202, Method 107, Condition A-3, except +100°C |
| 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, 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 |
| Marking Resistance to Solvents | Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C | MIL-STD-202, Method 215 |