

2 Way-0°

50Ω

10 to 1000 MHz

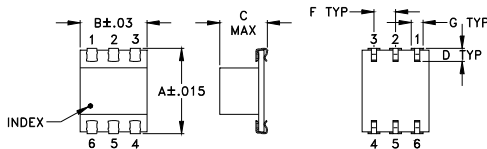
## Maximum Ratings

|                                                                 |                |
|-----------------------------------------------------------------|----------------|
| Operating Temperature                                           | -40°C to 85°C  |
| Storage Temperature                                             | -55°C to 100°C |
| Power Input (as a splitter)                                     | 1W max.        |
| Internal Dissipation                                            | 0.125W max.    |
| Permanent damage may occur if any of these limits are exceeded. |                |

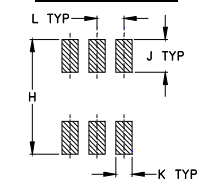
## Pin Connections

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

## Outline Drawing



## PCB Land Pattern

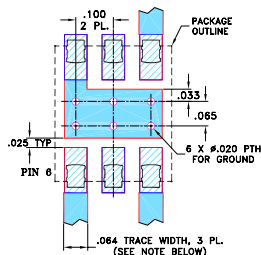


Suggested Layout,  
Tolerance to be within ±0.02

## Outline Dimensions (inch/mm)

|       |      |      |      |    |      |       |
|-------|------|------|------|----|------|-------|
| A     | B    | C    | D    | E  | F    | G     |
| .390  | .31  | .225 | .060 | -- | .100 | .045  |
| 9.91  | 7.87 | 5.72 | 1.52 | -- | 2.54 | 1.14  |
| H     | J    | K    | L    | M  |      | wt    |
| .420  | .120 | .060 | .100 | -- |      | grams |
| 10.67 | 3.05 | 1.52 | 2.54 | -- |      | 0.50  |

Demo Board MCL P/N: TB-94  
Suggested PCB Layout (PL-058)



- 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.  
3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)  
4. 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

- low insertion loss, 0.4 dB typ.
- high isolation, 23 dB typ.
- aqueous washable
- J-leads for strain relief and excellent solderability

## Applications

- cellular
- instrumentation
- communications systems

## Electrical Specifications

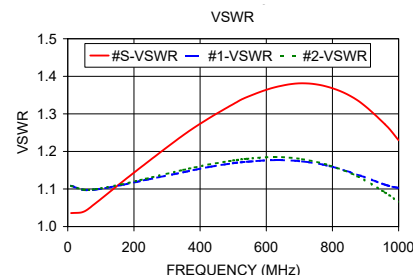
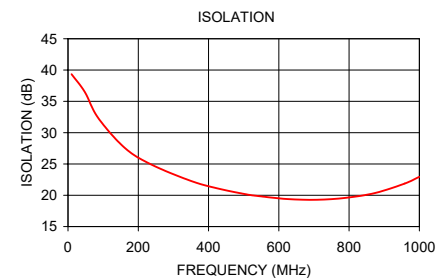
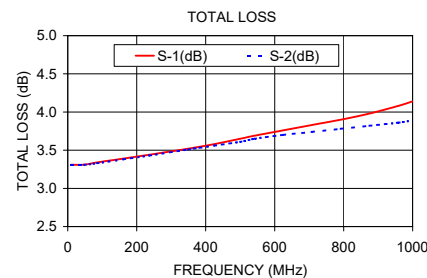
| FREQ. RANGE (MHz) | ISOLATION (dB) |      |      |      |      |      | INSERTION LOSS (dB) ABOVE 3.0 dB |      |      |      |      |      | PHASE UNBALANCE (Degrees) |      |      | AMPLITUDE UNBALANCE (dB) |      |      |
|-------------------|----------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|---------------------------|------|------|--------------------------|------|------|
|                   | L              |      | M    |      | U    |      | L                                |      | M    |      | U    |      | L                         |      | M    |                          | U    |      |
| $f_L$ - $f_U$     | Typ.           | Min. | Typ. | Min. | Typ. | Min. | Typ.                             | Max. | Typ. | Max. | Typ. | Max. | Max.                      | Max. | Max. | Max.                     | Max. | Max. |
| 10-1000           | 25             | 20   | 23   | 16   | 19   | 14   | 0.3                              | 0.5  | 0.4  | 0.9  | 0.8  | 1.5  | 1.0                       | 3.0  | 5.0  | 0.15                     | 0.2  | 0.4  |

L = 10-100 MHz M = 100-500 MHz U = 500-1000 MHz

## 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           | 3.31                         | 3.31 | 0.00                     | 39.33          | 0.01                   | 1.04   | 1.11   | 1.11   |
| 47.69           | 3.31                         | 3.31 | 0.00                     | 36.50          | 0.16                   | 1.04   | 1.10   | 1.10   |
| 85.38           | 3.34                         | 3.33 | 0.00                     | 32.39          | 0.27                   | 1.06   | 1.10   | 1.10   |
| 160.77          | 3.39                         | 3.38 | 0.00                     | 27.60          | 0.51                   | 1.12   | 1.11   | 1.11   |
| 236.15          | 3.44                         | 3.43 | 0.01                     | 24.93          | 0.73                   | 1.17   | 1.12   | 1.13   |
| 349.23          | 3.52                         | 3.51 | 0.01                     | 22.30          | 1.04                   | 1.24   | 1.14   | 1.15   |
| 424.62          | 3.58                         | 3.56 | 0.02                     | 21.10          | 1.22                   | 1.29   | 1.16   | 1.16   |
| 500.00          | 3.65                         | 3.61 | 0.03                     | 20.23          | 1.39                   | 1.33   | 1.17   | 1.18   |
| 541.67          | 3.69                         | 3.65 | 0.04                     | 19.87          | 1.47                   | 1.34   | 1.17   | 1.18   |
| 625.00          | 3.76                         | 3.70 | 0.06                     | 19.39          | 1.62                   | 1.37   | 1.18   | 1.19   |
| 708.33          | 3.83                         | 3.74 | 0.09                     | 19.28          | 1.76                   | 1.38   | 1.17   | 1.18   |
| 791.67          | 3.90                         | 3.78 | 0.12                     | 19.59          | 1.82                   | 1.37   | 1.16   | 1.16   |
| 875.00          | 3.98                         | 3.82 | 0.16                     | 20.38          | 1.86                   | 1.34   | 1.14   | 1.13   |
| 958.33          | 4.08                         | 3.86 | 0.22                     | 21.87          | 1.88                   | 1.27   | 1.11   | 1.09   |
| 1000.00         | 4.14                         | 3.89 | 0.25                     | 22.95          | 1.88                   | 1.23   | 1.10   | 1.07   |

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



## electrical schematic



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