*Surface Mount*

# Power Splitter/Combiner

## 2 Way-0° 75Ω 5 to 2000 MHz

# ADP-2-20-75+
# ADP-2-20-75

CASE STYLE: CD542

**+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 |

## Maximum Ratings

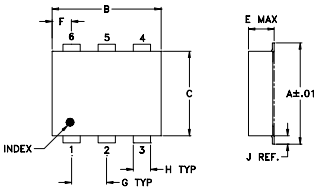
| | |
|---|---|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| Power Input (as a splitter) | 0.5W max. |
| Internal Dissipation | 0.25W max. |

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

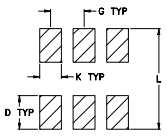
## Pin Connections

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

## Outline Drawing




PCB Land Pattern



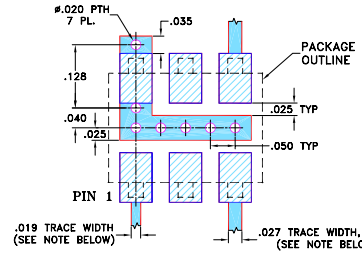

Suggested Layout,
Tolerance to be within ±.002

## Outline Dimensions (inch / mm)

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| .272 | .310 | .220 | .100 | .112 | .055 | .100 |
| 6.91 | 7.87 | 5.59 | 2.54 | 2.84 | 1.40 | 2.54 |

| H | J | K | L | wt |
|---|---|---|---|---|
| .030 | .026 | .065 | .300 | grams |
| 0.76 | 0.66 | 1.65 | 7.62 | 0.20 |

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




NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B 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

## Features

- wide bandwidth, 5 to 2000 MHz
- low insertion loss, 0.5 dB typ.
- excellent amplitude unbalance, 0.05 dB typ.
- excellent phase unbalance, 0.5 deg. typ.
- aqueous washable
- protected under U.S. Patent 6,133,525

## Applications

- instrumentation
- PCS/cellular

## Electrical Specifications

| FREQ. RANGE (MHz) | ISOLATION (dB) | | | | | | INSERTION LOSS (dB) ABOVE 3.0 dB | | | | | | PHASE UNBALANCE (Degrees) | | | AMPLITUDE UNBALANCE (dB) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | | M | | U | | L | | M | | U | | L | M | U | L | M | U |
| $f_L$-$f_U$ | Typ. | Min | Typ. | Min | Typ. | Min | Typ. | Max. | Typ. | Max. | Typ. | Max. | Max. | Max. | Max. | Max. | Max. | Max. |
| 5-2000 | 16 | 12 | 16 | 13 | 28 | 15 | 0.4 | 0.9 | 0.5 | 1.2 | 0.6 | 1.4 | 1.0 | 4.0 | 5.0 | 0.15 | 0.3 | 0.6 |

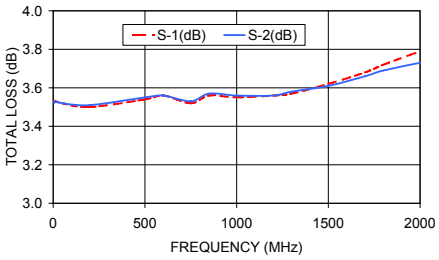
L = 5-50 MHz M = 50-1000 MHz U = 1000-2000 MHz

## Typical Performance Data

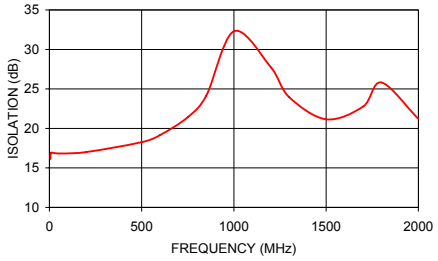
| Frequency (MHz) | Total Loss[1] (dB) | | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|---|---|---|---|---|---|---|---|---|
| | S-1 | S-2 | | | | | | |
| 5.00 | 3.53 | 3.52 | 0.01 | 16.13 | 0.06 | 1.98 | 1.48 | 1.48 |
| 10.00 | 3.53 | 3.53 | 0.00 | 16.92 | 0.05 | 1.98 | 1.49 | 1.49 |
| 50.00 | 3.52 | 3.52 | 0.00 | 16.83 | 0.09 | 1.97 | 1.48 | 1.48 |
| 200.00 | 3.50 | 3.51 | 0.01 | 17.01 | 0.35 | 1.95 | 1.51 | 1.51 |
| 500.00 | 3.54 | 3.55 | 0.01 | 18.26 | 0.77 | 1.97 | 1.62 | 1.61 |
| 600.00 | 3.56 | 3.56 | 0.01 | 19.16 | 0.88 | 2.00 | 1.64 | 1.65 |
| 750.00 | 3.52 | 3.53 | 0.01 | 21.42 | 1.04 | 2.05 | 1.68 | 1.67 |
| 850.00 | 3.56 | 3.57 | 0.02 | 24.14 | 1.13 | 2.06 | 1.69 | 1.69 |
| 1000.00 | 3.55 | 3.56 | 0.02 | 32.31 | 1.20 | 2.05 | 1.72 | 1.71 |
| 1200.00 | 3.56 | 3.56 | 0.01 | 27.75 | 1.30 | 1.87 | 1.75 | 1.78 |
| 1300.00 | 3.57 | 3.58 | 0.01 | 23.96 | 1.24 | 1.74 | 1.77 | 1.81 |
| 1500.00 | 3.62 | 3.61 | 0.01 | 21.15 | 1.24 | 1.48 | 1.84 | 1.84 |
| 1700.00 | 3.68 | 3.66 | 0.03 | 22.76 | 1.07 | 1.18 | 1.82 | 1.84 |
| 1800.00 | 3.72 | 3.69 | 0.03 | 25.81 | 0.93 | 1.05 | 1.77 | 1.81 |
| 2000.00 | 3.79 | 3.73 | 0.06 | 21.22 | 0.36 | 1.29 | 1.64 | 1.62 |

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

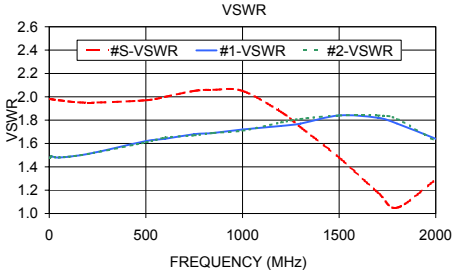
ADP-2-20-75
TOTAL LOSS



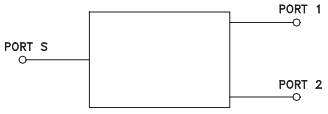

ADP-2-20-75
ISOLATION




ADP-2-20-75
VSWR




## electrical schematic




Notes
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