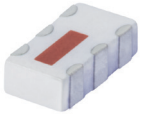
*Ultra-Small Ceramic*

# Power Splitter/Combiner

## SCN-2-45+
## SCN-2-45

2 Way-0° 50Ω 3700 to 4200 MHz



*Generic photo used for illustration purposes only*

CASE STYLE: FV1206-1

***+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" | 20, 50, 100, 200, 500,1000, 3000 |

## Maximum Ratings

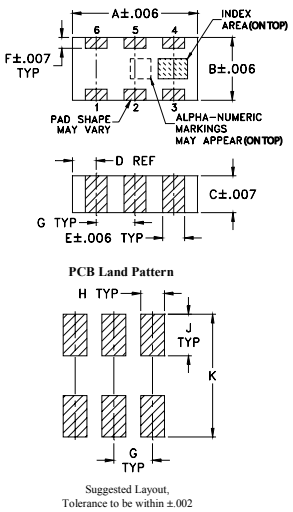
| | |
|---|---|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 100°C |
| Power Input (as a splitter) | 4W* max. |

*Derate linearly to 1.3W at 100°C ambient, power input as combiner is limited by rating of external 100Ω Resistor.
Permanent damage may occur if any of these limits are exceeded.

## Pin Connections

| | |
|---|---|
| SUM PORT | 2 |
| PORT 1 | 6 |
| PORT 2 | 4 |
| GROUND | 1,3,5 |
| PORT 1-2 | resistor external 100 OHMS |

## Outline Drawing

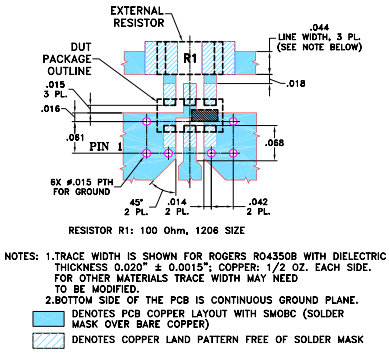



## Outline Dimensions (inch / mm)

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| .126 | .063 | .035 | .024 | .022 | .011 |
| 3.20 | 1.60 | 0.89 | 0.61 | 0.56 | 0.28 |

| G | H | J | K | wt |
|---|---|---|---|---|
| .039 | .024 | .042 | .123 | grams |
| 0.99 | 0.61 | 1.07 | 3.12 | .020 |

***Demo Board MCL P/N: TB-252***
***Suggested PCB Layout (PL-129)***




## Features

- isolation resistor, external 100 ohms
- low insertion loss, 0.7 dB typ.
- excellent amplitude unbalance, 0.2 dB typ.
- excellent phase unbalance, 1.5 deg. typ.
- high isolation, 22 dB typ.
- excellent power handling, 4W as splitter
- small size, 0.12"X0.06"X0.035"
- ESD non-sensitive
- temperature stable LTCC technology
- wrap around terminations for excellent solderability
- low cost
- protected by US patent 6,967,544

## Applications

- maritime mobile

## Electrical Specifications

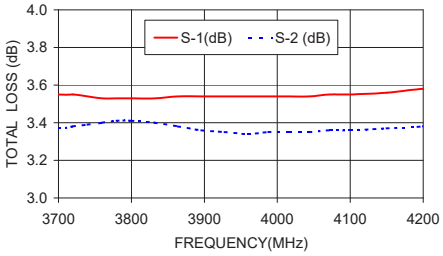
| FREQUENCY (MHz) | INSERTION LOSS (dB) ABOVE 3.0 dB | | ISOLATION (dB) | | PHASE UNBALANCE (Degrees) | | AMPLITUDE UNBALANCE (dB) | | RETURN LOSS (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Typ. | Max. | Typ. | Min. | Typ. | Max. | Typ. | Max. | INPUT Typ. | OUTPUT Typ. |
| **3700-4200** | **0.7** | **1.0** | **22** | **13** | **1.5** | **4.0** | **0.2** | **0.4** | **14** | **17** |
| 3800-4100 | 0.7 | 1.0 | 22 | 15 | 1.5 | 4.0 | 0.2 | 0.4 | 16 | 17 |

## Typical Performance Data

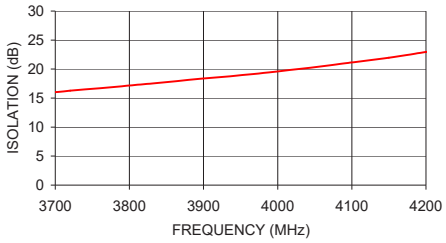
| Frequency (MHz) | Total Loss[1] (dB) | | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | Return Loss (dB) | | |
|---|---|---|---|---|---|---|---|---|
| | S-1 | S-2 | | | | S | 1 | 2 |
| 3700.00 | 3.55 | 3.37 | 0.18 | 16.04 | 1.57 | 17.81 | 22.02 | 28.10 |
| 3720.00 | 3.55 | 3.38 | 0.17 | 16.28 | 1.65 | 18.21 | 21.85 | 27.94 |
| 3740.00 | 3.54 | 3.39 | 0.15 | 16.49 | 1.66 | 18.58 | 21.83 | 27.36 |
| 3760.00 | 3.53 | 3.40 | 0.13 | 16.69 | 1.60 | 18.81 | 21.77 | 27.02 |
| 3780.00 | 3.53 | 3.41 | 0.12 | 16.91 | 1.46 | 18.96 | 21.52 | 26.95 |
| 3800.00 | 3.53 | 3.41 | 0.12 | 17.16 | 1.31 | 19.12 | 21.17 | 26.69 |
| 3864.00 | 3.54 | 3.38 | 0.16 | 17.92 | 1.09 | 19.67 | 20.59 | 25.75 |
| 3896.00 | 3.54 | 3.36 | 0.18 | 18.33 | 1.16 | 20.06 | 20.04 | 24.89 |
| 3960.00 | 3.54 | 3.34 | 0.19 | 19.05 | 1.26 | 20.35 | 19.56 | 23.33 |
| 4016.00 | 3.54 | 3.35 | 0.19 | 19.83 | 1.35 | 20.24 | 19.39 | 22.30 |
| 4044.00 | 3.54 | 3.35 | 0.19 | 20.24 | 1.35 | 20.20 | 19.35 | 21.98 |
| 4072.00 | 3.55 | 3.36 | 0.19 | 20.68 | 1.35 | 19.94 | 18.95 | 21.14 |
| 4100.00 | 3.55 | 3.36 | 0.19 | 21.14 | 1.38 | 19.60 | 18.59 | 20.57 |
| 4150.00 | 3.56 | 3.37 | 0.19 | 21.95 | 1.40 | 18.95 | 18.16 | 20.17 |
| 4200.00 | 3.58 | 3.38 | 0.19 | 22.97 | 1.44 | 18.34 | 17.92 | 19.66 |

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

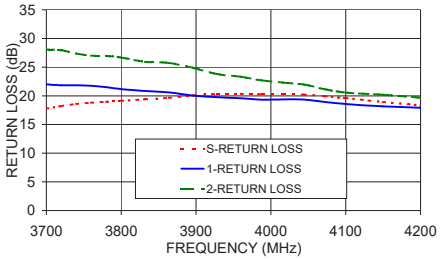
SCN-2-45
TOTAL LOSS



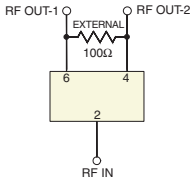

SCN-2-45
ISOLATION




SCN-2-45
RETURN LOSS




## electrical schematic




Notes
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