

Surface Mount

# Power Splitter/Combiner

2 Way-0° 50Ω 1750 to 3000 MHz

BP2U1+



CASE STYLE: XX211

PRICE: \$0.96 ea. QTY. (20)

**+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" 20, 50, 100, 200, 500, 1000

## Maximum Ratings

Operating Temperature -40°C to 85°C

Storage Temperature -65°C to 150°C

Power Input (as a splitter) 1.5W max.

Internal Dissipation 0.75W max.

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

## Pin Connections

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

## Features

- wide bandwidth 1750-3000 MHz
- good isolation, 20 dB typ.
- good output VSWR, 1.40:1 typ.
- excellent power handling, 1.5W
- low profile
- aqueous washable

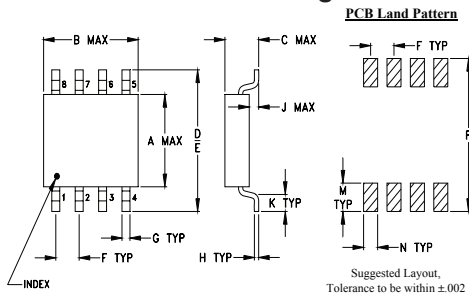
## Applications

- blue tooth
- IEEE 802.11b, g

## Electrical Specifications

| FREQ. RANGE (MHz) | ISOLATION (dB) | INSERTION LOSS (dB) ABOVE 3.0 dB | PHASE UNBALANCE (Degrees) | AMPLITUDE UNBALANCE (dB) | VSWR (:1)                     |
|-------------------|----------------|----------------------------------|---------------------------|--------------------------|-------------------------------|
| $f_L$ - $f_U$     | Typ. Min.      | Typ. Max.                        | Max.                      | Max.                     | S-Port Typ. Output-Ports Typ. |
| 1750-3000         | 20 10          | 0.5 1.6                          | 4.0                       | 0.4                      | 1.60 1.40                     |

## Outline Drawing



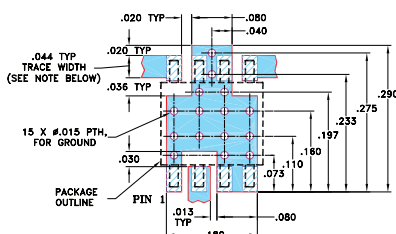
## Outline Dimensions (inch mm)

| A    | B    | C    | D    | E    | F    | G    |
|------|------|------|------|------|------|------|
| .163 | .210 | .077 | .250 | .220 | .050 | .017 |
| 4.14 | 5.33 | 1.96 | 6.35 | 5.59 | 1.27 | 0.43 |

| H    | J    | K    | M    | N    | P    | wt    |
|------|------|------|------|------|------|-------|
| .009 | .025 | .030 | .050 | .030 | .270 | grams |
| 0.23 | 0.64 | 0.76 | 1.27 | 0.76 | 6.86 | 0.10  |

## Demo Board MCL P/N: TB-37 Suggested PCB Layout (PL-053)



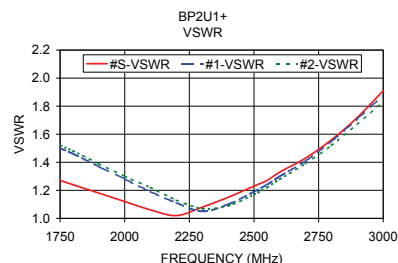
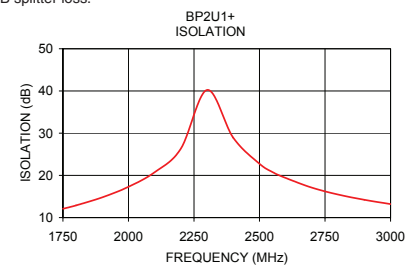
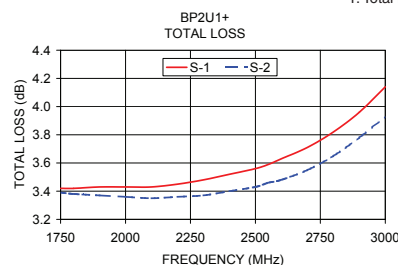
- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

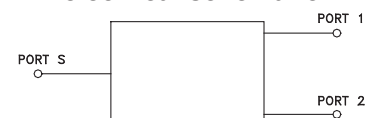
## Typical Performance Data at 25°C

| 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                      |                          |                |                        |        |        |        |
| 1750.00         | 3.42 3.39                    | 0.04                     | 12.10          | 0.48                   | 1.27   | 1.50   | 1.52   |
| 1800.00         | 3.42 3.38                    | 0.05                     | 12.89          | 0.49                   | 1.24   | 1.46   | 1.48   |
| 1900.00         | 3.43 3.37                    | 0.06                     | 14.80          | 0.43                   | 1.18   | 1.37   | 1.39   |
| 2000.00         | 3.43 3.36                    | 0.07                     | 17.29          | 0.45                   | 1.12   | 1.28   | 1.30   |
| 2100.00         | 3.43 3.35                    | 0.08                     | 20.75          | 0.41                   | 1.06   | 1.19   | 1.22   |
| 2200.00         | 3.45 3.36                    | 0.09                     | 26.34          | 0.40                   | 1.02   | 1.11   | 1.13   |
| 2300.00         | 3.48 3.37                    | 0.10                     | 40.24          | 0.32                   | 1.08   | 1.05   | 1.07   |
| 2400.00         | 3.52 3.40                    | 0.12                     | 28.92          | 0.32                   | 1.15   | 1.10   | 1.09   |
| 2500.00         | 3.56 3.43                    | 0.13                     | 22.75          | 0.23                   | 1.23   | 1.19   | 1.17   |
| 2550.00         | 3.59 3.46                    | 0.13                     | 20.76          | 0.14                   | 1.27   | 1.24   | 1.22   |
| 2600.00         | 3.63 3.48                    | 0.14                     | 19.38          | 0.16                   | 1.33   | 1.30   | 1.28   |
| 2700.00         | 3.71 3.55                    | 0.16                     | 17.10          | 0.01                   | 1.43   | 1.41   | 1.39   |
| 2800.00         | 3.82 3.65                    | 0.18                     | 15.46          | 0.01                   | 1.56   | 1.55   | 1.52   |
| 2900.00         | 3.96 3.78                    | 0.18                     | 14.21          | 0.27                   | 1.72   | 1.71   | 1.67   |
| 3000.00         | 4.14 3.93                    | 0.21                     | 13.20          | 0.39                   | 1.91   | 1.88   | 1.83   |

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



## electrical schematic



## ESD Rating

Human Body Model (HBM): Class 1A (250 v to <500 v) in accordance with ANSI/ESD STM 5.1 - 2001 Machine Model (MM): Class M1 (< 100 v) in accordance with ANSI/ESD STM 5.2 - 1999 (pass 50V)

## 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-Circuits' applicable established test performance criteria and measurement instructions.
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