



MMIC SURFACE MOUNT

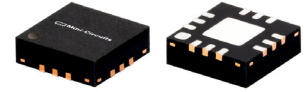
Power Splitter/Combiner

WP4A+

4 Way-0° 50Ω 5100 to 6500 MHz

FEATURES

- Excellent isolation, 25 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



Generic photo used for illustration purposes only

CASE STYLE: DQ1225

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our website for methodologies and qualifications

APPLICATIONS

- WLAN
- WIMAX
- ISM
- Radar
- Satellite up-link

ELECTRICAL SPECIFICATIONS AT 25°C

| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Units |
|--------------------------------|-----------------|------|------|------|-------|
| Frequency Range | | 5100 | | 6500 | MHz |
| Insertion Loss* (above 6.0 dB) | 5100-6500 | — | 0.9 | 2.0 | dB |
| Isolation | 5100-6500 | 15 | 25 | — | dB |
| Amplitude Unbalance | 5100-6500 | — | — | 0.5 | dB |
| Phase Unbalance | 5100-6500 | — | — | 8 | deg. |
| VSWR (Port S) | 5100-6500 | — | 1.5 | — | :1 |
| VSWR (Ports 1,2,3,4) | 5100-6500 | — | 1.6 | — | :1 |

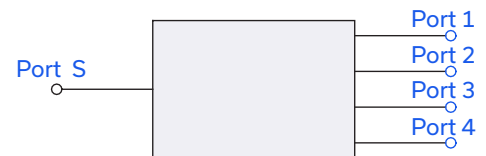
* Includes fixture loss, 0.3 dB typ.

MAXIMUM RATINGS

| Parameter | 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.

ELECTRICAL SCHEMATIC



REV. D
ECO-015507
WP4A+
MCL NY
230404

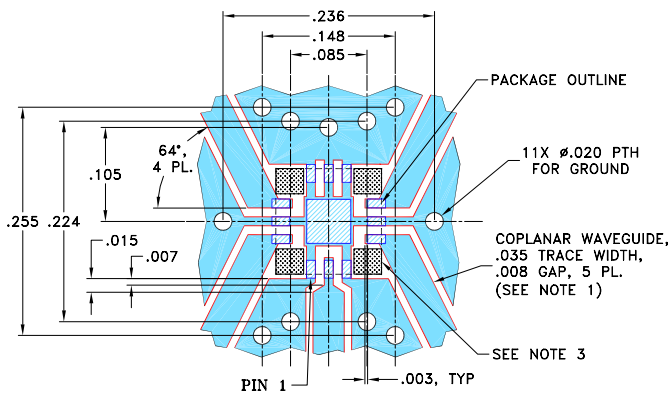




PAD CONNECTIONS

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

DEMO BOARD MCL P/N: TB-395+ SUGGESTED PCB LAYOUT (PL-259)

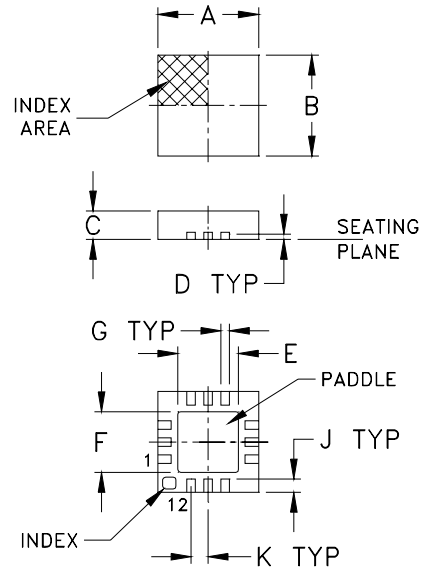


NOTES:

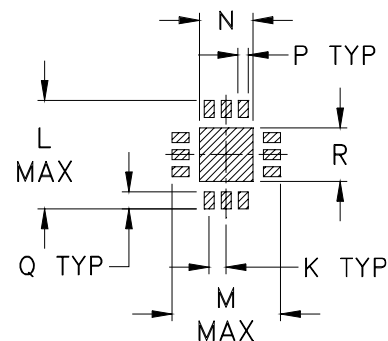
1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
3. SIGNAL TRACES ARE NOT ALLOWED INSIDE HATCHED AREAS (APPROX. .030 X .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

OUTLINE DRAWING

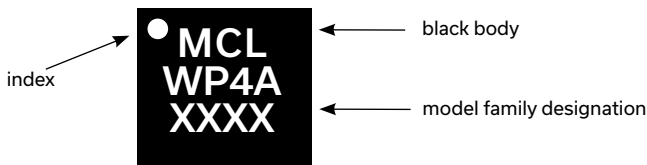


PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

PRODUCT MARKING



Marking may contain other features or characters for internal lot control

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 |

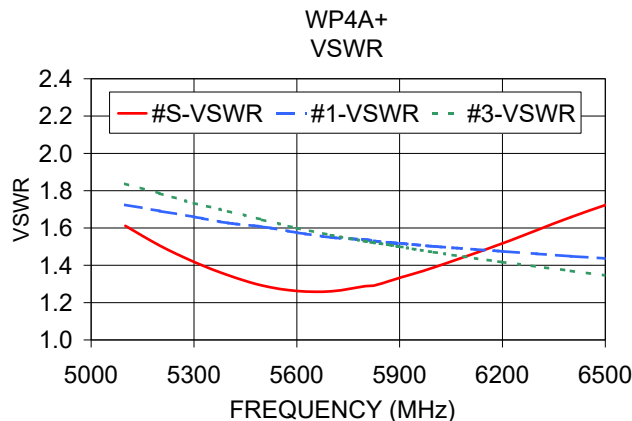
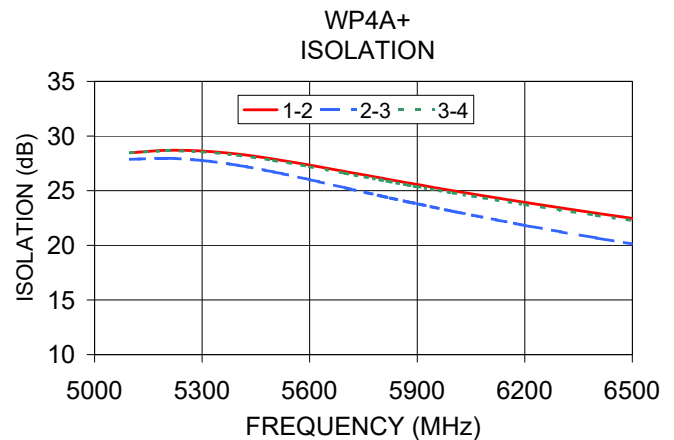
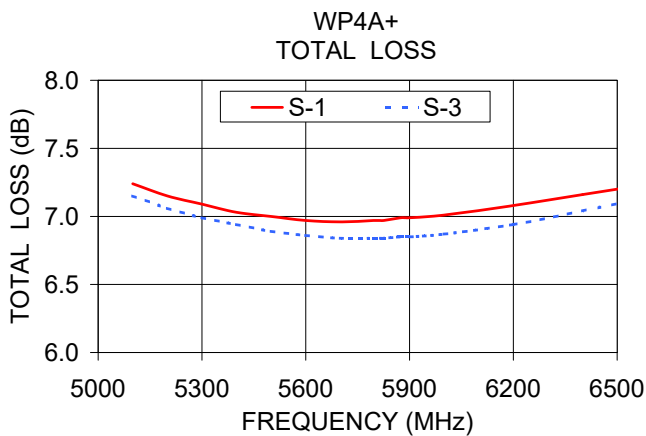
TAPE & REEL INFORMATION: F66



TYPICAL PERFORMANCE DATA AND CHARTS

| Frequency (MHz) | Total Loss ¹ (dB) | | | | Amplitude Unbalance (dB) | Isolation (dB) | | | Phase Unbalance (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 | | | | | | |
| 5100.00 | 7.24 | 7.16 | 7.15 | 7.22 | 0.09 | 28.47 | 27.87 | 28.48 | 4.01 | 1.61 | 1.72 | 1.81 | 1.84 | 1.75 |
| 5200.00 | 7.15 | 7.08 | 7.06 | 7.13 | 0.09 | 28.69 | 27.96 | 28.64 | 3.84 | 1.51 | 1.69 | 1.76 | 1.78 | 1.72 |
| 5300.00 | 7.09 | 7.00 | 6.99 | 7.07 | 0.09 | 28.63 | 27.76 | 28.55 | 3.65 | 1.42 | 1.66 | 1.71 | 1.73 | 1.69 |
| 5400.00 | 7.03 | 6.94 | 6.94 | 7.02 | 0.09 | 28.35 | 27.32 | 28.23 | 3.40 | 1.35 | 1.63 | 1.67 | 1.69 | 1.66 |
| 5500.00 | 7.00 | 6.90 | 6.89 | 6.98 | 0.10 | 27.89 | 26.71 | 27.76 | 3.17 | 1.29 | 1.61 | 1.63 | 1.64 | 1.63 |
| 5600.00 | 6.97 | 6.88 | 6.86 | 6.95 | 0.11 | 27.34 | 26.01 | 27.19 | 2.96 | 1.26 | 1.58 | 1.59 | 1.60 | 1.60 |
| 5700.00 | 6.96 | 6.87 | 6.84 | 6.94 | 0.12 | 26.75 | 25.25 | 26.57 | 2.71 | 1.26 | 1.55 | 1.55 | 1.56 | 1.58 |
| 5800.00 | 6.97 | 6.87 | 6.84 | 6.96 | 0.13 | 26.16 | 24.51 | 25.97 | 2.53 | 1.29 | 1.54 | 1.52 | 1.53 | 1.57 |
| 5825.00 | 6.97 | 6.87 | 6.84 | 6.95 | 0.13 | 26.00 | 24.33 | 25.81 | 2.42 | 1.29 | 1.53 | 1.52 | 1.52 | 1.56 |
| 5875.00 | 6.99 | 6.89 | 6.85 | 6.97 | 0.14 | 25.71 | 23.97 | 25.51 | 2.35 | 1.32 | 1.52 | 1.50 | 1.51 | 1.55 |
| 5900.00 | 6.99 | 6.90 | 6.85 | 6.97 | 0.14 | 25.57 | 23.80 | 25.37 | 2.33 | 1.33 | 1.52 | 1.50 | 1.50 | 1.55 |
| 6000.00 | 7.01 | 6.93 | 6.87 | 6.99 | 0.15 | 24.99 | 23.11 | 24.79 | 2.18 | 1.39 | 1.50 | 1.47 | 1.47 | 1.52 |

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





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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