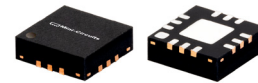


MMIC Surface Mount Power Splitter/Combiner

WP4F1+

4 Way-0° 50Ω 4750 to 6200 MHz



Generic photo used for illustration purposes only
CASE STYLE: DQ1225

Maximum Ratings

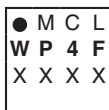
| | |
|-----------------------------|----------------|
| Operating Temperature | -40°C to 95°C |
| Storage Temperature | -65°C to 150°C |
| Power Input (as a splitter) | 1.5W max. |
| Internal Dissipation | 0.375W max. |

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

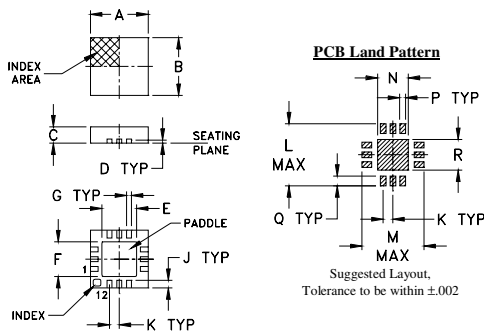
Pad Connections

| | |
|----------|------------------------|
| 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



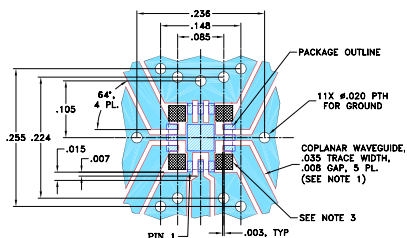
Outline Drawing



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

Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuit's 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-Circuit's website at www.minicircuits.com/WCLStore/terms.jsp

Features

- excellent isolation, 28 dB typ.
- good phase unbalance 3 deg. typ.
- good amplitude unbalance, 0.15 dB typ.
- small size, .118" x .118" x .035"
- high ESD level
- aqueous washable

Applications

- WLAN
- WIMAX
- ISM
- radar

Electrical Specifications

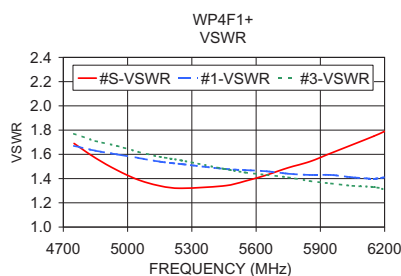
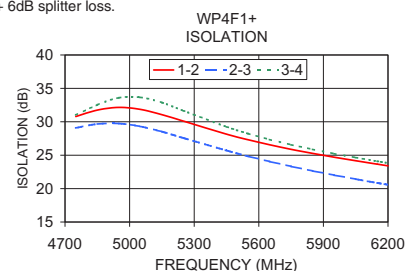
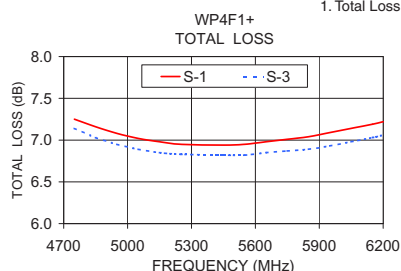
| FREQ. RANGE (MHz) | ISOLATION (dB) | | INSERTION LOSS* (dB) ABOVE 6.0 dB | | PHASE UNBALANCE (Degrees) | AMPLITUDE UNBALANCE (dB) | VSWR (:1) Typ. | |
|-------------------|----------------|------|-----------------------------------|------|---------------------------|--------------------------|----------------|---------------|
| | Typ. | Min. | Typ. | Max. | | | Port S | Ports 1,2,3,4 |
| 4750-6200 | 28 | 16 | 1.0 | 2.0 | 9 | 0.6 | 1.5 | 1.5 |

* Includes fixture loss, 0.3 dB typ.

Typical Performance Data

| Freq. (MHz) | Total Loss ¹ (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 | | | | | | |
| 4750.00 | 7.25 | 7.16 | 7.14 | 7.23 | 0.11 | 30.79 | 29.08 | 31.01 | 2.02 | 1.69 | 1.67 | 1.73 | 1.77 | 1.62 |
| 4850.00 | 7.16 | 7.05 | 7.03 | 7.13 | 0.12 | 31.75 | 29.67 | 32.54 | 1.76 | 1.57 | 1.63 | 1.68 | 1.71 | 1.59 |
| 4950.00 | 7.08 | 6.97 | 6.95 | 7.06 | 0.13 | 32.15 | 29.74 | 33.59 | 1.77 | 1.47 | 1.60 | 1.64 | 1.67 | 1.56 |
| 5050.00 | 7.02 | 6.90 | 6.89 | 7.00 | 0.13 | 31.86 | 29.31 | 33.66 | 1.83 | 1.39 | 1.57 | 1.59 | 1.62 | 1.53 |
| 5150.00 | 6.98 | 6.86 | 6.85 | 6.96 | 0.13 | 31.06 | 28.52 | 32.87 | 1.87 | 1.34 | 1.54 | 1.55 | 1.58 | 1.51 |
| 5250.00 | 6.95 | 6.83 | 6.83 | 6.93 | 0.12 | 30.10 | 27.57 | 31.66 | 1.92 | 1.32 | 1.52 | 1.52 | 1.55 | 1.49 |
| 5450.00 | 6.94 | 6.81 | 6.82 | 6.91 | 0.13 | 28.15 | 25.70 | 29.25 | 2.02 | 1.34 | 1.48 | 1.47 | 1.48 | 1.45 |
| 5550.00 | 6.95 | 6.82 | 6.82 | 6.93 | 0.13 | 27.31 | 24.84 | 28.24 | 2.04 | 1.38 | 1.47 | 1.44 | 1.45 | 1.45 |
| 5650.00 | 6.98 | 6.84 | 6.85 | 6.95 | 0.13 | 26.56 | 24.05 | 27.35 | 2.14 | 1.43 | 1.46 | 1.42 | 1.43 | 1.44 |
| 5750.00 | 7.01 | 6.88 | 6.87 | 6.98 | 0.13 | 25.87 | 23.32 | 26.56 | 2.28 | 1.49 | 1.44 | 1.40 | 1.41 | 1.42 |
| 5850.00 | 7.04 | 6.92 | 6.89 | 7.02 | 0.15 | 25.27 | 22.64 | 25.87 | 2.54 | 1.54 | 1.43 | 1.37 | 1.38 | 1.42 |
| 5950.00 | 7.09 | 6.97 | 6.93 | 7.07 | 0.16 | 24.70 | 22.01 | 25.23 | 2.84 | 1.61 | 1.43 | 1.36 | 1.36 | 1.42 |
| 6050.00 | 7.14 | 7.03 | 6.98 | 7.12 | 0.16 | 24.17 | 21.42 | 24.65 | 3.08 | 1.68 | 1.41 | 1.33 | 1.34 | 1.41 |
| 6150.00 | 7.19 | 7.10 | 7.03 | 7.18 | 0.16 | 23.66 | 20.85 | 24.10 | 3.34 | 1.75 | 1.40 | 1.32 | 1.33 | 1.40 |
| 6200.00 | 7.22 | 7.12 | 7.06 | 7.20 | 0.16 | 23.41 | 20.58 | 23.82 | 3.43 | 1.79 | 1.41 | 1.31 | 1.31 | 1.40 |

1. Total Loss = Insertion Loss + 6dB splitter loss.



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

