



ULTRA-SMALL CERAMIC

Power Splitter/Combiner

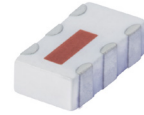
SCN-2-19+

Mini-Circuits

2 Way-0° 50Ω 1425 to 1900 MHz

FEATURES

- Isolation resistor, external 100 ohms
- Low insertion loss, 0.5 dB typ.
- Excellent amplitude unbalance, 0.2 dB typ.
- Good phase unbalance, 2.0 deg. typ.
- High isolation, 25 dB typ.
- Excellent power handling, 20W 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



Generic photo used for illustration purposes only

CASE STYLE: FV1206-1

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our website for methodologies and qualifications

APPLICATIONS

- GPS
- PCN

ELECTRICAL SPECIFICATIONS AT 25°C

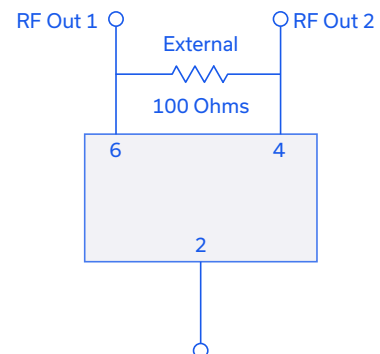
| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|------------------------------|-----------------|------|------|------|--------|
| Frequency Range | | 1425 | | 1900 | MHz |
| Insertion Loss, above 3.0 dB | 1425-1900 | | 0.5 | 0.9 | dB |
| | 1550-1800 | | 0.5 | 0.9 | |
| Isolation | 1425-1900 | 17 | 23 | | dB |
| | 1550-1800 | 20 | 25 | | |
| Phase Unbalance | 1425-1900 | | 2.5 | 4.0 | Degree |
| | 1550-1800 | | 2.0 | 4.0 | |
| Amplitude Unbalance | 1425-1900 | | 0.25 | 0.4 | dB |
| | 1550-1800 | | 0.2 | 0.4 | |
| Return Loss (Input) | 1425-1900 | | 15 | | dB |
| | 1550-1800 | | 19 | | |
| Return Loss (Output) | 1425-1900 | | 18 | | dB |
| | 1550-1800 | | 18 | | |

MAXIMUM RATINGS

| Parameter | Ratings |
|-----------------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 100°C |
| Power Input (as a splitter) | 20W* max. |

*Derate linearly to 6W at 100°C ambient. Permanent damage may occur if any of these limits are exceeded.

ELECTRICAL SCHEMATIC



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REV. K
ECO-025301
SCN-2-19+
ED-10710/4
MCL NY
250428
PAGE 1 OF 3

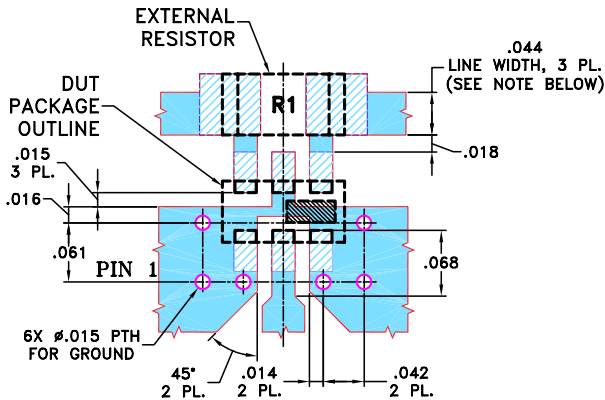


PIN CONNECTIONS

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

PRODUCT MARKING: P3

DEMO BOARD MCL P/N: TB-252 SUGGESTED PCB LAYOUT (PL-129)



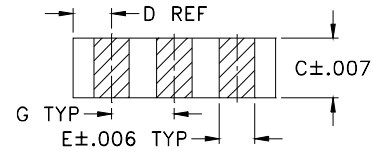
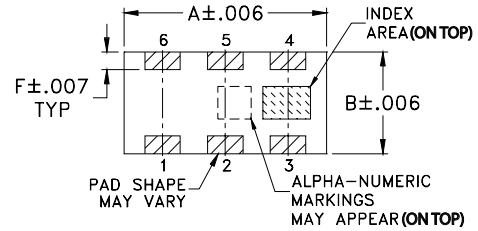
RESISTOR R1: 100 Ohm, 1206 SIZE

NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $0.020" \pm 0.0015"$; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

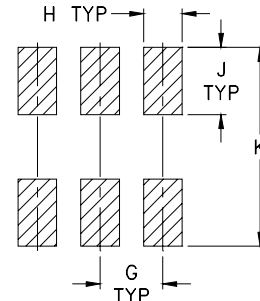
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

OUTLINE DRAWING



PCB Land Pattern



Suggested Layout,
Tolerance to be within ± 0.02

OUTLINE DIMENSIONS (Inches/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 | |

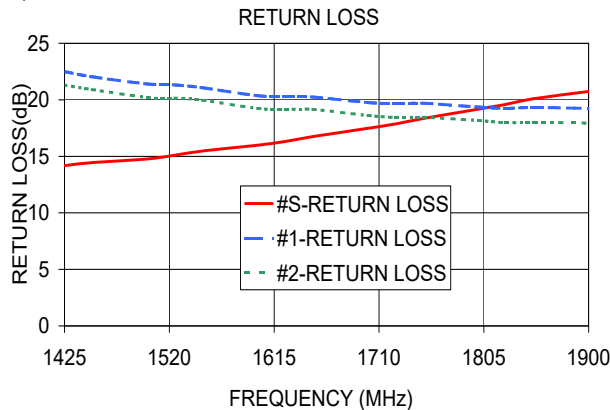
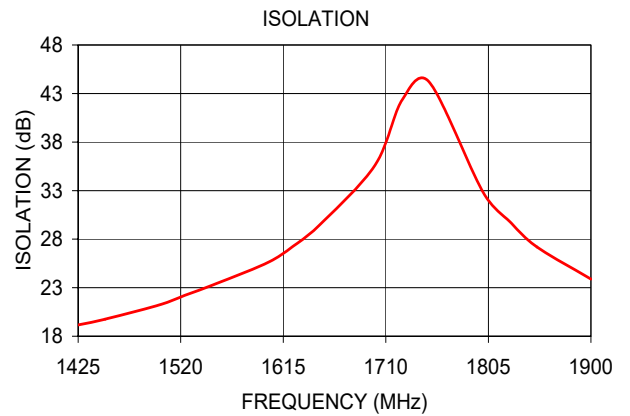
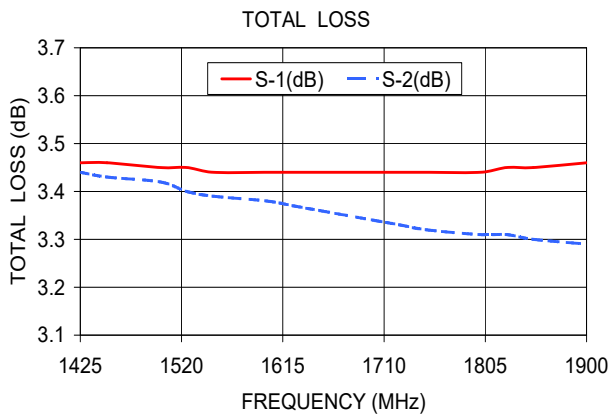
TAPE & REEL INFORMATION: F75



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 |
| 1425.00 | 3.46 | 3.44 | 0.02 | 19.16 | 0.79 | 14.18 | 22.49 | 21.29 |
| 1450.00 | 3.46 | 3.43 | 0.02 | 19.76 | 0.80 | 14.44 | 22.04 | 20.91 |
| 1500.00 | 3.45 | 3.42 | 0.04 | 21.22 | 0.83 | 14.77 | 21.40 | 20.21 |
| 1525.00 | 3.45 | 3.40 | 0.03 | 22.26 | 0.82 | 15.10 | 21.32 | 20.15 |
| 1550.00 | 3.44 | 3.39 | 0.05 | 23.29 | 0.81 | 15.47 | 21.07 | 19.97 |
| 1600.00 | 3.44 | 3.38 | 0.05 | 25.56 | 0.85 | 15.99 | 20.37 | 19.24 |
| 1625.00 | 3.44 | 3.37 | 0.06 | 27.34 | 0.86 | 16.31 | 20.30 | 19.16 |
| 1650.00 | 3.44 | 3.36 | 0.07 | 29.60 | 0.87 | 16.75 | 20.25 | 19.15 |
| 1700.00 | 3.44 | 3.34 | 0.09 | 35.62 | 0.93 | 17.48 | 19.76 | 18.62 |
| 1725.00 | 3.44 | 3.33 | 0.10 | 42.32 | 0.95 | 17.87 | 19.67 | 18.44 |
| 1750.00 | 3.44 | 3.32 | 0.11 | 44.21 | 0.93 | 18.35 | 19.69 | 18.45 |
| 1800.00 | 3.44 | 3.31 | 0.12 | 32.86 | 0.96 | 19.18 | 19.36 | 18.17 |
| 1825.00 | 3.45 | 3.31 | 0.13 | 29.78 | 0.99 | 19.60 | 19.24 | 17.98 |
| 1850.00 | 3.45 | 3.30 | 0.14 | 27.19 | 1.00 | 20.10 | 19.32 | 18.01 |
| 1900.00 | 3.46 | 3.29 | 0.17 | 23.89 | 1.02 | 20.74 | 19.24 | 17.94 |

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



- 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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