

Surface Mount **top hat™**
Power Splitter/Combiner

2 Way-0° 50Ω 5 to 2700 MHz

TCP-2-272+



CASE STYLE: DB1627
 PRICE: \$2.49 ea. QTY. (20)

+RoHS Compliant

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

| Available Tape and Reel at no extra cost | |
|--|-----------------------|
| Reel Size | Devices/Reel |
| 7" | 20, 50, 100, 200, 500 |
| 13" | 1000, 2000 |

Maximum Ratings

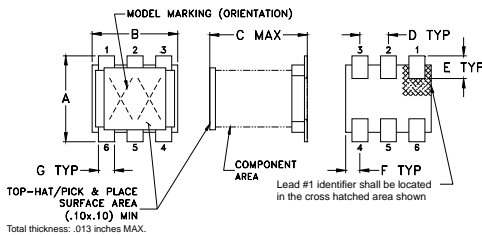
| | |
|-----------------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Power Input (as a splitter) | 0.5W max. |

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

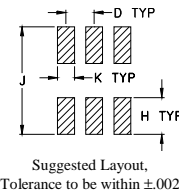
Pin Connections

| | |
|--------------------|-------|
| SUM PORT | 2,5,6 |
| PORT 1 | 3 |
| PORT 2 | 4 |
| GROUND | 1 |
| EXT. RESISTOR 475Ω | 3,4 |

Outline Drawing



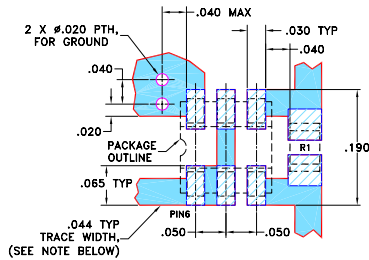
PCB Land Pattern



Outline Dimensions (inch/mm)

| | | | | | |
|------|------|------|------|------|-------|
| A | B | C | D | E | F |
| .160 | .150 | .160 | .050 | .040 | .025 |
| 4.06 | 3.81 | 4.06 | 1.27 | 1.02 | 0.64 |
| G | H | J | K | | wt |
| .028 | .065 | .190 | .030 | | grams |
| 0.71 | 1.65 | 4.83 | 0.76 | | 0.15 |

**Demo Board MCL P/N: TB-86
 Suggested PCB Layout (PL-008)**



RESISTOR R1: 475 ± 1% Ohm, 0805 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.

Features

- wideband, 5 to 2700 MHz
- low insertion, 0.9 dB typ.
- excellent amplitude unbalance, 0.3 dB typ.
- very good phase unbalance, 1.5 deg. typ.
- external resistor required
- aqueous washable
- leads for excellent solderability
- low cost

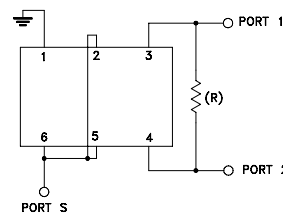
Applications

- cellular
- PCN
- GPS
- CATV
- communication systems

Electrical Specifications at 25°C

| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|-----------------------------|-----------------|------|------|------|--------|
| Frequency Range | | 5 | | 2700 | MHz |
| Insertion Loss Above 3.0 dB | 5-50 | — | 0.6 | 0.8 | |
| | 50-1350 | — | 0.9 | 1.1 | dB |
| | 1350-2700 | — | 1.4 | 2.0 | |
| Isolation | 5-50 | 15 | 20 | — | |
| | 50-1350 | 20 | 24 | — | dB |
| | 1350-2700 | 10 | 12 | — | |
| Phase Unbalance | 5-50 | — | 0.5 | 2.0 | |
| | 50-1350 | — | 2 | 4.0 | Degree |
| | 1350-2700 | — | 6 | 10.0 | |
| Amplitude Unbalance | 5-50 | — | 0.1 | 0.4 | |
| | 50-1350 | — | 0.3 | 0.6 | dB |
| | 1350-2700 | — | 0.9 | 1.3 | |
| VSWR (Port S) | 5-50 | — | 2.0 | 2.2 | |
| | 50-1350 | — | 2.0 | 2.2 | :1 |
| | 1350-2700 | — | 1.8 | 2.2 | |
| VSWR (Port 1-2) | 5-50 | — | 2.0 | 2.2 | |
| | 50-1350 | — | 2.0 | 2.2 | :1 |
| | 1350-2700 | — | 2.3 | 2.5 | |

Electrical Schematic



| MODEL | R (Ohm) |
|------------|---------|
| TCP-2-25 | 475 |
| TCP-2-33 | 200 |
| TCP-2-33W+ | 475 |
| TCP-2-272+ | 475 |

For detailed performance specs & shopping online see web site



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IFIRF MICROWAVE COMPONENTS

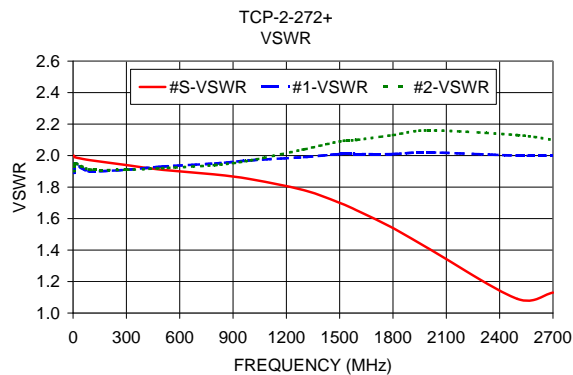
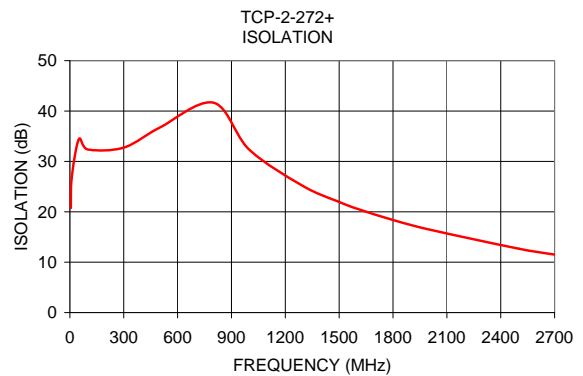
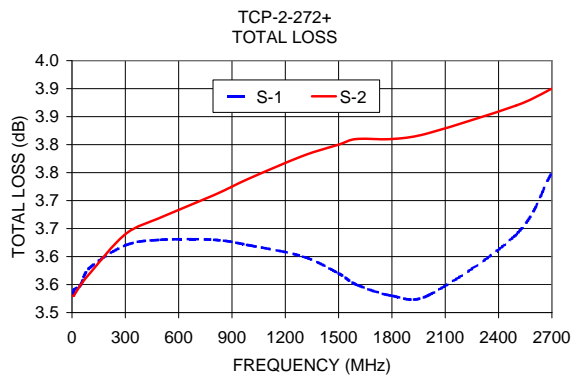
Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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.

REV. OR
 M132225
 TCP-2-272+
 ED-14384
 JC/CP/AM
 130109
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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 | | | | | | |
| 5.00 | 3.53 | 3.53 | 0.00 | 20.75 | 0.02 | 2.00 | 1.89 | 1.90 |
| 10.00 | 3.54 | 3.53 | 0.00 | 26.70 | 0.03 | 1.99 | 1.95 | 1.95 |
| 50.00 | 3.55 | 3.55 | 0.00 | 34.42 | 0.00 | 1.98 | 1.92 | 1.93 |
| 100.00 | 3.58 | 3.57 | 0.00 | 32.37 | 0.00 | 1.97 | 1.90 | 1.91 |
| 300.00 | 3.62 | 3.64 | 0.02 | 32.74 | 0.15 | 1.94 | 1.91 | 1.91 |
| 500.00 | 3.63 | 3.67 | 0.04 | 36.71 | 0.20 | 1.91 | 1.93 | 1.92 |
| 800.00 | 3.63 | 3.71 | 0.08 | 41.65 | 0.21 | 1.88 | 1.95 | 1.94 |
| 1000.00 | 3.62 | 3.74 | 0.12 | 32.30 | 0.22 | 1.85 | 1.97 | 1.97 |
| 1300.00 | 3.60 | 3.78 | 0.18 | 25.10 | 0.46 | 1.78 | 1.99 | 2.04 |
| 1500.00 | 3.57 | 3.80 | 0.23 | 21.96 | 0.45 | 1.70 | 2.01 | 2.09 |
| 1600.00 | 3.55 | 3.81 | 0.26 | 20.61 | 0.54 | 1.65 | 2.01 | 2.10 |
| 1800.00 | 3.53 | 3.81 | 0.28 | 18.38 | 0.52 | 1.54 | 2.01 | 2.13 |
| 2000.00 | 3.53 | 3.82 | 0.30 | 16.50 | 0.66 | 1.41 | 2.02 | 2.16 |
| 2500.00 | 3.64 | 3.87 | 0.23 | 12.68 | 1.47 | 1.09 | 2.00 | 2.13 |
| 2700.00 | 3.75 | 3.90 | 0.15 | 11.51 | 2.40 | 1.13 | 2.00 | 2.10 |

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



For detailed performance specs & shopping online see web site

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