

Power Splitter/Combiner

SCP-3-1+

3 Way-0° 50Ω 1 to 300 MHz

Maximum Ratings

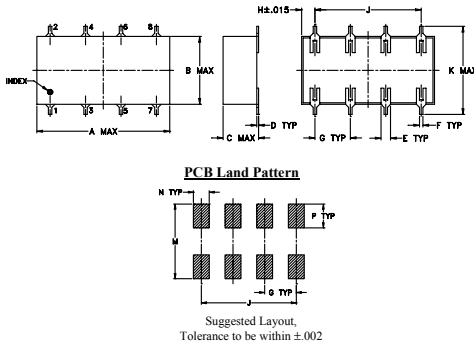
| | |
|-----------------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Power Input (as a splitter) | 1W max. |
| Internal Dissipation | 0.375W max. |

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

Pin Connections

| | |
|----------|---------|
| SUM PORT | 6 |
| PORT 1 | 1 |
| PORT 2 | 2 |
| PORT 3 | 5 |
| GROUND | 3,4,7,8 |

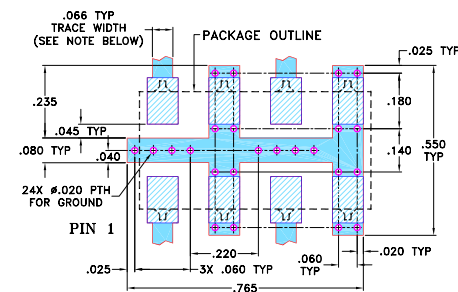
Outline Drawing



Outline Dimensions (inch/mm)

| | | | | | | |
|-------|-------|-------|-------|------|------|-------|
| A | B | C | D | E | F | G |
| .75 | .38 | .20 | .010 | .050 | .020 | .200 |
| 19.05 | 9.65 | 5.08 | 0.25 | 1.27 | 0.51 | 5.08 |
| H | J | K | M | N | P | wt |
| .075 | .600 | .450 | .470 | .100 | .150 | grams |
| 1.91 | 15.24 | 11.43 | 11.94 | 2.54 | 3.81 | 1.6 |

Demo Board MCL P/N: TB-51 Suggested PCB Layout (PL-062)



- NOTES: 1. 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.
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

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/MCLStore/terms.jsp

Features

- low insertion loss, 0.4 dB typ.
- good isolation, 25 dB typ.
- excellent output VSWR, 1.1:1 typ.

Applications

- VHF/UHF receivers/transmitters
- communications system



Generic photo used for illustration purposes only

CASE STYLE: YY101

+RoHS Compliant

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

Electrical Specifications

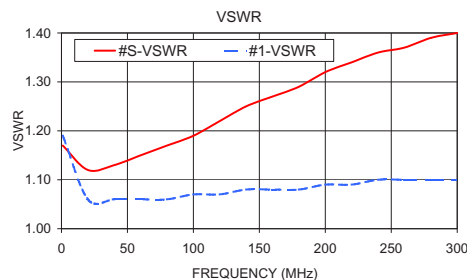
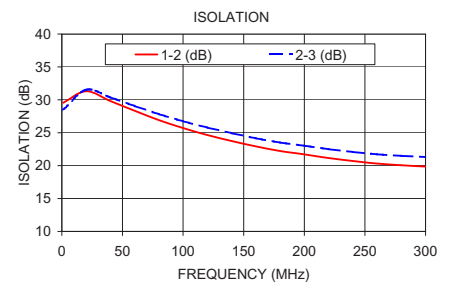
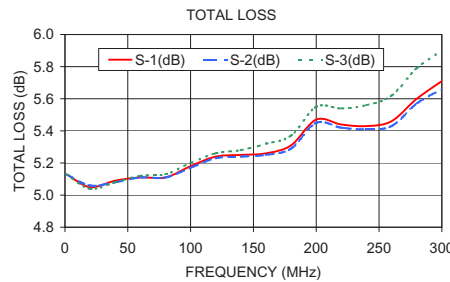
| FREQ. RANGE (MHz) | ISOLATION (dB) | | | INSERTION LOSS (dB) ABOVE 4.8 dB | | | PHASE UNBALANCE (Degrees) | | | AMPLITUDE UNBALANCE (dB) | | | | | | | | |
|-------------------|----------------|------|-----------|----------------------------------|-----------|-----------|---------------------------|------|------|--------------------------|------|------|------|---|---|-----|------|-----|
| | L | M | U | L | M | U | L | M | U | L | M | U | | | | | | |
| f_L - f_U | Typ. | Min. | Typ. Min. | Typ. Min. | Typ. Max. | Typ. Max. | Typ. Max. | Max. | Max. | Max. | Max. | Max. | Max. | | | | | |
| 1-300 | 30 | 25 | 25 | 20 | 20 | 15 | 0.3 | 0.6 | 0.4 | 0.8 | 0.7 | 1.5 | 1 | 2 | 4 | 0.1 | 0.15 | 0.5 |

L = low range [f_L to $10 f_L$] M = mid range [$10 f_L$ to $f_U/2$] U = upper range [$f_U/2$ to f_U]

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 | 2-3 | | | | | |
| 1.00 | 5.13 | 5.13 | 5.13 | 0.01 | 29.54 | 28.48 | 0.02 | 1.17 | 1.19 | 1.19 | 1.20 |
| 20.00 | 5.05 | 5.06 | 5.04 | 0.02 | 31.30 | 31.53 | 0.11 | 1.12 | 1.06 | 1.06 | 1.06 |
| 40.00 | 5.09 | 5.08 | 5.08 | 0.01 | 29.82 | 30.37 | 0.19 | 1.13 | 1.06 | 1.06 | 1.06 |
| 60.00 | 5.11 | 5.11 | 5.12 | 0.00 | 28.34 | 29.07 | 0.33 | 1.15 | 1.06 | 1.06 | 1.06 |
| 80.00 | 5.11 | 5.11 | 5.13 | 0.02 | 26.92 | 27.83 | 0.44 | 1.17 | 1.06 | 1.06 | 1.05 |
| 100.00 | 5.18 | 5.17 | 5.20 | 0.03 | 25.71 | 26.74 | 0.56 | 1.19 | 1.07 | 1.06 | 1.05 |
| 120.00 | 5.24 | 5.23 | 5.26 | 0.03 | 24.65 | 25.78 | 0.67 | 1.22 | 1.07 | 1.06 | 1.05 |
| 140.00 | 5.25 | 5.24 | 5.28 | 0.04 | 23.74 | 24.93 | 0.75 | 1.25 | 1.08 | 1.07 | 1.05 |
| 160.00 | 5.26 | 5.25 | 5.32 | 0.07 | 22.93 | 24.16 | 0.80 | 1.27 | 1.08 | 1.07 | 1.05 |
| 180.00 | 5.31 | 5.29 | 5.37 | 0.08 | 22.22 | 23.51 | 0.86 | 1.29 | 1.08 | 1.07 | 1.05 |
| 200.00 | 5.47 | 5.45 | 5.55 | 0.10 | 21.71 | 23.02 | 1.00 | 1.32 | 1.09 | 1.08 | 1.05 |
| 220.00 | 5.44 | 5.42 | 5.54 | 0.12 | 21.15 | 22.50 | 1.04 | 1.34 | 1.09 | 1.08 | 1.06 |
| 240.00 | 5.43 | 5.41 | 5.56 | 0.16 | 20.71 | 22.08 | 1.09 | 1.36 | 1.10 | 1.08 | 1.06 |
| 260.00 | 5.46 | 5.43 | 5.62 | 0.19 | 20.32 | 21.72 | 1.23 | 1.37 | 1.10 | 1.09 | 1.06 |
| 280.00 | 5.60 | 5.57 | 5.79 | 0.22 | 20.06 | 21.49 | 1.26 | 1.39 | 1.10 | 1.09 | 1.06 |
| 300.00 | 5.71 | 5.66 | 5.90 | 0.24 | 19.86 | 21.31 | 1.27 | 1.40 | 1.10 | 1.09 | 1.06 |

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



electrical schematic

