*Surface Mount*

# Power Splitter/Combiner

# SYPS-2-282-75+

## 2 Way-0° 75Ω 5 to 2750 MHz

CASE STYLE: AH202-2
PRICE: $19.95 ea. QTY. (10-49)

*+ RoHS compliant in accordance with EU Directive (2002/95/EC)*

*The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.*

### 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 | 0.05W max. |

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

### Pin Connections

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

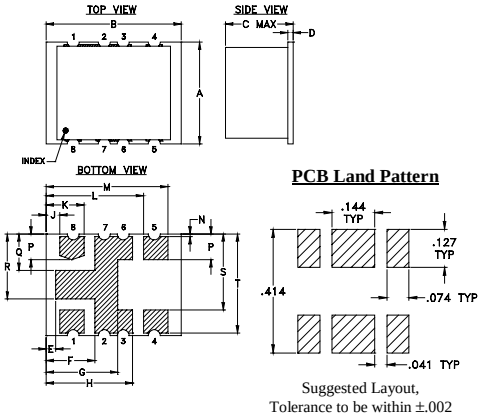
### Features

- wideband, 5 to 2750 MHz. useable 0.5 to 3000 MHz
- low insertion loss, 0.8 dB typ.
- high isolation, 25 dB typ.

### Applications

- VHF/UHF
- communications systems
- receivers & transmitters
- instrumentation
- CATV

### Outline Drawing



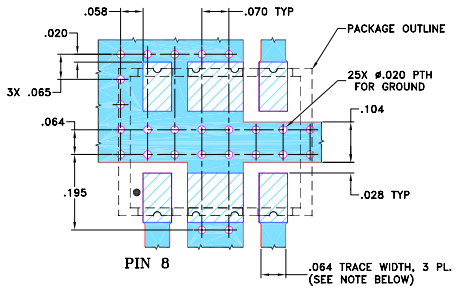

Suggested Layout,
Tolerance to be within ±.002

### Outline Dimensions (inch / mm)

| A | B | C | D | E | F | G | H | J | K |
|---|---|---|---|---|---|---|---|---|---|
| .38 | .50 | .25 | .020 | .035 | .180 | .265 | .320 | .050 | .140 |
| 9.65 | 12.70 | 6.35 | 0.51 | 0.89 | 4.57 | 6.73 | 8.13 | 1.27 | 3.56 |

| L | M | N | P | Q | R | S | T | |
|---|---|---|---|---|---|---|---|---|
| .360 | .450 | .010 | .095 | .135 | .240 | .280 | .365 | wt |
| 9.14 | 11.43 | 0.25 | 2.41 | 3.43 | 6.10 | 7.11 | 9.27 | grams |
| | | | | | | | | 0.52 |

### *Demo Board MCL P/N: TB-426+*
### *Suggested PCB Layout (PL-268)*




NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .060" ± .004"; 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

### Electrical Specifications

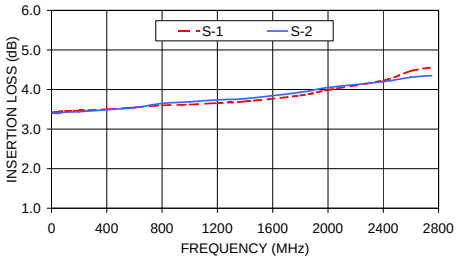
| FREQ. RANGE (MHz) | ISOLATION (dB) | | | | | | INSERTION LOSS (dB) ABOVE 3.0 dB | | | | | | PHASE UNBALANCE (Degrees) | | | AMPLITUDE UNBALANCE (dB) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | | M | | U | | L | | M | | U | | L | M | U | L | M | U |
| $f_L$-$f_U$ | Typ. | Min. | Typ. | Min. | Typ. | Min. | Typ. | Max. | Typ. | Max. | Typ. | Max. | Max. | Max. | Max. | Max. | Max. | Max. |
| 5-2750 | 20 | 12 | 25 | 18 | 22 | 13 | 0.5 | 0.7 | 0.8 | 1.1 | 1.5 | 2.7 | 2.0 | 4.0 | 6.0 | 0.2 | 0.4 | 1.0 |

L = low range [$f_L$ to 10 $f_L$] M = mid range [10 $f_L$ to $f_U$/2] U= upper range [$f_U$/2 to $f_U$]

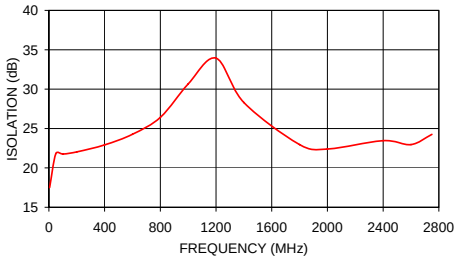
### Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) | | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|---|---|---|---|---|---|---|---|---|
| | S-1 | S-2 | | | | | | |
| 5.00 | 3.43 | 3.40 | 0.03 | 17.50 | 0.12 | 1.05 | 1.61 | 1.62 |
| 50.00 | 3.44 | 3.40 | 0.04 | 21.82 | 0.01 | 1.04 | 1.43 | 1.44 |
| 100.00 | 3.46 | 3.43 | 0.03 | 21.76 | 0.06 | 1.05 | 1.43 | 1.43 |
| 200.00 | 3.47 | 3.44 | 0.03 | 22.03 | 0.23 | 1.08 | 1.41 | 1.41 |
| 400.00 | 3.50 | 3.49 | 0.02 | 22.92 | 0.48 | 1.15 | 1.37 | 1.39 |
| 600.00 | 3.55 | 3.54 | 0.02 | 24.27 | 0.70 | 1.22 | 1.34 | 1.37 |
| 800.00 | 3.60 | 3.65 | 0.05 | 26.42 | 0.83 | 1.27 | 1.32 | 1.35 |
| 1000.00 | 3.62 | 3.69 | 0.07 | 30.66 | 0.96 | 1.28 | 1.29 | 1.31 |
| 1200.00 | 3.66 | 3.74 | 0.08 | 33.93 | 1.24 | 1.24 | 1.22 | 1.24 |
| 1400.00 | 3.70 | 3.77 | 0.06 | 28.30 | 0.92 | 1.17 | 1.13 | 1.16 |
| 1800.00 | 3.85 | 3.93 | 0.08 | 22.96 | 0.63 | 1.12 | 1.05 | 1.06 |
| 2000.00 | 3.99 | 4.05 | 0.06 | 22.39 | 0.42 | 1.19 | 1.09 | 1.12 |
| 2400.00 | 4.23 | 4.20 | 0.04 | 23.46 | 0.16 | 1.29 | 1.18 | 1.19 |
| 2600.00 | 4.47 | 4.31 | 0.16 | 22.96 | 0.39 | 1.29 | 1.26 | 1.20 |
| 2750.00 | 4.56 | 4.35 | 0.21 | 24.26 | 0.54 | 1.26 | 1.26 | 1.19 |

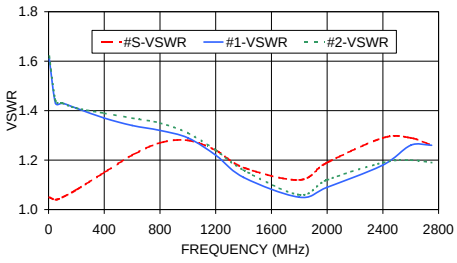
SYPS-2-282-75+
INSERTION LOSS



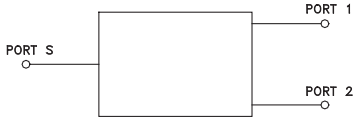

SYPS-2-282-75+
ISOLATION




SYPS-2-282-75+
VSWR




### electrical schematic









REV. OR
M112543
ED-12877/3
SYPS-2-282-75+
HY/QL
090824