

Surface Mount Power Splitter/Combiner

LRPS-3-850+ LRPS-3-850

3 Way-0° 50Ω 500 to 850 MHz

Maximum Ratings

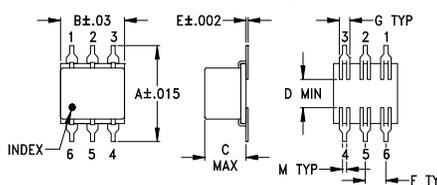
| | |
|-----------------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Power Input (as a splitter) | 1W max. |
| Internal Dissipation | 0.375W max. |

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

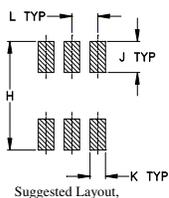
Pin Connections

| | |
|----------|-----|
| SUM PORT | 6 |
| PORT 1 | 1 |
| PORT 2 | 3 |
| PORT 3 | 4 |
| GROUND | 2,5 |

Outline Drawing



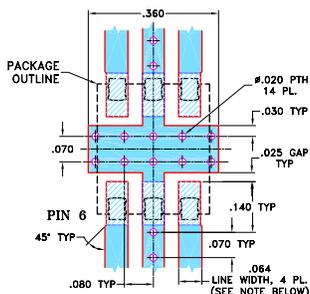
PCB Land Pattern



Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G |
|-------|------|------|------|------|-------|------|
| .400 | .31 | .200 | .10 | .010 | .100 | .050 |
| 10.16 | 7.87 | 5.08 | 2.54 | 0.25 | 2.54 | 1.27 |
| H | J | K | L | M | wt | |
| .420 | .120 | .060 | .100 | .020 | grams | |
| 10.67 | 3.05 | 1.52 | 2.54 | 0.51 | 0.55 | |

Demo Board MCL P/N: TB-226 Suggested PCB Layout (PL-140)



- NOTE:**
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002". 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

- low insertion loss, 0.7 dB typ.
- good isolation, 23 dB typ.
- J-leads for strain relief & excellent solderability

Applications

- UHF
- communication systems



Generic photo used for illustration purposes only

CASE STYLE: QQQ130

+RoHS Compliant

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

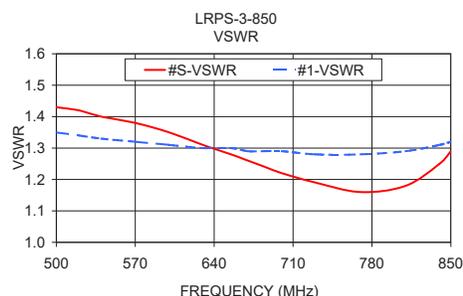
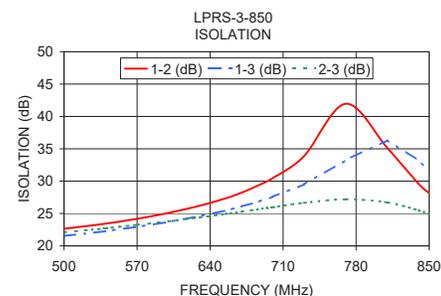
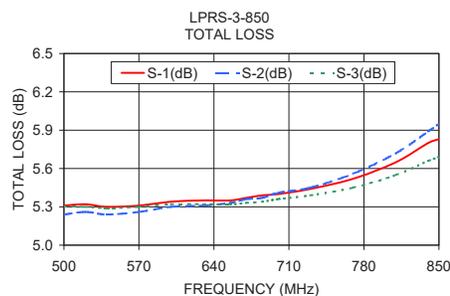
Electrical Specifications

| FREQ. RANGE (MHz) | ISOLATION (dB) | | INSERTION LOSS (dB) ABOVE 4.8 dB | | PHASE UNBALANCE (Degrees) | AMPLITUDE UNBALANCE (dB) |
|-------------------|----------------|------|----------------------------------|------|---------------------------|--------------------------|
| | Typ. | Min. | Typ. | Max. | Max. | Max. |
| $f_c - f_u$ | 23 | 16 | 0.7 | 1.6 | 8 | 0.9 |
| 500-850 | | | | | | |

Typical Performance Data

| Freq. (MHz) | Total Loss ¹ (dB) | | | Amp. Unbal. (dB) | Isolation (dB) | | | Phase Unbal. (deg.) | VSWR S | VSWR 1 | VSWR 2 | VSWR 3 |
|-------------|------------------------------|------|------|------------------|----------------|-------|-------|---------------------|--------|--------|--------|--------|
| | S-1 | S-2 | S-3 | | 1-2 | 1-3 | 2-3 | | | | | |
| 500.00 | 5.31 | 5.24 | 5.30 | 0.08 | 22.65 | 21.54 | 22.09 | 0.35 | 1.43 | 1.35 | 1.30 | 1.35 |
| 520.00 | 5.32 | 5.26 | 5.30 | 0.07 | 23.03 | 21.90 | 22.41 | 0.29 | 1.42 | 1.34 | 1.29 | 1.34 |
| 540.00 | 5.30 | 5.24 | 5.29 | 0.06 | 23.44 | 22.28 | 22.73 | 0.40 | 1.40 | 1.33 | 1.28 | 1.32 |
| 570.00 | 5.31 | 5.26 | 5.30 | 0.05 | 24.18 | 22.94 | 23.24 | 0.45 | 1.38 | 1.32 | 1.27 | 1.31 |
| 600.00 | 5.34 | 5.30 | 5.32 | 0.05 | 25.09 | 23.70 | 23.79 | 0.54 | 1.35 | 1.31 | 1.26 | 1.29 |
| 630.00 | 5.35 | 5.31 | 5.32 | 0.03 | 26.20 | 24.60 | 24.38 | 0.69 | 1.31 | 1.30 | 1.25 | 1.27 |
| 655.00 | 5.35 | 5.33 | 5.32 | 0.03 | 27.35 | 25.46 | 24.93 | 0.79 | 1.28 | 1.30 | 1.24 | 1.26 |
| 670.00 | 5.37 | 5.36 | 5.33 | 0.04 | 28.21 | 26.08 | 25.26 | 0.88 | 1.26 | 1.29 | 1.24 | 1.25 |
| 685.00 | 5.39 | 5.37 | 5.34 | 0.05 | 29.25 | 26.76 | 25.62 | 0.99 | 1.24 | 1.29 | 1.23 | 1.25 |
| 700.00 | 5.40 | 5.41 | 5.36 | 0.05 | 30.46 | 27.58 | 25.97 | 1.10 | 1.22 | 1.29 | 1.23 | 1.24 |
| 730.00 | 5.44 | 5.45 | 5.39 | 0.06 | 33.85 | 29.49 | 26.65 | 1.39 | 1.19 | 1.28 | 1.23 | 1.23 |
| 770.00 | 5.52 | 5.56 | 5.45 | 0.11 | 41.96 | 33.24 | 27.20 | 1.76 | 1.16 | 1.28 | 1.23 | 1.21 |
| 810.00 | 5.65 | 5.72 | 5.55 | 0.17 | 35.11 | 36.31 | 26.71 | 2.31 | 1.18 | 1.29 | 1.24 | 1.20 |
| 840.00 | 5.80 | 5.89 | 5.66 | 0.23 | 29.55 | 33.17 | 25.47 | 2.69 | 1.25 | 1.31 | 1.26 | 1.20 |
| 850.00 | 5.83 | 5.95 | 5.69 | 0.25 | 28.14 | 31.70 | 24.92 | 2.83 | 1.29 | 1.32 | 1.27 | 1.20 |

1. Total Loss = Insertion Loss + 4.8dB splitter loss.



electrical schematic



3 Way-0° Power Splitter/Combiner

LRPS-3-850

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-3 | | | 1-2 | 1-3 | 2-3 | S | 1 | 2 | 3 |
| 40 | 6.00 | 6.12 | 6.10 | 0.12 | 0.51 | 12.82 | 11.47 | 11.21 | 2.88 | 4.91 | 5.05 | 5.24 |
| 50 | 5.68 | 5.80 | 5.80 | 0.13 | 0.58 | 13.11 | 11.53 | 11.24 | 2.45 | 4.07 | 4.19 | 4.42 |
| 75 | 5.34 | 5.47 | 5.49 | 0.15 | 0.72 | 14.29 | 12.27 | 11.93 | 1.99 | 2.98 | 3.06 | 3.30 |
| 100 | 5.22 | 5.35 | 5.39 | 0.17 | 0.78 | 15.49 | 13.21 | 12.89 | 1.82 | 2.44 | 2.50 | 2.71 |
| 125 | 5.16 | 5.29 | 5.35 | 0.19 | 0.82 | 16.51 | 14.15 | 13.89 | 1.72 | 2.12 | 2.16 | 2.34 |
| 150 | 5.13 | 5.26 | 5.34 | 0.20 | 0.77 | 17.33 | 15.00 | 14.84 | 1.67 | 1.92 | 1.95 | 2.10 |
| 175 | 5.12 | 5.25 | 5.32 | 0.20 | 0.78 | 18.00 | 15.77 | 15.70 | 1.63 | 1.78 | 1.80 | 1.93 |
| 200 | 5.11 | 5.24 | 5.33 | 0.21 | 0.78 | 18.55 | 16.47 | 16.51 | 1.61 | 1.68 | 1.69 | 1.80 |
| 225 | 5.11 | 5.24 | 5.33 | 0.21 | 0.79 | 18.99 | 17.07 | 17.21 | 1.59 | 1.61 | 1.61 | 1.70 |
| 250 | 5.11 | 5.24 | 5.33 | 0.21 | 0.77 | 19.40 | 17.63 | 17.84 | 1.57 | 1.55 | 1.54 | 1.63 |
| 275 | 5.12 | 5.24 | 5.33 | 0.21 | 0.76 | 19.73 | 18.12 | 18.41 | 1.56 | 1.50 | 1.49 | 1.57 |
| 300 | 5.12 | 5.24 | 5.33 | 0.21 | 0.77 | 20.05 | 18.59 | 18.92 | 1.55 | 1.46 | 1.45 | 1.52 |
| 325 | 5.13 | 5.25 | 5.34 | 0.20 | 0.76 | 20.34 | 19.00 | 19.35 | 1.54 | 1.43 | 1.41 | 1.48 |
| 350 | 5.14 | 5.25 | 5.34 | 0.20 | 0.72 | 20.63 | 19.40 | 19.75 | 1.53 | 1.41 | 1.38 | 1.44 |
| 375 | 5.15 | 5.25 | 5.34 | 0.20 | 0.70 | 20.89 | 19.76 | 20.08 | 1.52 | 1.38 | 1.35 | 1.41 |
| 400 | 5.15 | 5.26 | 5.34 | 0.19 | 0.68 | 21.17 | 20.14 | 20.40 | 1.50 | 1.36 | 1.33 | 1.38 |
| 425 | 5.16 | 5.27 | 5.35 | 0.18 | 0.63 | 21.44 | 20.48 | 20.65 | 1.50 | 1.35 | 1.31 | 1.36 |
| 450 | 5.17 | 5.27 | 5.35 | 0.18 | 0.65 | 21.75 | 20.82 | 20.89 | 1.48 | 1.33 | 1.29 | 1.34 |
| 475 | 5.18 | 5.27 | 5.35 | 0.17 | 0.62 | 22.07 | 21.18 | 21.09 | 1.47 | 1.32 | 1.27 | 1.32 |
| 500 | 5.19 | 5.28 | 5.35 | 0.16 | 0.62 | 22.40 | 21.52 | 21.29 | 1.45 | 1.31 | 1.26 | 1.30 |
| 525 | 5.20 | 5.29 | 5.36 | 0.15 | 0.60 | 22.82 | 21.95 | 21.50 | 1.44 | 1.29 | 1.24 | 1.28 |
| 550 | 5.21 | 5.30 | 5.35 | 0.14 | 0.57 | 23.21 | 22.32 | 21.65 | 1.42 | 1.28 | 1.23 | 1.27 |
| 575 | 5.23 | 5.30 | 5.36 | 0.13 | 0.55 | 23.73 | 22.79 | 21.85 | 1.40 | 1.27 | 1.22 | 1.25 |
| 600 | 5.24 | 5.31 | 5.36 | 0.11 | 0.50 | 24.23 | 23.21 | 21.96 | 1.38 | 1.26 | 1.20 | 1.24 |
| 625 | 5.25 | 5.32 | 5.36 | 0.10 | 0.58 | 24.91 | 23.77 | 22.18 | 1.36 | 1.25 | 1.19 | 1.23 |
| 650 | 5.27 | 5.34 | 5.36 | 0.09 | 0.70 | 25.64 | 24.33 | 22.31 | 1.34 | 1.24 | 1.18 | 1.22 |
| 675 | 5.29 | 5.35 | 5.36 | 0.07 | 0.85 | 26.57 | 25.01 | 22.55 | 1.31 | 1.23 | 1.17 | 1.21 |
| 700 | 5.30 | 5.36 | 5.36 | 0.06 | 1.02 | 27.67 | 25.81 | 22.73 | 1.28 | 1.22 | 1.16 | 1.19 |
| 725 | 5.33 | 5.39 | 5.37 | 0.06 | 1.17 | 29.09 | 26.71 | 22.97 | 1.25 | 1.21 | 1.15 | 1.18 |
| 750 | 5.35 | 5.41 | 5.38 | 0.06 | 1.34 | 31.05 | 27.89 | 23.16 | 1.21 | 1.20 | 1.14 | 1.17 |
| 775 | 5.38 | 5.45 | 5.39 | 0.07 | 1.62 | 33.80 | 29.17 | 23.40 | 1.18 | 1.19 | 1.13 | 1.16 |
| 800 | 5.42 | 5.48 | 5.40 | 0.08 | 2.03 | 38.74 | 31.07 | 23.58 | 1.15 | 1.18 | 1.13 | 1.15 |
| 825 | 5.47 | 5.54 | 5.43 | 0.11 | 2.46 | 52.16 | 33.06 | 23.70 | 1.12 | 1.18 | 1.13 | 1.14 |
| 850 | 5.52 | 5.60 | 5.46 | 0.14 | 3.00 | 41.16 | 35.39 | 23.72 | 1.12 | 1.17 | 1.13 | 1.12 |
| 875 | 5.59 | 5.68 | 5.51 | 0.17 | 3.53 | 33.90 | 35.93 | 23.51 | 1.14 | 1.17 | 1.13 | 1.11 |
| 900 | 5.69 | 5.79 | 5.57 | 0.22 | 4.23 | 29.44 | 33.33 | 23.14 | 1.19 | 1.18 | 1.14 | 1.10 |
| 925 | 5.81 | 5.92 | 5.66 | 0.26 | 5.03 | 26.36 | 30.25 | 22.44 | 1.27 | 1.19 | 1.16 | 1.09 |
| 950 | 5.97 | 6.09 | 5.78 | 0.31 | 5.90 | 23.82 | 27.29 | 21.57 | 1.37 | 1.21 | 1.18 | 1.08 |
| 975 | 6.17 | 6.32 | 5.94 | 0.38 | 6.92 | 21.71 | 24.87 | 20.46 | 1.50 | 1.24 | 1.20 | 1.07 |
| 1000 | 6.43 | 6.61 | 6.15 | 0.46 | 8.17 | 19.88 | 22.76 | 19.31 | 1.66 | 1.28 | 1.24 | 1.08 |

¹Total Loss = Insertion Loss + 4.8dB Splitter Loss



3 Way-0° Power Splitter/Combiner

LRPS-3-850

Typical Performance Data

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

| FREQ. (MHz) | TOTAL LOSS ¹ (dB) | | | AMP. UNBAL. (dB) | PHASE UNBAL. (deg.) | ISOLATION (dB) | | | VSWR (:1) | | | |
|----------------|---------------------------------|------|------|------------------------|---------------------------|-------------------|-------|-------|--------------|------|------|------|
| | S-1 | S-2 | S-3 | | | 1-2 | 1-3 | 2-3 | S | 1 | 2 | 3 |
| 40 | 5.99 | 6.08 | 6.07 | 0.08 | 0.83 | 12.74 | 11.41 | 11.10 | 2.85 | 4.93 | 5.01 | 5.20 |
| 50 | 5.67 | 5.77 | 5.77 | 0.10 | 1.07 | 13.03 | 11.47 | 11.15 | 2.44 | 4.08 | 4.16 | 4.39 |
| 75 | 5.31 | 5.45 | 5.49 | 0.18 | 1.31 | 14.24 | 12.24 | 11.92 | 2.00 | 2.98 | 3.09 | 3.34 |
| 100 | 5.17 | 5.34 | 5.38 | 0.21 | 1.17 | 15.48 | 13.19 | 12.92 | 1.81 | 2.44 | 2.54 | 2.75 |
| 125 | 5.12 | 5.28 | 5.32 | 0.20 | 1.20 | 16.56 | 14.16 | 13.92 | 1.71 | 2.13 | 2.19 | 2.37 |
| 150 | 5.11 | 5.24 | 5.32 | 0.20 | 1.41 | 17.43 | 15.05 | 14.88 | 1.67 | 1.94 | 1.97 | 2.12 |
| 175 | 5.11 | 5.23 | 5.32 | 0.21 | 1.54 | 18.14 | 15.87 | 15.79 | 1.65 | 1.81 | 1.83 | 1.97 |
| 200 | 5.10 | 5.23 | 5.32 | 0.22 | 1.58 | 18.68 | 16.57 | 16.59 | 1.63 | 1.72 | 1.73 | 1.85 |
| 225 | 5.10 | 5.23 | 5.31 | 0.20 | 1.66 | 19.10 | 17.14 | 17.26 | 1.61 | 1.65 | 1.64 | 1.74 |
| 250 | 5.11 | 5.22 | 5.31 | 0.20 | 1.89 | 19.44 | 17.66 | 17.84 | 1.60 | 1.59 | 1.57 | 1.66 |
| 275 | 5.12 | 5.22 | 5.32 | 0.21 | 2.04 | 19.73 | 18.11 | 18.36 | 1.59 | 1.54 | 1.51 | 1.61 |
| 300 | 5.11 | 5.22 | 5.32 | 0.21 | 2.13 | 20.01 | 18.54 | 18.85 | 1.58 | 1.50 | 1.48 | 1.56 |
| 325 | 5.11 | 5.22 | 5.31 | 0.20 | 2.21 | 20.27 | 18.92 | 19.26 | 1.56 | 1.46 | 1.45 | 1.51 |
| 350 | 5.11 | 5.22 | 5.30 | 0.19 | 2.33 | 20.55 | 19.30 | 19.64 | 1.55 | 1.43 | 1.41 | 1.46 |
| 375 | 5.12 | 5.22 | 5.31 | 0.19 | 2.45 | 20.81 | 19.66 | 19.98 | 1.54 | 1.40 | 1.38 | 1.43 |
| 400 | 5.12 | 5.22 | 5.31 | 0.18 | 2.54 | 21.11 | 20.04 | 20.31 | 1.52 | 1.38 | 1.36 | 1.41 |
| 425 | 5.13 | 5.23 | 5.31 | 0.18 | 2.59 | 21.36 | 20.36 | 20.55 | 1.51 | 1.37 | 1.34 | 1.38 |
| 450 | 5.13 | 5.22 | 5.30 | 0.17 | 2.64 | 21.65 | 20.68 | 20.78 | 1.50 | 1.35 | 1.32 | 1.35 |
| 475 | 5.14 | 5.23 | 5.30 | 0.16 | 2.72 | 21.93 | 21.00 | 20.95 | 1.49 | 1.34 | 1.29 | 1.33 |
| 500 | 5.15 | 5.23 | 5.30 | 0.15 | 2.79 | 22.23 | 21.31 | 21.12 | 1.47 | 1.32 | 1.27 | 1.31 |
| 525 | 5.16 | 5.24 | 5.30 | 0.14 | 2.86 | 22.62 | 21.69 | 21.32 | 1.45 | 1.31 | 1.26 | 1.30 |
| 550 | 5.17 | 5.24 | 5.29 | 0.13 | 2.92 | 23.01 | 22.04 | 21.52 | 1.43 | 1.29 | 1.24 | 1.28 |
| 575 | 5.17 | 5.24 | 5.29 | 0.12 | 2.92 | 23.52 | 22.50 | 21.76 | 1.41 | 1.28 | 1.22 | 1.26 |
| 600 | 5.18 | 5.24 | 5.29 | 0.10 | 2.90 | 24.03 | 22.91 | 21.94 | 1.39 | 1.26 | 1.21 | 1.25 |
| 625 | 5.19 | 5.25 | 5.28 | 0.09 | 2.89 | 24.76 | 23.48 | 22.22 | 1.36 | 1.25 | 1.20 | 1.23 |
| 650 | 5.20 | 5.26 | 5.28 | 0.08 | 2.87 | 25.52 | 24.05 | 22.41 | 1.33 | 1.24 | 1.19 | 1.22 |
| 675 | 5.21 | 5.27 | 5.27 | 0.06 | 2.78 | 26.50 | 24.75 | 22.70 | 1.30 | 1.22 | 1.17 | 1.21 |
| 700 | 5.23 | 5.28 | 5.27 | 0.05 | 2.65 | 27.62 | 25.52 | 22.90 | 1.27 | 1.22 | 1.16 | 1.19 |
| 725 | 5.25 | 5.30 | 5.28 | 0.05 | 2.57 | 29.09 | 26.40 | 23.17 | 1.24 | 1.21 | 1.16 | 1.18 |
| 750 | 5.27 | 5.33 | 5.28 | 0.05 | 2.39 | 31.07 | 27.51 | 23.41 | 1.21 | 1.20 | 1.15 | 1.17 |
| 775 | 5.30 | 5.36 | 5.30 | 0.06 | 2.18 | 33.84 | 28.71 | 23.68 | 1.18 | 1.19 | 1.14 | 1.16 |
| 800 | 5.33 | 5.39 | 5.31 | 0.08 | 1.98 | 38.82 | 30.39 | 23.91 | 1.14 | 1.19 | 1.13 | 1.15 |
| 825 | 5.37 | 5.43 | 5.32 | 0.11 | 1.83 | 50.75 | 32.04 | 24.06 | 1.11 | 1.18 | 1.13 | 1.13 |
| 850 | 5.42 | 5.49 | 5.35 | 0.14 | 1.68 | 40.47 | 33.78 | 24.12 | 1.11 | 1.18 | 1.13 | 1.12 |
| 875 | 5.49 | 5.57 | 5.39 | 0.18 | 1.50 | 33.57 | 34.12 | 23.91 | 1.13 | 1.18 | 1.14 | 1.11 |
| 900 | 5.58 | 5.67 | 5.45 | 0.22 | 1.22 | 29.17 | 32.14 | 23.48 | 1.19 | 1.18 | 1.15 | 1.10 |
| 925 | 5.70 | 5.80 | 5.53 | 0.27 | 1.26 | 26.15 | 29.57 | 22.71 | 1.26 | 1.20 | 1.16 | 1.09 |
| 950 | 5.85 | 5.96 | 5.65 | 0.32 | 1.67 | 23.64 | 26.86 | 21.76 | 1.37 | 1.22 | 1.18 | 1.08 |
| 975 | 6.04 | 6.18 | 5.80 | 0.38 | 2.13 | 21.57 | 24.61 | 20.59 | 1.49 | 1.25 | 1.21 | 1.08 |
| 1000 | 6.28 | 6.46 | 6.00 | 0.46 | 3.05 | 19.76 | 22.57 | 19.39 | 1.65 | 1.29 | 1.25 | 1.08 |

¹Total Loss = Insertion Loss + 4.8dB Splitter Loss

3 Way-0° Power Splitter/Combiner

LRPS-3-850

Typical Performance Data

TEST CONDITIONS: INPUT POWER = 0dBm @Temperature = +85°C

| FREQ. (MHz) | TOTAL LOSS ¹ (dB) | | | AMP. UNBAL. (dB) | PHASE UNBAL. (deg.) | ISOLATION (dB) | | | VSWR (:1) | | | |
|----------------|---------------------------------|------|------|------------------------|---------------------------|-------------------|-------|-------|--------------|------|------|------|
| | S-1 | S-2 | S-3 | | | 1-2 | 1-3 | 2-3 | S | 1 | 2 | 3 |
| 40 | 5.98 | 6.17 | 6.16 | 0.18 | 0.35 | 12.91 | 11.55 | 11.34 | 2.90 | 4.91 | 5.12 | 5.31 |
| 50 | 5.67 | 5.84 | 5.84 | 0.17 | 0.46 | 13.19 | 11.61 | 11.36 | 2.47 | 4.07 | 4.24 | 4.46 |
| 75 | 5.36 | 5.47 | 5.49 | 0.14 | 0.63 | 14.34 | 12.31 | 11.96 | 1.99 | 2.99 | 3.05 | 3.28 |
| 100 | 5.25 | 5.34 | 5.39 | 0.14 | 0.70 | 15.48 | 13.22 | 12.85 | 1.82 | 2.45 | 2.45 | 2.67 |
| 125 | 5.19 | 5.30 | 5.37 | 0.19 | 0.63 | 16.46 | 14.14 | 13.86 | 1.73 | 2.13 | 2.14 | 2.33 |
| 150 | 5.14 | 5.27 | 5.36 | 0.22 | 0.52 | 17.21 | 14.95 | 14.78 | 1.67 | 1.91 | 1.94 | 2.10 |
| 175 | 5.11 | 5.25 | 5.33 | 0.21 | 0.70 | 17.84 | 15.68 | 15.61 | 1.62 | 1.76 | 1.78 | 1.90 |
| 200 | 5.11 | 5.24 | 5.33 | 0.21 | 0.84 | 18.37 | 16.35 | 16.38 | 1.58 | 1.65 | 1.65 | 1.76 |
| 225 | 5.11 | 5.24 | 5.34 | 0.23 | 0.92 | 18.84 | 16.97 | 17.10 | 1.57 | 1.57 | 1.57 | 1.67 |
| 250 | 5.10 | 5.24 | 5.34 | 0.24 | 1.01 | 19.28 | 17.55 | 17.78 | 1.55 | 1.51 | 1.51 | 1.61 |
| 275 | 5.11 | 5.24 | 5.35 | 0.24 | 1.17 | 19.67 | 18.08 | 18.39 | 1.53 | 1.46 | 1.47 | 1.54 |
| 300 | 5.11 | 5.24 | 5.34 | 0.22 | 1.33 | 20.04 | 18.58 | 18.93 | 1.51 | 1.43 | 1.42 | 1.48 |
| 325 | 5.13 | 5.25 | 5.35 | 0.21 | 1.48 | 20.37 | 19.03 | 19.40 | 1.50 | 1.40 | 1.38 | 1.44 |
| 350 | 5.14 | 5.25 | 5.35 | 0.21 | 1.58 | 20.69 | 19.47 | 19.83 | 1.50 | 1.38 | 1.35 | 1.41 |
| 375 | 5.15 | 5.26 | 5.36 | 0.21 | 1.71 | 20.97 | 19.85 | 20.18 | 1.49 | 1.36 | 1.33 | 1.39 |
| 400 | 5.16 | 5.27 | 5.36 | 0.20 | 1.84 | 21.28 | 20.25 | 20.52 | 1.48 | 1.34 | 1.31 | 1.36 |
| 425 | 5.18 | 5.28 | 5.37 | 0.19 | 2.03 | 21.55 | 20.59 | 20.76 | 1.47 | 1.33 | 1.29 | 1.33 |
| 450 | 5.19 | 5.28 | 5.37 | 0.18 | 2.17 | 21.87 | 20.96 | 21.02 | 1.46 | 1.31 | 1.27 | 1.31 |
| 475 | 5.20 | 5.29 | 5.38 | 0.18 | 2.36 | 22.19 | 21.33 | 21.22 | 1.45 | 1.30 | 1.25 | 1.30 |
| 500 | 5.21 | 5.30 | 5.38 | 0.17 | 2.50 | 22.54 | 21.70 | 21.42 | 1.43 | 1.28 | 1.24 | 1.28 |
| 525 | 5.23 | 5.31 | 5.39 | 0.16 | 2.68 | 22.98 | 22.14 | 21.62 | 1.42 | 1.27 | 1.23 | 1.26 |
| 550 | 5.24 | 5.32 | 5.39 | 0.15 | 2.87 | 23.41 | 22.55 | 21.78 | 1.40 | 1.26 | 1.21 | 1.25 |
| 575 | 5.26 | 5.33 | 5.40 | 0.14 | 3.11 | 23.95 | 23.07 | 21.98 | 1.38 | 1.26 | 1.20 | 1.24 |
| 600 | 5.28 | 5.35 | 5.40 | 0.12 | 3.30 | 24.44 | 23.50 | 22.07 | 1.37 | 1.25 | 1.19 | 1.23 |
| 625 | 5.30 | 5.36 | 5.40 | 0.10 | 3.53 | 25.15 | 24.09 | 22.26 | 1.35 | 1.24 | 1.18 | 1.21 |
| 650 | 5.32 | 5.38 | 5.41 | 0.09 | 3.74 | 25.87 | 24.68 | 22.35 | 1.33 | 1.23 | 1.17 | 1.21 |
| 675 | 5.33 | 5.39 | 5.41 | 0.08 | 4.00 | 26.80 | 25.40 | 22.54 | 1.30 | 1.22 | 1.16 | 1.19 |
| 700 | 5.36 | 5.41 | 5.42 | 0.06 | 4.36 | 27.87 | 26.21 | 22.65 | 1.28 | 1.21 | 1.16 | 1.19 |
| 725 | 5.39 | 5.44 | 5.43 | 0.05 | 4.72 | 29.31 | 27.17 | 22.83 | 1.25 | 1.20 | 1.15 | 1.18 |
| 750 | 5.42 | 5.47 | 5.44 | 0.05 | 5.14 | 31.20 | 28.41 | 22.96 | 1.22 | 1.20 | 1.14 | 1.17 |
| 775 | 5.45 | 5.51 | 5.46 | 0.06 | 5.61 | 33.90 | 29.85 | 23.13 | 1.19 | 1.19 | 1.13 | 1.16 |
| 800 | 5.49 | 5.55 | 5.48 | 0.07 | 6.14 | 38.38 | 31.97 | 23.25 | 1.16 | 1.18 | 1.13 | 1.15 |
| 825 | 5.54 | 5.60 | 5.51 | 0.10 | 6.76 | 45.34 | 34.50 | 23.29 | 1.14 | 1.17 | 1.13 | 1.14 |
| 850 | 5.60 | 5.67 | 5.54 | 0.13 | 7.39 | 40.05 | 38.02 | 23.26 | 1.13 | 1.17 | 1.12 | 1.13 |
| 875 | 5.68 | 5.76 | 5.59 | 0.17 | 8.12 | 33.84 | 39.23 | 23.03 | 1.15 | 1.17 | 1.13 | 1.12 |
| 900 | 5.78 | 5.87 | 5.66 | 0.21 | 8.96 | 29.56 | 35.13 | 22.68 | 1.20 | 1.17 | 1.13 | 1.10 |
| 925 | 5.91 | 6.01 | 5.75 | 0.26 | 9.88 | 26.53 | 31.24 | 22.05 | 1.27 | 1.18 | 1.15 | 1.09 |
| 950 | 6.08 | 6.18 | 5.88 | 0.31 | 10.93 | 24.00 | 27.91 | 21.27 | 1.36 | 1.20 | 1.17 | 1.08 |
| 975 | 6.28 | 6.41 | 6.04 | 0.37 | 12.10 | 21.90 | 25.33 | 20.26 | 1.49 | 1.23 | 1.20 | 1.08 |
| 1000 | 6.55 | 6.71 | 6.25 | 0.46 | 13.52 | 20.06 | 23.13 | 19.19 | 1.64 | 1.26 | 1.23 | 1.08 |

¹Total Loss = Insertion Loss + 4.8dB Splitter Loss

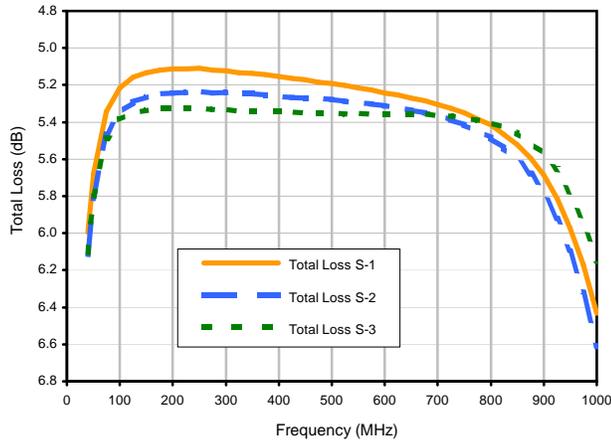


3 Way-0° Power Splitter/Combiner

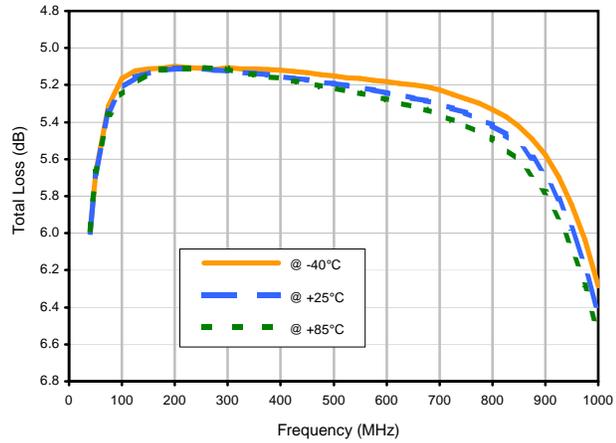
LRPS-3-850

Typical Performance Curves

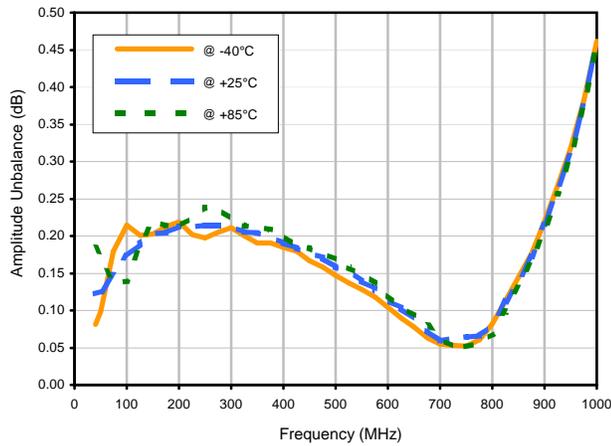
Total Loss



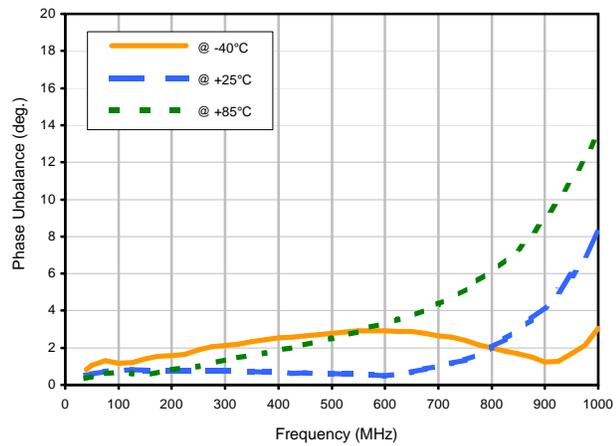
Total Loss S-1 vs. TEMPERATURE



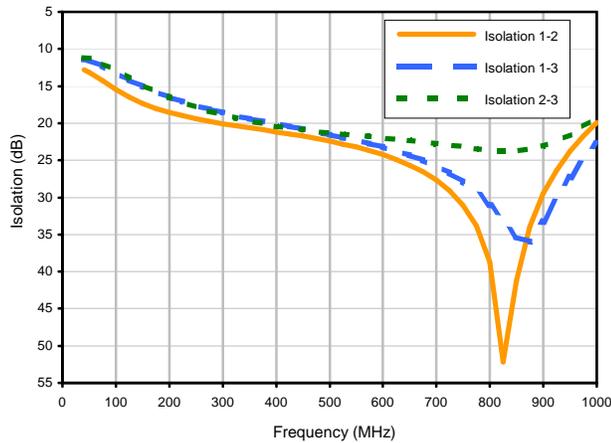
Amplitude Unbalance vs. TEMPERATURE



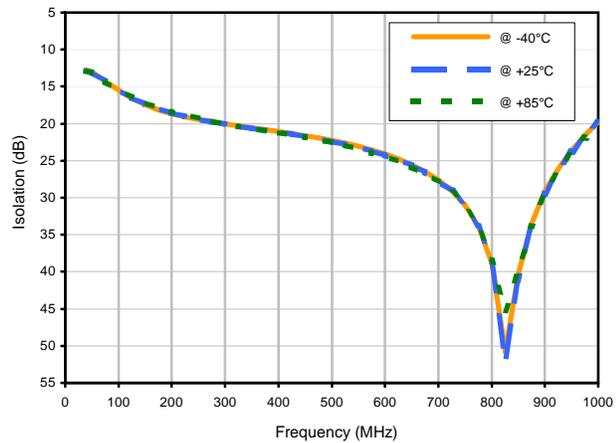
Phase Unbalance vs. TEMPERATURE



Isolation



Isolation 1-2 vs. TEMPERATURE



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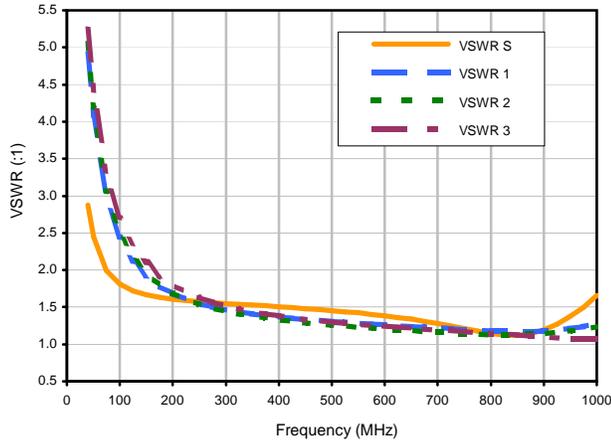
The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see



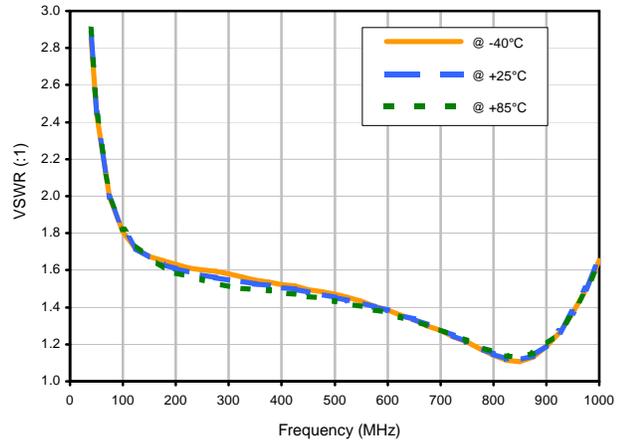
REV. X2
LRPS-3-850
100624
Page 1 of 2

Typical Performance Curves

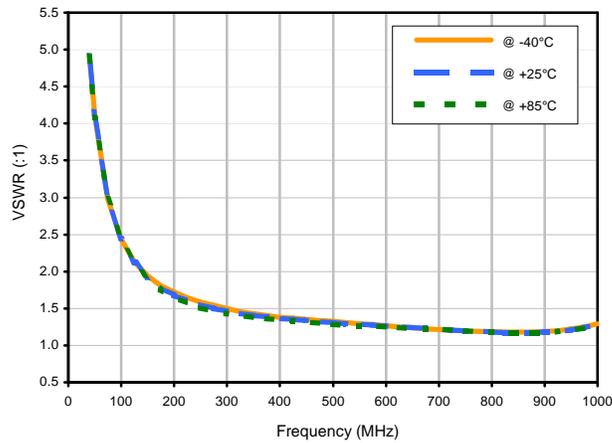
VSWR



VSWR SUM vs. TEMPERATURE



VSWR OUT1 vs. TEMPERATURE

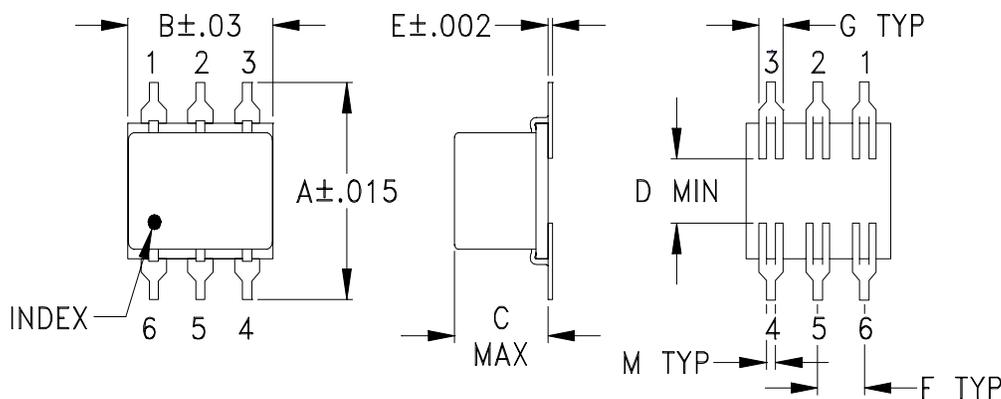


Case Style

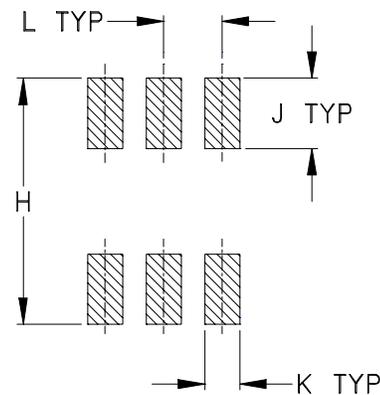
QQQ

QQQ130 (non-waterproof)
QQQ828 (washable)

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 | WT, GRAM |
|--------|-----------------|---------------|----------------|---------------|---------------|----------------|----------------|-----------------|----------------|----------------|----------------|---------------|----------|
| QQQ130 | .400 (10.16) | .31 (7.87) | .200 (5.08) | .10 (2.54) | .010 (.25) | .100 (2.54) | .050 (1.27) | .420 (10.67) | .120 (3.05) | .060 (1.52) | .100 (2.54) | .020 (.51) | .55 |
| QQQ828 | | | .050 (1.27) | | | | | | | | | | .20 |

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

Notes:

- Case material: Ceramic.
- Termination finish:
 - For RoHS Case Styles: Tin plate over Nickel plate.
 - For RoHS-5 Case Styles: Tin-Lead plate.



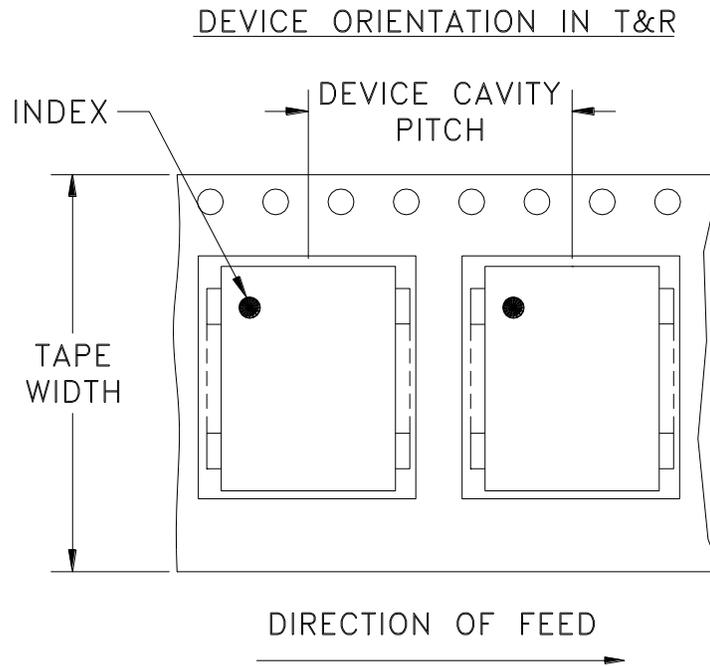
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| Tape Width, mm | Device Cavity Pitch, mm | Reel Size, inches | Devices per Reel |
|----------------|-------------------------|-------------------|------------------|
| 24 | 16 | 7 | 10,20,50,100 |
| | | 13 | 200,500 |

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.

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

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



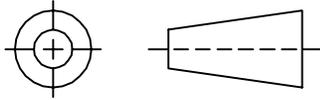
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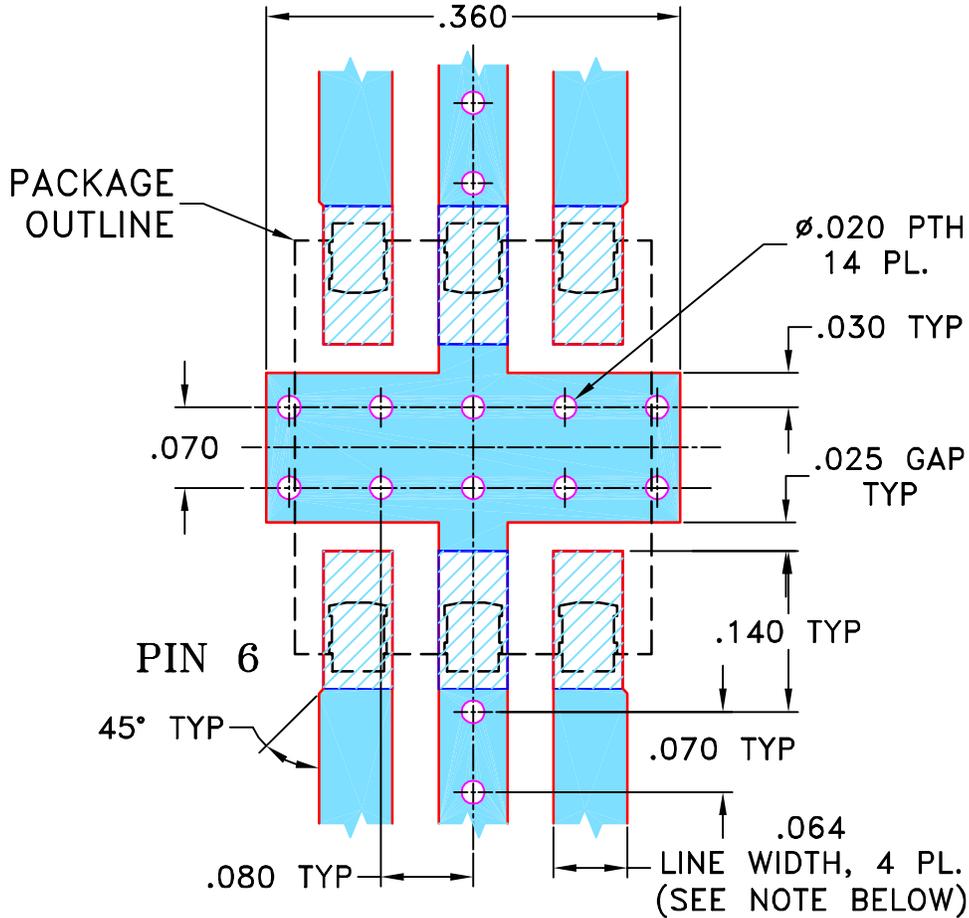
THIRD ANGLE PROJECTION



REVISIONS

| REV | ECN No. | DESCRIPTION | DATE | DR | AUTH |
|-----|---------|------------------------------------|----------|----|------|
| OR | M88792 | NEW RELEASE | 10/20/03 | GF | HY |
| A | M100924 | CHANGED ORIENTATION PIN 1 TO PIN 6 | 09/23/05 | GT | HY |
| B | M102713 | ADDED "...WITH SMOBC" | 01/12/06 | GF | IL |

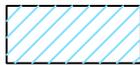
**SUGGESTED MOUNTING CONFIGURATION
FOR QQQ569 CASE STYLE, "ay/lr" PIN CONNECTION.**



- NOTE:**
- TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS $.030'' \pm .002''$; 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

UNLESS OTHERWISE SPECIFIED

INITIALS

DATE

DIMENSIONS ARE IN INCHES

DRAWN

GF

09/18/03

TOLERANCES ON:

CHECKED

IL

10/20/03

2 PL DECIMALS \pm

APPROVED

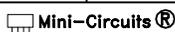
HY

10/20/03

3 PL DECIMALS \pm .005

ANGLES \pm 1°

FRACTIONS \pm



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SIZE

CODE IDENT

DRAWING NO:

REV:

A

15542

98-PL-140

B

FILE:

98PL140

SCALE:

6:1

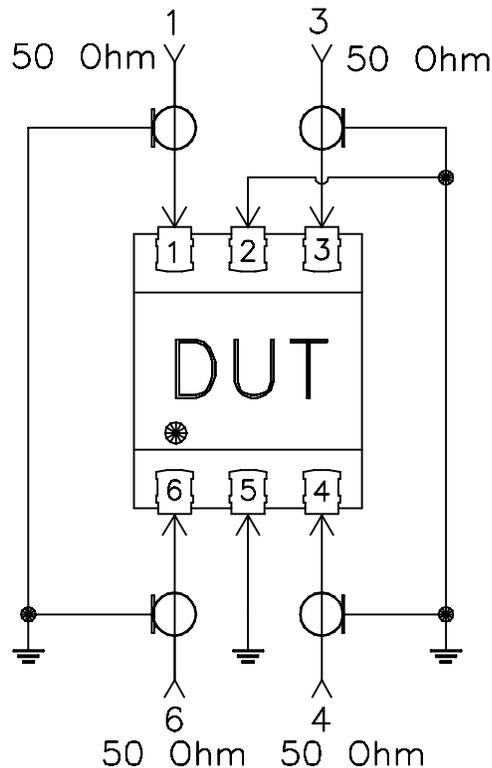
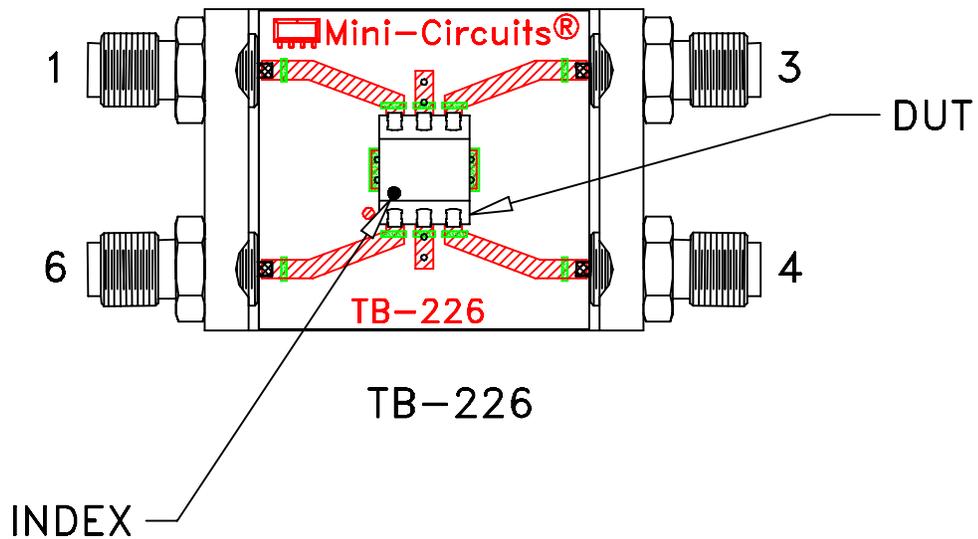
SHEET:

1 OF 1

ASHEETA1.DWG REV:A DATE:01/12/95

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=.030 inch.

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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 |