

Surface Mount Power Splitter/Combiner

ADQ-180+

2 Way-90° 50Ω 120 to 180 MHz



Generic photo used for illustration purposes only

CASE STYLE: CJ725

+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" | 10, 20, 50, 100, 200 |
| 13" | 500 |

Maximum Ratings

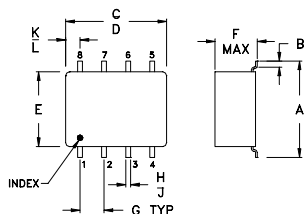
| | |
|-----------------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Power Input (as a splitter) | 1W max. |

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

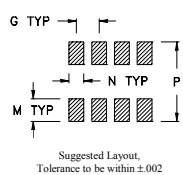
Pin Connections

| | |
|----------------------|---------|
| SUM PORT | 1 |
| PORT 1 (+90°) | 8 |
| PORT 2 (0°) | 4 |
| GROUND | 2,3,6,7 |
| 50 OHM TERM EXTERNAL | 5 |

Outline Drawing



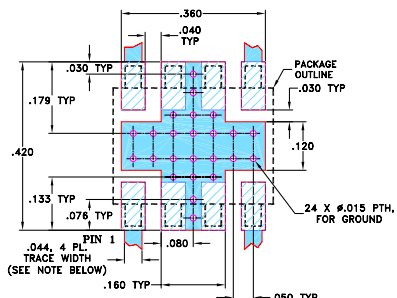
PCB Land Pattern



Outline Dimensions (inch/mm)

| | | | | | | | |
|-------|------|------|-------|------|------|-------|-------|
| A | B | C | D | E | F | G | |
| .397 | .032 | .385 | .435 | .310 | .215 | .100 | |
| 10.08 | 0.81 | 9.78 | 11.05 | 7.87 | 5.46 | 2.54 | |
| H | J | K | L | M | N | P | wt |
| .015 | .025 | .035 | .075 | .120 | .060 | .420 | grams |
| 0.38 | 0.64 | 0.89 | 1.91 | 3.05 | 1.52 | 10.67 | 0.45 |

Demo Board MCL P/N: TB-83 Suggested PCB Layout (PL-063)



- 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

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.
C. 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/MCLStore/terms.jsp

Features

- excellent amplitude unbalance, 0.6 dB typ. and phase unbalance, 0.7 deg. typ.
- very low insertion loss, 0.2 dB typ.
- small surface mount package
- protected under U.S. Patent 6,133,525

Applications

- VHF TV

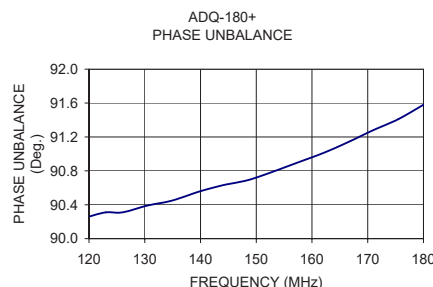
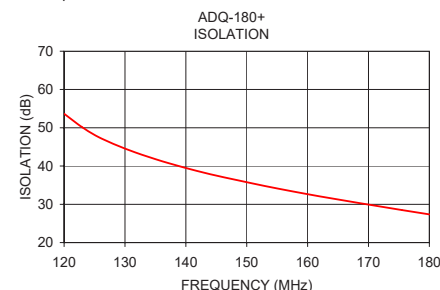
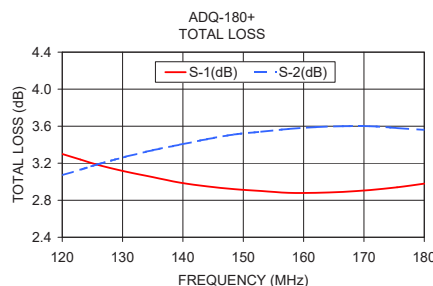
Electrical Specifications

| FREQ. RANGE (MHz) | ISOLATION (dB) | | INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB | | PHASE UNBALANCE (Degrees) | AMPLITUDE UNBALANCE (dB) |
|-------------------|----------------|------|-----------------------------------------------------------|------|---------------------------|--------------------------|
| | Typ. | Min. | Typ. | Max. | | |
| $f_c - f_u$ | | | | | Max. | Max. |
| 120-180 | 35 | 20 | 0.2 | 0.7 | 6 | 1.5 |

Typical Performance Data

| Frequency (MHz) | Total Loss ¹ (dB) | | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|-----------------|------------------------------|------|--------------------------|----------------|------------------------|--------|--------|--------|
| | S-1 | S-2 | | | | | | |
| 120.00 | 3.30 | 3.07 | 0.23 | 53.66 | 90.26 | 1.04 | 1.03 | 1.05 |
| 123.00 | 3.24 | 3.13 | 0.11 | 50.12 | 90.31 | 1.04 | 1.03 | 1.05 |
| 126.00 | 3.18 | 3.19 | 0.01 | 47.30 | 90.31 | 1.04 | 1.03 | 1.05 |
| 130.50 | 3.11 | 3.27 | 0.16 | 44.27 | 90.39 | 1.03 | 1.03 | 1.05 |
| 135.00 | 3.05 | 3.34 | 0.30 | 41.81 | 90.45 | 1.03 | 1.03 | 1.06 |
| 139.50 | 2.99 | 3.40 | 0.41 | 39.71 | 90.55 | 1.03 | 1.03 | 1.06 |
| 144.00 | 2.95 | 3.46 | 0.51 | 37.87 | 90.63 | 1.03 | 1.03 | 1.06 |
| 148.50 | 2.92 | 3.51 | 0.59 | 36.28 | 90.69 | 1.03 | 1.03 | 1.06 |
| 153.00 | 2.90 | 3.54 | 0.65 | 34.78 | 90.79 | 1.03 | 1.03 | 1.06 |
| 157.50 | 2.88 | 3.57 | 0.69 | 33.39 | 90.90 | 1.03 | 1.03 | 1.06 |
| 162.00 | 2.88 | 3.59 | 0.71 | 32.08 | 91.01 | 1.04 | 1.04 | 1.07 |
| 166.50 | 2.89 | 3.60 | 0.71 | 30.85 | 91.14 | 1.04 | 1.04 | 1.07 |
| 171.00 | 2.91 | 3.60 | 0.69 | 29.66 | 91.28 | 1.05 | 1.05 | 1.08 |
| 175.50 | 2.94 | 3.58 | 0.64 | 28.50 | 91.41 | 1.05 | 1.06 | 1.08 |
| 180.00 | 2.98 | 3.56 | 0.57 | 27.36 | 91.58 | 1.06 | 1.06 | 1.09 |

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



electrical schematic

