



**THE DATASHEET OF  
RPS-2-30+**



# Surface Mount Power Splitter/Combiner

2 Way-0° 50Ω 10 to 3000 MHz

RPS-2-30+



Generic photo used for illustration purposes only  
CASE STYLE: TT1413

**+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"                                       | 10, 20, 50, 100, 200 |
| 13"                                      | 500                  |

## Maximum Ratings

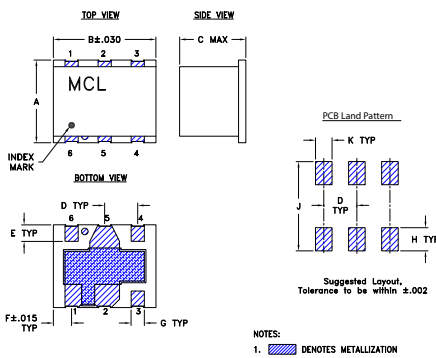
|                             |                |
|-----------------------------|----------------|
| Operating Temperature       | -40°C to 85°C  |
| Storage Temperature         | -55°C to 100°C |
| Power Input (as a splitter) | 0.5W max.      |
| Internal Dissipation        | 0.125W max.    |

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

## Pin Connections

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

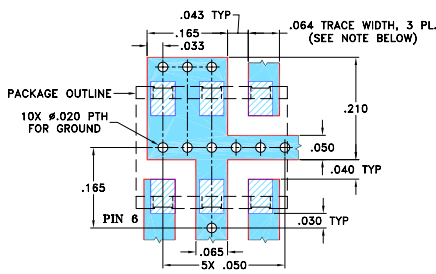
## Outline Drawing



## Outline Dimensions (inch/mm)

| A    | B    | C    | D    | E    | F    | G    | H    | J    | K    | wt.   |
|------|------|------|------|------|------|------|------|------|------|-------|
| .250 | .310 | .20  | .100 | .050 | .055 | .040 | .070 | .270 | .050 | grams |
| 6.35 | 7.87 | 5.08 | 2.54 | 1.27 | 1.40 | 1.02 | 1.78 | 6.86 | 1.27 | 0.5   |

Demo Board MCL P/N: TB-155  
Suggested PCB Layout (PL-110)



- NOTES:  
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" ± 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

### 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.  
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## Features

- wideband, 10 to 3000 MHz
- good isolation, 22 dB typ.
- small size

## Applications

- instrumentation
- catv
- cellular
- PCS
- GSM

## Electrical Specifications

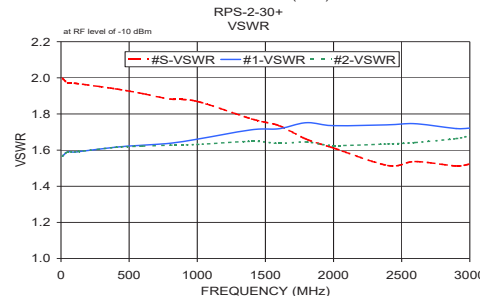
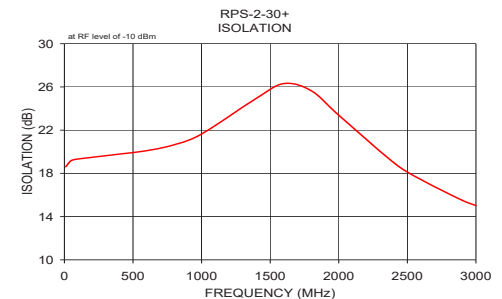
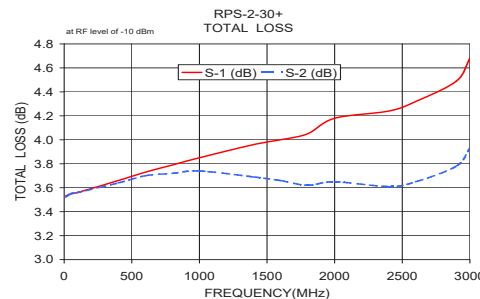
| FREQ. RANGE (MHz) | ISOLATION (dB) |     |          | INSERTION LOSS (dB) ABOVE 3.0 dB |      |     | PHASE UNBALANCE (Degrees) |      |      | AMPLITUDE UNBALANCE (dB) |      |      |     |     |     |     |     |     |
|-------------------|----------------|-----|----------|----------------------------------|------|-----|---------------------------|------|------|--------------------------|------|------|-----|-----|-----|-----|-----|-----|
|                   | L              | M   | U        | L                                | M    | U   | L                         | M    | U    | L                        | M    | U    |     |     |     |     |     |     |
| $f_L$ - $f_U$     | Typ.           | Min | Typ. Min | Typ. Min                         | Typ. | Min | Max.                      | Max. | Max. | Max.                     | Max. | Max. |     |     |     |     |     |     |
| 10-3000           | 19             | 12  | 22       | 15                               | 15   | 9   | 0.6                       | 1.0  | 0.9  | 1.5                      | 1.2  | 2.5  | 2.0 | 4.0 | 8.0 | 0.3 | 0.6 | 1.2 |

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

## Typical Performance Data

| Frequency (MHz) | Total Loss <sup>1</sup> (dB) |      | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|-----------------|------------------------------|------|--------------------------|----------------|------------------------|--------|--------|--------|
|                 | S-1                          | S-2  |                          |                |                        |        |        |        |
| 10.00           | 3.53                         | 3.52 | 0.01                     | 18.61          | 0.01                   | 2.00   | 1.57   | 1.57   |
| 50.00           | 3.55                         | 3.55 | 0.01                     | 19.19          | 0.04                   | 1.97   | 1.59   | 1.59   |
| 100.00          | 3.56                         | 3.56 | 0.00                     | 19.33          | 0.06                   | 1.97   | 1.59   | 1.59   |
| 400.00          | 3.66                         | 3.64 | 0.02                     | 19.78          | 0.09                   | 1.94   | 1.62   | 1.62   |
| 600.00          | 3.73                         | 3.70 | 0.03                     | 20.10          | 0.14                   | 1.91   | 1.63   | 1.62   |
| 800.00          | 3.79                         | 3.72 | 0.07                     | 20.65          | 0.09                   | 1.88   | 1.64   | 1.63   |
| 1000.00         | 3.85                         | 3.74 | 0.11                     | 21.64          | 0.02                   | 1.87   | 1.66   | 1.63   |
| 1400.00         | 3.96                         | 3.69 | 0.27                     | 24.95          | 0.59                   | 1.77   | 1.71   | 1.65   |
| 1600.00         | 4.00                         | 3.66 | 0.34                     | 26.31          | 0.88                   | 1.74   | 1.72   | 1.64   |
| 1800.00         | 4.05                         | 3.62 | 0.43                     | 25.64          | 1.27                   | 1.66   | 1.75   | 1.64   |
| 2000.00         | 4.18                         | 3.65 | 0.52                     | 23.38          | 1.59                   | 1.61   | 1.74   | 1.63   |
| 2400.00         | 4.24                         | 3.61 | 0.63                     | 19.00          | 2.43                   | 1.51   | 1.74   | 1.63   |
| 2600.00         | 4.32                         | 3.65 | 0.67                     | 17.42          | 2.83                   | 1.54   | 1.75   | 1.64   |
| 2900.00         | 4.49                         | 3.78 | 0.71                     | 15.51          | 3.65                   | 1.51   | 1.72   | 1.66   |
| 3000.00         | 4.68                         | 3.93 | 0.75                     | 15.02          | 4.13                   | 1.52   | 1.72   | 1.68   |

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





## electrical schematic



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