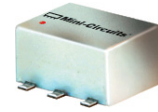


# Surface Mount Power Splitter/Combiner

## ADP-2-122-75+

2 Way-0° 75Ω 5 to 1250 MHz



CASE STYLE: CD636

### Features

- wideband, 5 to 1250 MHz
- low insertion loss, 0.9 dB typ.
- aqueous washable
- protected under U.S. Patent 6,133,525

### +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, 500 |
| 13"       | 500, 1000                 |

### Electrical Specifications at 25°C

| Parameter                    | Frequency (MHz) | Min. | Typ. | Max. | Unit   |
|------------------------------|-----------------|------|------|------|--------|
| Frequency Range              |                 | 5    |      | 1250 | MHz    |
| Insertion Loss, above 3.0 dB | 5-50            | —    | 0.25 | 0.5  | dB     |
|                              | 50-1000         | —    | 0.75 | 1.2  |        |
|                              | 1000-1250       | —    | 1.00 | 1.6  |        |
| Isolation                    | 5-50            | 17   | 20   | —    | dB     |
|                              | 50-1000         | 18   | 22   | —    |        |
|                              | 1000-1250       | 17   | 19   | —    |        |
| Phase Unbalance              | 5-50            | —    | 0.5  | 1.0  | Degree |
|                              | 50-1000         | —    | 1.5  | 3.5  |        |
|                              | 1000-1250       | —    | 2.0  | 4.0  |        |
| Amplitude Unbalance          | 5-50            | —    | 0.1  | 0.2  | dB     |
|                              | 50-1000         | —    | 0.15 | 0.3  |        |
|                              | 1000-1250       | —    | 0.2  | 0.4  |        |
| VSWR (Port S)                | 5-1000          | —    | 1.15 | 1.30 | :1     |
|                              | 1000-1250       | —    | 1.25 | 1.35 |        |
| VSWR (Port 1 and Port 2)     | 5-1000          | —    | 1.25 | 1.4  | :1     |
|                              | 1000-1250       | —    | 1.2  | 1.4  |        |

### Maximum Ratings

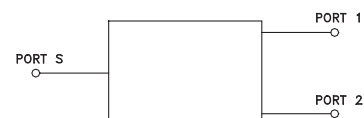
| Parameter                   | Ratings        |
|-----------------------------|----------------|
| Operating Temperature       | -40°C to 85°C  |
| Storage Temperature         | -55°C to 100°C |
| Power Input (as a splitter) | 0.5W max.      |
| Internal Dissipation        | 0.125 W max.   |

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

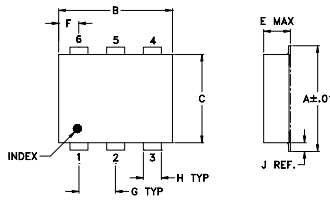
### Pin Connections

| Function | Pin Number |
|----------|------------|
| SUM PORT | 1          |
| PORT 1   | 3          |
| PORT 2   | 4          |
| GROUND   | 6          |
| NOT USED | 2,5        |

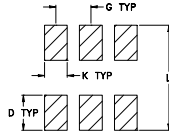
### Electrical Schematic



## Outline Drawing



### PCB Land Pattern

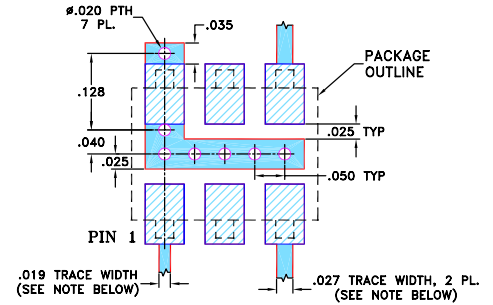


Suggested Layout,  
Tolerance to be within ±.002

## Outline Dimensions (inch/mm)

| A    | B    | C    | D    | E     | F    | G    |
|------|------|------|------|-------|------|------|
| 272  | .310 | .220 | .100 | .162  | .055 | .100 |
| 3.91 | 7.87 | 5.59 | 2.54 | 4.11  | 1.40 | 2.54 |
| H    | J    | K    | L    | wt    |      |      |
| .030 | .026 | .065 | .300 | grams |      |      |
| 1.76 | 0.66 | 1.65 | 7.62 | 0.25  |      |      |

## Demo Board MCL P/N: TB-243 Suggested PCB Layout (PL-141)



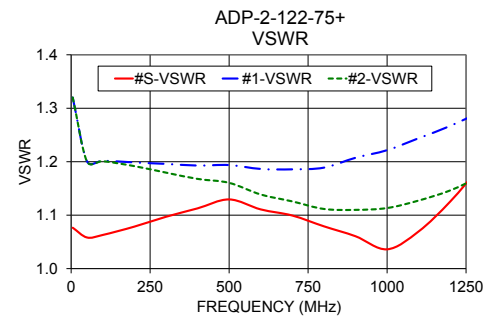
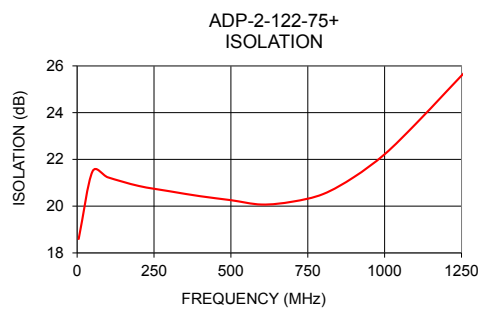
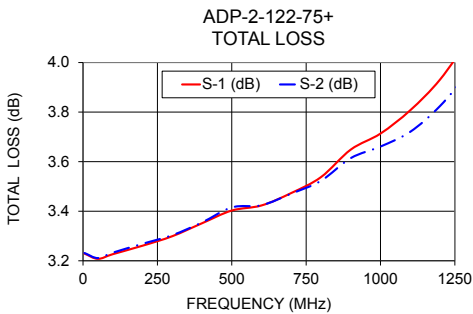
- NOTES:** 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .030" ± .002". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## Typical Performance Data

| Frequency (MHz) | Total Loss <sup>1</sup> (dB) |      | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|-----------------|------------------------------|------|--------------------------|----------------|------------------------|--------|--------|--------|
|                 | S-1                          | S-2  |                          |                |                        |        |        |        |
| 5               | 3.23                         | 3.23 | 0.00                     | 18.60          | 0.03                   | 1.08   | 1.32   | 1.32   |
| 50              | 3.21                         | 3.21 | 0.00                     | 21.49          | 0.17                   | 1.06   | 1.20   | 1.20   |
| 100             | 3.23                         | 3.23 | 0.01                     | 21.23          | 0.33                   | 1.06   | 1.20   | 1.20   |
| 200             | 3.26                         | 3.27 | 0.01                     | 20.87          | 0.66                   | 1.08   | 1.20   | 1.19   |
| 300             | 3.30                         | 3.30 | 0.00                     | 20.64          | 0.93                   | 1.10   | 1.20   | 1.18   |
| 400             | 3.35                         | 3.35 | 0.00                     | 20.43          | 1.21                   | 1.11   | 1.19   | 1.17   |
| 500             | 3.40                         | 3.42 | 0.01                     | 20.26          | 1.43                   | 1.13   | 1.19   | 1.16   |
| 600             | 3.42                         | 3.42 | 0.00                     | 20.07          | 1.56                   | 1.11   | 1.19   | 1.14   |
| 700             | 3.47                         | 3.47 | 0.00                     | 20.19          | 1.68                   | 1.10   | 1.19   | 1.13   |
| 800             | 3.54                         | 3.52 | 0.01                     | 20.52          | 1.80                   | 1.08   | 1.19   | 1.11   |
| 900             | 3.65                         | 3.61 | 0.03                     | 21.24          | 1.76                   | 1.06   | 1.21   | 1.11   |
| 1000            | 3.71                         | 3.66 | 0.05                     | 22.22          | 1.84                   | 1.04   | 1.22   | 1.11   |
| 1100            | 3.81                         | 3.72 | 0.09                     | 23.50          | 1.90                   | 1.07   | 1.24   | 1.13   |
| 1200            | 3.93                         | 3.82 | 0.11                     | 24.89          | 1.96                   | 1.13   | 1.27   | 1.15   |
| 1300            | 4.10                         | 3.97 | 0.13                     | 26.28          | 1.92                   | 1.19   | 1.29   | 1.17   |

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



## Additional 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-Circuits' applicable established test performance criteria and measurement instructions.
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