



SURFACE MOUNT

Power Splitter/Combiner

SBTC-2-10-75+

Mini-Circuits

2 Way-0° 75Ω 10 to 1000 MHz

FEATURES

- Low Insertion Loss, 0.8 dB Typ.
- High Isolation
- Excellent Amplitude Unbalance, 0.15 dB Typ.
- Very Good Phase Unbalance, 1.0 deg. Typ.
- Temperature Stable LTCC Base
- Small Size
- Low Cost
- Aqueous Washable

For Model with Leads see [SBTC-2-10-75L+](#)



Generic photo used for illustration purposes only

CASE STYLE: AT790

+RoHS Compliant

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

APPLICATIONS

- UHF/VHF Receivers/Transmitters
- Cellular

ELECTRICAL SPECIFICATIONS AT +25°C

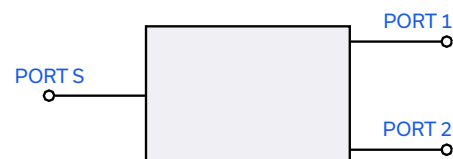
| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|-----------------------------|-----------------|------|------|------|--------|
| Frequency Range | | 10 | | 1000 | MHz |
| Insertion Loss Above 3.0 dB | 10-100 | | 0.7 | 1.2 | dB |
| | 100-500 | | 0.6 | 1.2 | |
| | 500-1000 | | 0.7 | 1.4 | |
| Isolation | 10-100 | 20 | 35 | | dB |
| | 100-500 | 20 | 28 | | |
| | 500-1000 | 17 | 21 | | |
| Phase Unbalance | 10-100 | | | 3 | Degree |
| | 100-500 | | | 3 | |
| | 500-1000 | | | 5 | |
| Amplitude Unbalance | 10-100 | | | 0.7 | dB |
| | 100-500 | | | 0.6 | |
| | 500-1000 | | | 0.6 | |

ABSOLUTE MAXIMUM RATINGS

| Parameter | Ratings |
|-----------------------------|-----------------|
| Operating Temperature | -40°C to +85°C |
| Storage Temperature | -55°C to +100°C |
| Power Input (as a Splitter) | 0.5 W max. |
| Internal Dissipation | 0.125 W max |

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

ELECTRICAL SCHEMATIC





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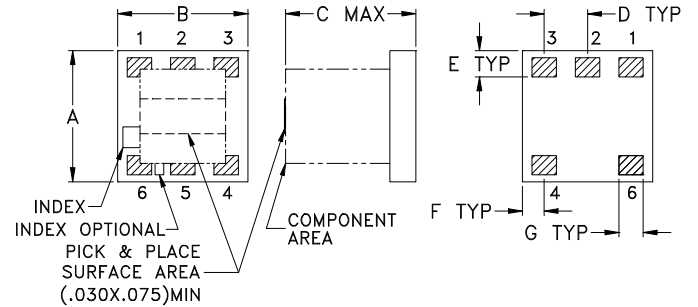


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PIN CONNECTIONS

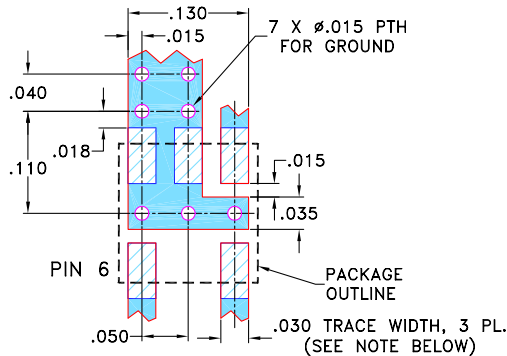
| | |
|----------|-----|
| SUM PORT | 6 |
| PORT 1 | 3 |
| PORT 2 | 4 |
| GROUND | 1,2 |
| NOT USED | 5 |

OUTLINE DRAWING



PRODUCT MARKING: N/A

DEMO BOARD MCL P/N: TB-277+
SUGGESTED PCB LAYOUT (PL-153)

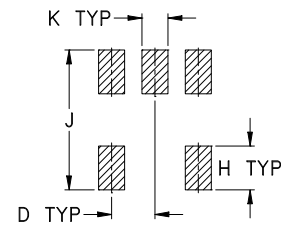


NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS $0.030" \pm 0.002"$; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

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

PCB Land Pattern



Suggested Layout,
Tolerance to be within ± 0.002

OUTLINE DIMENSIONS (Inches mm)

| A | B | C | D | E | F | G | H | J | K | wt grams |
|------|------|------|------|------|------|------|------|------|------|----------|
| .150 | .150 | .150 | .050 | .030 | .025 | .028 | .050 | .160 | .030 | |
| 3.81 | 3.81 | 3.81 | 1.27 | 0.76 | 0.64 | 0.71 | 1.27 | 4.06 | 0.76 | 0.10 |

TAPE & REEL INFORMATION: F15





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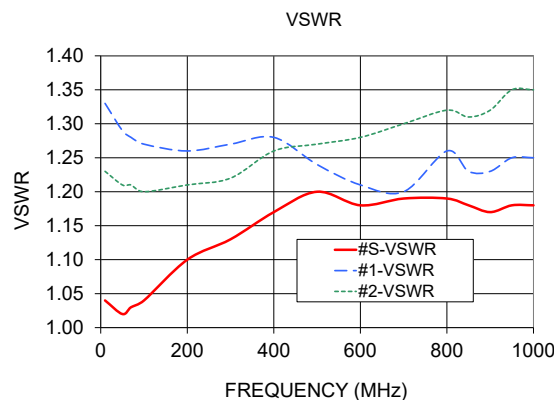
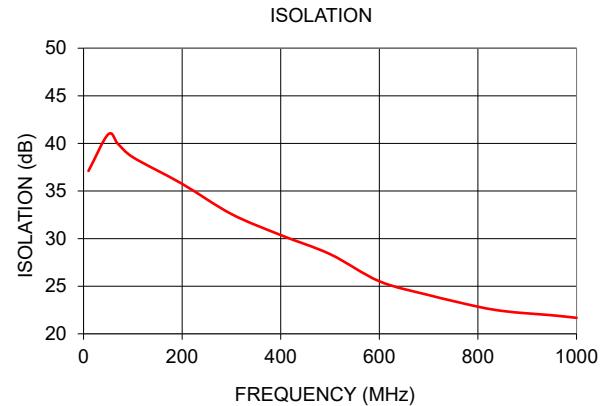
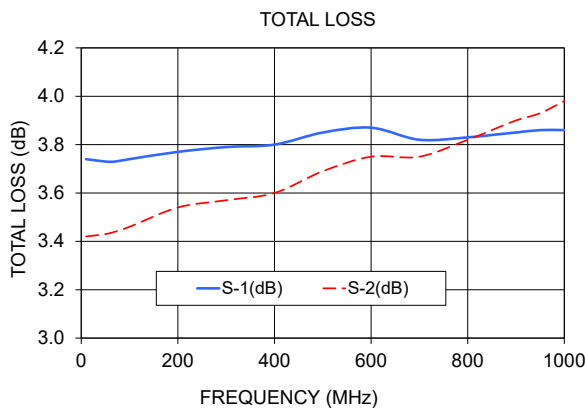
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TYPICAL PERFORMANCE DATA

| Frequency (MHz) | Total Loss ¹ (dB) | | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR (:1) | | |
|-----------------|------------------------------|------|--------------------------|----------------|------------------------|-----------|------|------|
| | S-1 | S-2 | | | | S | 1 | 2 |
| 10 | 3.74 | 3.42 | 0.31 | 37.11 | 0.66 | 1.04 | 1.33 | 1.23 |
| 50 | 3.73 | 3.43 | 0.3 | 40.95 | 0.14 | 1.02 | 1.29 | 1.21 |
| 70 | 3.73 | 3.44 | 0.29 | 39.94 | 0.14 | 1.03 | 1.28 | 1.21 |
| 100 | 3.74 | 3.46 | 0.29 | 38.55 | 0.13 | 1.04 | 1.27 | 1.2 |
| 200 | 3.77 | 3.54 | 0.22 | 35.75 | 0.09 | 1.1 | 1.26 | 1.21 |
| 300 | 3.79 | 3.57 | 0.22 | 32.58 | 0.54 | 1.13 | 1.27 | 1.22 |
| 400 | 3.8 | 3.6 | 0.2 | 30.37 | 0.6 | 1.17 | 1.28 | 1.26 |
| 500 | 3.85 | 3.69 | 0.16 | 28.37 | 0.64 | 1.2 | 1.24 | 1.27 |
| 600 | 3.87 | 3.75 | 0.12 | 25.52 | 0.74 | 1.18 | 1.21 | 1.28 |
| 700 | 3.82 | 3.75 | 0.07 | 24.07 | 0.75 | 1.19 | 1.2 | 1.3 |
| 800 | 3.83 | 3.82 | 0.03 | 22.85 | 0.77 | 1.19 | 1.26 | 1.32 |
| 850 | 3.84 | 3.86 | 0.03 | 22.4 | 0.73 | 1.18 | 1.23 | 1.31 |
| 900 | 3.85 | 3.9 | 0.06 | 22.15 | 0.69 | 1.17 | 1.23 | 1.32 |
| 950 | 3.86 | 3.93 | 0.08 | 21.95 | 0.64 | 1.18 | 1.25 | 1.35 |
| 1000 | 3.86 | 3.98 | 0.11 | 21.68 | 0.58 | 1.18 | 1.25 | 1.35 |

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



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-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/terms/viewterm.html

