

# Surface Mount Power Splitter/Combiner

## SCP-2-1A+ SCP-2-1A

2 Way-0° 50Ω

1 to 550 MHz



CASE STYLE: YY101  
PRICE: \$10.45 ea. QTY(10-49)

### Maximum Ratings

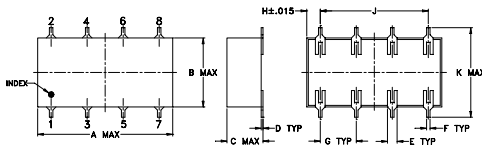
|                             |                |
|-----------------------------|----------------|
| Operating Temperature       | -40°C to 85°C  |
| Storage Temperature         | -55°C to 100°C |
| Power Input (as a splitter) | 1W max.        |
| Internal Dissipation        | 0.125W max.    |

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

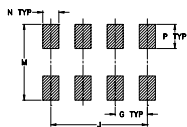
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern

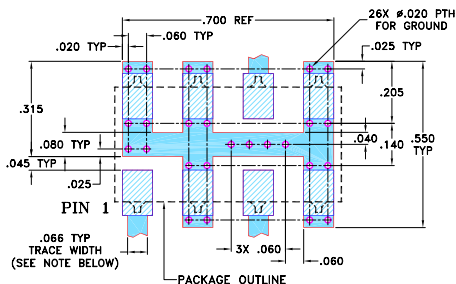


Suggested Layout,  
Tolerance to be within ±.002

### 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-50+ Suggested PCB Layout (PL-060)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B 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.  
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### Features

- wideband, 1 to 550 MHz
- low insertion loss, 0.3 dB typ.
- good isolation, 25 dB typ.
- good amplitude unbalance, 0.05 dB typ.

### Applications

- VHF/UHF
- communications receivers & transmitters
- instrumentation

+ RoHS compliant in accordance with EU Directive (2002/95/EC)

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

### Electrical Specifications

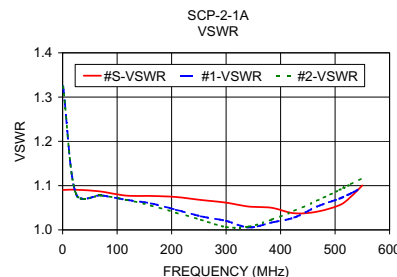
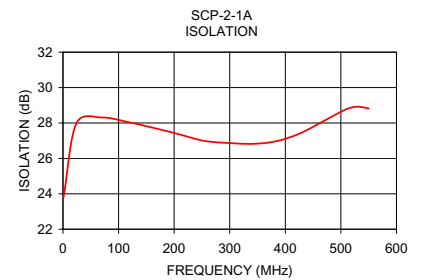
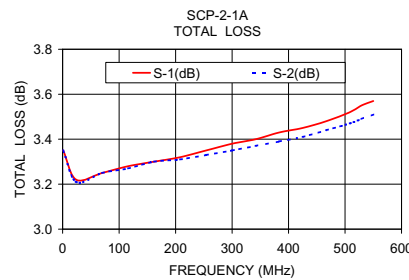
| FREQ. RANGE (MHz)              | ISOLATION (dB) |           |           | INSERTION LOSS (dB) ABOVE 3.0 dB |           |           | PHASE UNBALANCE (Degrees) |      |      | AMPLITUDE UNBALANCE (dB) |      |      |     |     |     |      |     |     |
|--------------------------------|----------------|-----------|-----------|----------------------------------|-----------|-----------|---------------------------|------|------|--------------------------|------|------|-----|-----|-----|------|-----|-----|
|                                | L              | M         | U         | L                                | M         | U         | L                         | M    | U    | L                        | M    | U    |     |     |     |      |     |     |
| f <sub>L</sub> -f <sub>U</sub> | Typ. Min.      | Typ. Min. | Typ. Min. | Typ. Max.                        | Typ. Max. | Typ. Max. | Max.                      | Max. | Max. | Max.                     | Max. | Max. |     |     |     |      |     |     |
| 1-550                          | 25             | 20        | 25        | 20                               | 25        | 20        | 0.3                       | 0.6  | 0.3  | 0.6                      | 0.7  | 1.3  | 2.0 | 2.0 | 3.0 | 0.15 | 0.2 | 0.4 |

L = low range [f<sub>L</sub> to 10 f<sub>L</sub>] M = mid range [10 f<sub>L</sub> to f<sub>U</sub>/2] U = upper range [f<sub>U</sub>/2 to f<sub>U</sub>]

### Typical Performance Data

| Frequency (MHz) | Total Loss <sup>1</sup> (dB) | Total Loss <sup>1</sup> (dB) S-1 | Total Loss <sup>1</sup> (dB) S-2 | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg) | VSWR S | VSWR 1 | VSWR 2 |
|-----------------|------------------------------|----------------------------------|----------------------------------|--------------------------|----------------|-----------------------|--------|--------|--------|
| 1.00            | 3.35                         | 3.35                             | 3.35                             | 0.00                     | 23.78          | 0.02                  | 1.09   | 1.32   | 1.32   |
| 24.00           | 3.22                         | 3.21                             | 3.21                             | 0.00                     | 27.98          | 0.00                  | 1.09   | 1.08   | 1.08   |
| 70.00           | 3.25                         | 3.25                             | 3.25                             | 0.00                     | 28.31          | 0.05                  | 1.09   | 1.08   | 1.08   |
| 116.00          | 3.28                         | 3.27                             | 3.27                             | 0.01                     | 28.06          | 0.07                  | 1.08   | 1.07   | 1.07   |
| 162.00          | 3.30                         | 3.30                             | 3.30                             | 0.01                     | 27.73          | 0.11                  | 1.08   | 1.06   | 1.05   |
| 208.00          | 3.32                         | 3.31                             | 3.31                             | 0.01                     | 27.37          | 0.14                  | 1.07   | 1.05   | 1.04   |
| 254.00          | 3.35                         | 3.33                             | 3.33                             | 0.02                     | 26.99          | 0.16                  | 1.07   | 1.03   | 1.02   |
| 300.00          | 3.38                         | 3.35                             | 3.35                             | 0.02                     | 26.87          | 0.17                  | 1.06   | 1.02   | 1.01   |
| 341.67          | 3.40                         | 3.37                             | 3.37                             | 0.03                     | 26.82          | 0.19                  | 1.05   | 1.01   | 1.01   |
| 383.33          | 3.43                         | 3.39                             | 3.39                             | 0.03                     | 26.97          | 0.19                  | 1.05   | 1.02   | 1.02   |
| 425.00          | 3.45                         | 3.41                             | 3.41                             | 0.04                     | 27.39          | 0.20                  | 1.04   | 1.03   | 1.04   |
| 466.67          | 3.48                         | 3.44                             | 3.44                             | 0.05                     | 28.07          | 0.21                  | 1.04   | 1.05   | 1.07   |
| 508.33          | 3.52                         | 3.47                             | 3.47                             | 0.05                     | 28.76          | 0.18                  | 1.06   | 1.07   | 1.09   |
| 529.17          | 3.55                         | 3.49                             | 3.49                             | 0.06                     | 28.92          | 0.17                  | 1.08   | 1.08   | 1.10   |
| 550.00          | 3.57                         | 3.51                             | 3.51                             | 0.06                     | 28.82          | 0.18                  | 1.10   | 1.10   | 1.12   |

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



### electrical schematic



For detailed performance specs & shipping online see web site

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