

Surface Mount Power Splitter/Combiner

4 Way-0° 50Ω 1 to 500 MHz

AD4PS-1+



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

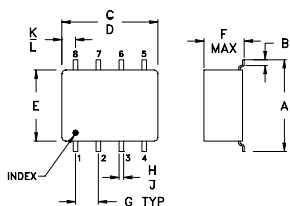
| | |
|-----------------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Power Input (as a splitter) | 0.5W max. |
| Internal Dissipation | 0.25W max. |

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

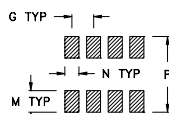
Pin Connections

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

Outline Drawing



PCB Land Pattern

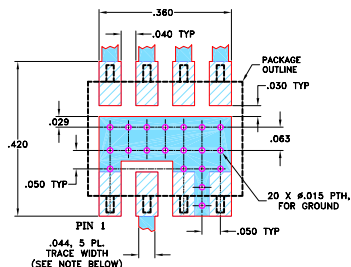


Suggested Layout
Tolerance to be within ±.002

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-81 Suggested PCB Layout (PL-072)



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.

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Features

- wideband, 1-500 MHz
- high isolation, 30 dB typ.
- good input port matching VSWR, 1.12 typ.
- good output port matching VSWR, 1.10 typ.
- small surface mount package

Applications

- VHF-TV
- aircraft communications

Electrical Specifications

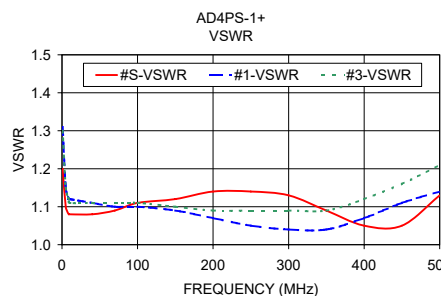
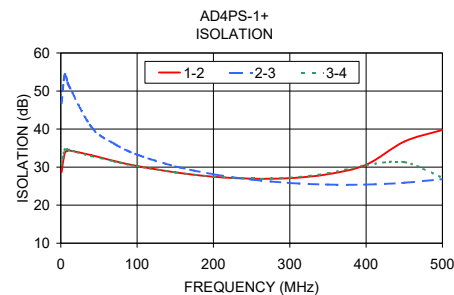
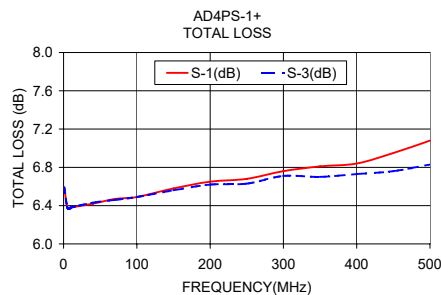
| FREQ. RANGE (MHz) | ISOLATION (dB) | | | | | | INSERTION LOSS (dB) ABOVE 6.0 dB | | | | | | PHASE UNBALANCE (Degrees) | | | AMPLITUDE UNBALANCE (dB) | | |
|--------------------------------|----------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|---------------------------|------|------|--------------------------|------|------|
| | L | | M | | U | | L | | M | | U | | L | M | U | L | M | U |
| | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Max. | Typ. | Max. | Typ. | Max. | Max. | Max. | Max. | Max. | Max. | Max. |
| f _L -f _U | | | | | | | | | | | | | | | | | | |
| 1-500 | 32 | 18 | 30 | 20 | 25 | 18 | 0.4 | 1.2 | 0.5 | 1.2 | 0.8 | 1.8 | 2 | 5 | 7 | 0.4 | 0.5 | 0.8 |

L = 1-10MHz M = 10-250MHz U = 250-500MHz

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 | | | | | | |
| 1.00 | 6.59 | 6.59 | 6.59 | 6.59 | 0.01 | 28.61 | 46.82 | 30.70 | 0.02 | 1.20 | 1.31 | 1.31 | 1.30 | 1.28 |
| 5.00 | 6.38 | 6.42 | 6.38 | 6.38 | 0.04 | 33.63 | 54.15 | 34.52 | 0.05 | 1.10 | 1.15 | 1.15 | 1.15 | 1.13 |
| 9.00 | 6.37 | 6.42 | 6.37 | 6.37 | 0.05 | 34.35 | 52.09 | 34.63 | 0.08 | 1.08 | 1.12 | 1.12 | 1.12 | 1.10 |
| 10.00 | 6.38 | 6.42 | 6.38 | 6.38 | 0.04 | 34.41 | 51.62 | 34.60 | 0.09 | 1.08 | 1.12 | 1.12 | 1.11 | 1.10 |
| 40.00 | 6.42 | 6.47 | 6.43 | 6.43 | 0.04 | 33.14 | 40.57 | 32.89 | 0.28 | 1.08 | 1.11 | 1.11 | 1.11 | 1.09 |
| 70.00 | 6.47 | 6.50 | 6.46 | 6.46 | 0.04 | 31.60 | 36.15 | 31.47 | 0.52 | 1.09 | 1.10 | 1.11 | 1.11 | 1.09 |
| 100.00 | 6.49 | 6.53 | 6.49 | 6.49 | 0.04 | 30.28 | 33.28 | 30.23 | 0.71 | 1.11 | 1.10 | 1.10 | 1.11 | 1.09 |
| 150.00 | 6.58 | 6.61 | 6.56 | 6.56 | 0.05 | 28.63 | 30.21 | 28.64 | 1.04 | 1.12 | 1.09 | 1.10 | 1.10 | 1.08 |
| 200.00 | 6.65 | 6.68 | 6.62 | 6.62 | 0.05 | 27.48 | 28.12 | 27.52 | 1.47 | 1.14 | 1.07 | 1.08 | 1.09 | 1.07 |
| 250.00 | 6.68 | 6.71 | 6.63 | 6.62 | 0.09 | 26.98 | 26.73 | 27.02 | 1.66 | 1.14 | 1.05 | 1.07 | 1.09 | 1.06 |
| 300.00 | 6.76 | 6.80 | 6.71 | 6.70 | 0.10 | 27.10 | 25.83 | 27.23 | 1.99 | 1.13 | 1.04 | 1.06 | 1.09 | 1.06 |
| 350.00 | 6.81 | 6.83 | 6.70 | 6.68 | 0.15 | 28.13 | 25.41 | 28.36 | 2.08 | 1.09 | 1.04 | 1.06 | 1.09 | 1.06 |
| 400.00 | 6.84 | 6.90 | 6.73 | 6.68 | 0.21 | 30.62 | 25.41 | 30.49 | 2.21 | 1.05 | 1.07 | 1.08 | 1.12 | 1.09 |
| 450.00 | 6.95 | 6.98 | 6.76 | 6.73 | 0.26 | 36.71 | 25.89 | 31.30 | 2.54 | 1.05 | 1.11 | 1.11 | 1.16 | 1.12 |
| 500.00 | 7.08 | 7.15 | 6.83 | 6.77 | 0.38 | 39.78 | 26.85 | 27.20 | 3.34 | 1.13 | 1.14 | 1.15 | 1.21 | 1.17 |

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



electrical schematic



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