

Power Splitter/Combiner

WP4G+

4 Way-0° 50Ω 1420 to 1660 MHz

Maximum Ratings

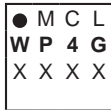
| | |
|-----------------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -65°C to 150°C |
| Power Input (as a splitter) | 1.5W max. |
| Internal Dissipation | 0.375W max. |

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

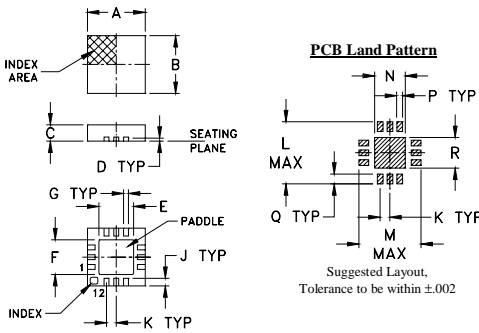
Pad Connections

| | |
|----------|------------------------|
| SUM PORT | 2 |
| PORT 1 | 12 |
| PORT 2 | 10 |
| PORT 3 | 6 |
| PORT 4 | 4 |
| GROUND | 1,3,5,7,8,9,11, paddle |

Product Marking



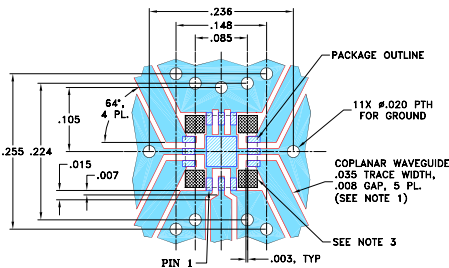
Outline Drawing



Outline Dimensions (inch/mm)

| | | | | | | | | |
|------|------|------|------|------|------|------|-----|-------|
| A | B | C | D | E | F | G | H | J |
| .118 | .118 | .035 | .008 | .057 | .057 | .009 | --- | .016 |
| 3.00 | 3.00 | 0.89 | 0.20 | 1.45 | 1.45 | 0.23 | --- | 0.41 |
| K | L | M | N | P | Q | R | | wt |
| .020 | .127 | .127 | .049 | .010 | .020 | .049 | | grams |
| 0.51 | 3.23 | 3.23 | 1.24 | 0.25 | 0.51 | 1.24 | | 0.02 |

Demo Board MCL P/N: TB-395+ Suggested PCB Layout (PL-259)



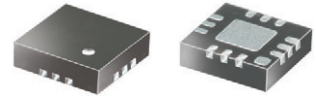
- NOTES:
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
 - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
 - SIGNAL TRACES ARE NOT ALLOWED INSIDE HATCHED AREAS (APPROX. .030" X .030") AT 4 PLACES AS SHOWN.
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 - DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- excellent isolation, 28 dB typ.
- excellent phase unbalance 1 deg. typ.
- excellent amplitude unbalance, 0.25 dB typ.
- small size, .118" x .118" x .035"
- high ESD level
- aqueous washable

Applications

- GPS



CASE STYLE: DQ1225
PRICE: \$1.49 ea. QTY. (25)

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

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.

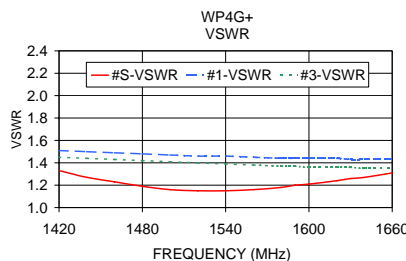
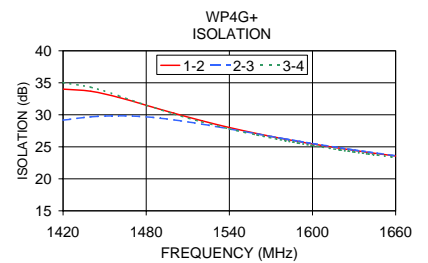
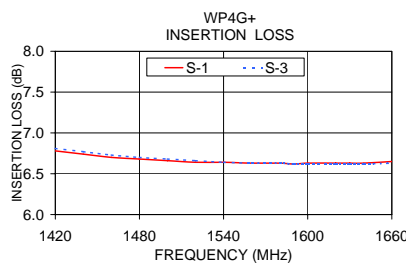
Electrical Specifications

| FREQ. RANGE (MHz) | ISOLATION (dB) | | INSERTION LOSS* (dB) ABOVE 6.0 dB | | PHASE UNBALANCE (Degrees) | AMPLITUDE UNBALANCE (dB) | VSWR (:1) Typ. | |
|-------------------|----------------|------|-----------------------------------|------|---------------------------|--------------------------|----------------|---------------|
| | Typ. | Min. | Typ. | Max. | Max. | Max. | Port S | Ports 1,2,3,4 |
| 1420-1660 | 28 | 19 | 0.7 | 1.4 | 4 | 0.5 | 1.25 | 1.4 |

* Includes fixture loss, 0.12 dB typ.

Typical Performance Data

| Freq. (MHz) | Insertion Loss (dB) | | | | Amp. Unbal. (dB) | Isolation (dB) | | | Phase Unbal. (deg.) | VSWR S | VSWR 1 | VSWR 2 | VSWR 3 | VSWR 4 |
|-------------|---------------------|------|------|------|------------------|----------------|-------|-------|---------------------|--------|--------|--------|--------|--------|
| | S-1 | S-2 | S-3 | S-4 | | 1-2 | 2-3 | 3-4 | | | | | | |
| 1420.00 | 6.78 | 6.88 | 6.81 | 6.70 | 0.18 | 34.01 | 29.17 | 35.04 | 0.97 | 1.33 | 1.51 | 1.47 | 1.45 | 1.46 |
| 1440.00 | 6.74 | 6.84 | 6.77 | 6.66 | 0.17 | 33.68 | 29.68 | 34.31 | 0.91 | 1.27 | 1.50 | 1.46 | 1.44 | 1.45 |
| 1460.00 | 6.70 | 6.80 | 6.73 | 6.63 | 0.17 | 32.72 | 29.85 | 32.99 | 0.85 | 1.23 | 1.49 | 1.45 | 1.43 | 1.45 |
| 1480.00 | 6.68 | 6.77 | 6.70 | 6.61 | 0.16 | 31.49 | 29.68 | 31.52 | 0.86 | 1.19 | 1.48 | 1.44 | 1.42 | 1.44 |
| 1500.00 | 6.66 | 6.75 | 6.68 | 6.59 | 0.16 | 30.25 | 29.21 | 30.14 | 0.87 | 1.16 | 1.47 | 1.43 | 1.41 | 1.43 |
| 1520.00 | 6.64 | 6.73 | 6.66 | 6.57 | 0.16 | 29.08 | 28.55 | 28.90 | 0.88 | 1.15 | 1.46 | 1.42 | 1.40 | 1.42 |
| 1540.00 | 6.64 | 6.71 | 6.64 | 6.56 | 0.15 | 28.01 | 27.80 | 27.80 | 0.89 | 1.15 | 1.46 | 1.41 | 1.39 | 1.42 |
| 1560.00 | 6.63 | 6.70 | 6.63 | 6.55 | 0.15 | 27.06 | 27.02 | 26.83 | 0.92 | 1.16 | 1.45 | 1.40 | 1.38 | 1.41 |
| 1580.00 | 6.63 | 6.70 | 6.63 | 6.55 | 0.14 | 26.21 | 26.25 | 25.97 | 0.93 | 1.18 | 1.44 | 1.39 | 1.37 | 1.41 |
| 1590.00 | 6.62 | 6.69 | 6.62 | 6.55 | 0.14 | 25.82 | 25.89 | 25.57 | 0.93 | 1.20 | 1.44 | 1.39 | 1.37 | 1.40 |
| 1600.00 | 6.63 | 6.69 | 6.62 | 6.55 | 0.14 | 25.45 | 25.52 | 25.20 | 0.95 | 1.21 | 1.44 | 1.39 | 1.36 | 1.40 |
| 1620.00 | 6.63 | 6.69 | 6.62 | 6.56 | 0.14 | 24.76 | 24.84 | 24.51 | 1.00 | 1.24 | 1.44 | 1.38 | 1.36 | 1.40 |
| 1630.00 | 6.63 | 6.69 | 6.62 | 6.56 | 0.13 | 24.44 | 24.51 | 24.19 | 1.04 | 1.26 | 1.43 | 1.38 | 1.36 | 1.39 |
| 1640.00 | 6.63 | 6.69 | 6.62 | 6.56 | 0.13 | 24.13 | 24.20 | 23.89 | 1.08 | 1.27 | 1.43 | 1.38 | 1.35 | 1.39 |
| 1660.00 | 6.65 | 6.70 | 6.63 | 6.57 | 0.13 | 23.57 | 23.61 | 23.33 | 1.19 | 1.31 | 1.43 | 1.37 | 1.35 | 1.39 |



electrical schematic



ESD Rating

Human Body Model (HBM): Class 1A (250v to < 500v) in accordance with ANSI/ESD STM 5.1 - 2001
Machine Model (MM): Class M2 (100V to < 250V) in accordance with ANSI/ESD STM 5.2 - 1999



For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at minicircuits.com

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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.

Rev. A
M112849
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