



CERAMIC

Power Splitter/Combiner

SCW-2-482+

Mini-Circuits

2 Way-0° 50Ω 3300 to 4800 MHz

THE BIG DEAL

- Isolation resistor, external 100 ohms
- Small size, (1.6x0.8mm)
- ESD non-sensitive
- Temperature stable LTCC technology
- Wrap around terminations for excellent solderability
- Low cost



Generic photo used for illustration purposes only
CASE STYLE: JC0603C

+RoHS Compliant

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

APPLICATIONS

- LTE
- 5G sub 6GHz

PRODUCT OVERVIEW

Mini-Circuits new LTCC 0° Power Splitter SCW-2-482+, offers industry leading combination of operating performance and size. The outstanding phase and amplitude unbalance make this component a versatile building block for use in a variety of systems and sub-system designs.

KEY FEATURES

| Feature | Advantages |
|--------------------------|--|
| Small Size | Offered in the package size, SCW-2-482+ offers an industry leading combination of size, power handling, and frequency. The small footprint allows for reduced parasitics in systems with improved performance and simplified layout. |
| Wrap-Around Terminations | Provides excellent solderability and easy visual inspection. |
| LTCC Construction | Provides repeatable performance in the rugged, ceramic package well suited for tough environments such as high humidity and temperature extremes. |

REV. OR
ECO-012339
SCW-2-482+
SL/CP/AM
220321





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ELECTRICAL SPECIFICATIONS AT 25°C

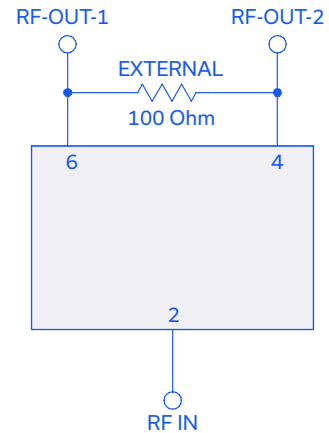
| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|------------------------------|-----------------|------|------|------|--------|
| Frequency Range | | 3300 | | 4800 | MHz |
| Insertion Loss, above 3.0 dB | 3300 - 4800 | – | 0.7 | 1 | dB |
| Isolation | 3300 - 4800 | 12 | 15 | – | dB |
| Phase Unbalance | 3300 - 4800 | – | 2 | 6 | Degree |
| Amplitude Unbalance | 3300 - 4800 | – | 0.2 | 0.5 | dB |
| Return Loss (Input) | 3300 - 4800 | – | 13 | – | dB |
| Return Loss (Output) | 3300 - 4800 | – | 16 | – | dB |

MAXIMUM RATINGS

| Parameter | Ratings |
|-----------------------------|----------------|
| Operating Temperature | -55°C to 125°C |
| Storage Temperature | -55°C to 125°C |
| Power Input (as a splitter) | 2W* max. |

* Power input as combiner is limited by rating of external resistor 100Ω resistor. Permanent damage may occur if any of these limits are exceeded.

ELECTRICAL SCHEMATIC





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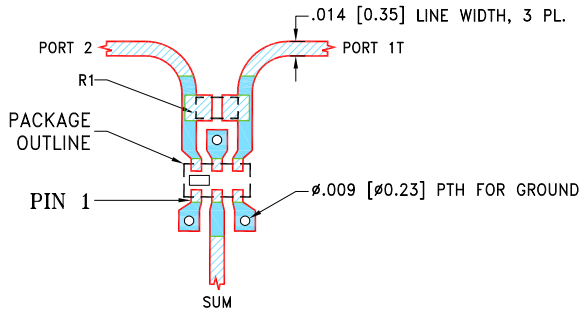
SCW-2-482+

PAD CONNECTIONS

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

PRODUCT MARKING: 1

DEMO BOARD MCL P/N: TB-SCW-2-482+
SUGGESTED PCB LAYOUT (PL-727)



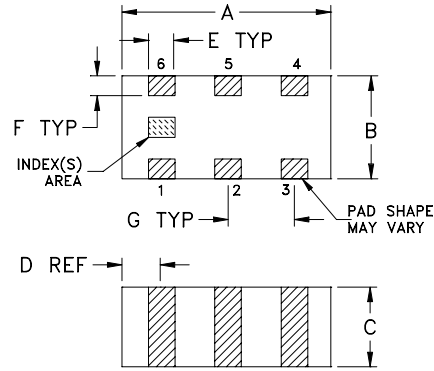
| COMPONENT | SIZE |
|-----------|------|
| R1 | 0402 |

NOTES:

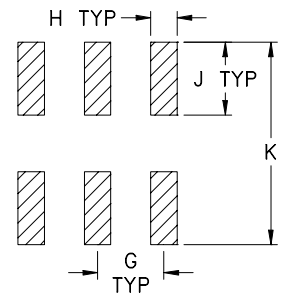
- LINE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .0066±.0007"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS LINE WIDTH MAY NEED TO BE MODIFIED.
- CHIP COMPONENT FOOT PRINTS SHOWN FOR REFERENCE. FOR COMPONENT VALUES REFER TO TB-1224+.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- 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 ±.002

OUTLINE DIMENSIONS (Inches/mm)

| A | B | C | D | E | F |
|------|------|------|------|-------|------|
| .063 | .031 | .024 | .012 | .008 | .006 |
| 1.60 | 0.79 | 0.61 | 0.30 | 0.20 | 0.15 |
| G | H | J | K | wt | |
| .020 | .010 | .022 | .053 | grams | |
| 0.51 | 0.25 | 0.56 | 1.35 | 0.005 | |

TAPE & REEL INFORMATION: F114



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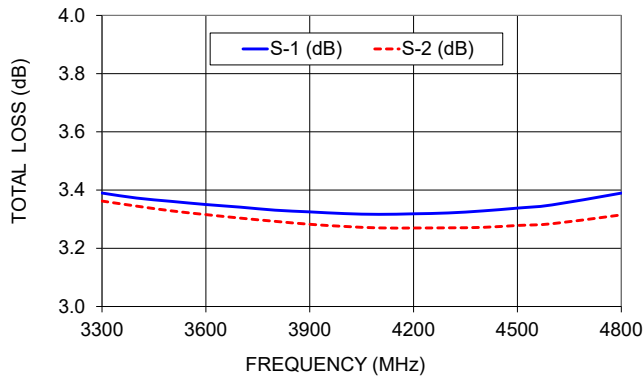
SCW-2-482+

TYPICAL PERFORMANCE DATA

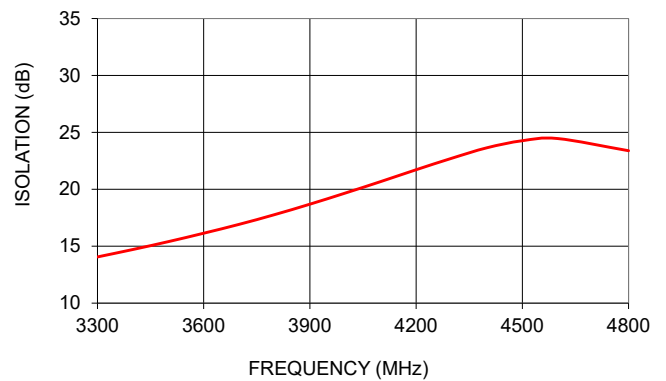
| Frequency (MHz) | Total Loss ¹ (dB) | | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | Return Loss (dB) | | |
|-----------------|------------------------------|------|--------------------------|----------------|------------------------|------------------|-------|-------|
| | S-1 | S-2 | | | | S | 1 | 2 |
| 3300 | 3.39 | 3.36 | 0.03 | 14.06 | 2.73 | 14.49 | 33.56 | 33.80 |
| 3400 | 3.37 | 3.34 | 0.03 | 14.71 | 2.83 | 14.99 | 34.75 | 34.83 |
| 3500 | 3.36 | 3.33 | 0.03 | 15.40 | 2.92 | 15.49 | 36.07 | 37.99 |
| 3600 | 3.35 | 3.32 | 0.03 | 16.14 | 3.03 | 16.01 | 37.85 | 39.77 |
| 3700 | 3.34 | 3.30 | 0.04 | 16.92 | 3.12 | 16.51 | 38.73 | 45.93 |
| 3800 | 3.33 | 3.29 | 0.04 | 17.77 | 3.21 | 17.09 | 37.47 | 45.07 |
| 3900 | 3.33 | 3.28 | 0.04 | 18.69 | 3.29 | 17.59 | 35.63 | 42.75 |
| 4000 | 3.32 | 3.28 | 0.04 | 19.67 | 3.37 | 18.14 | 33.38 | 39.02 |
| 4100 | 3.32 | 3.27 | 0.05 | 20.68 | 3.45 | 18.57 | 31.39 | 35.69 |
| 4200 | 3.32 | 3.27 | 0.05 | 21.72 | 3.53 | 18.94 | 29.40 | 33.39 |
| 4300 | 3.32 | 3.27 | 0.05 | 22.72 | 3.61 | 19.13 | 27.66 | 31.06 |
| 4400 | 3.33 | 3.27 | 0.06 | 23.65 | 3.69 | 19.21 | 26.03 | 29.27 |
| 4500 | 3.34 | 3.28 | 0.06 | 24.27 | 3.76 | 19.09 | 24.54 | 27.50 |
| 4600 | 3.35 | 3.28 | 0.06 | 24.46 | 3.83 | 18.78 | 23.20 | 25.80 |
| 4800 | 3.39 | 3.31 | 0.07 | 23.39 | 3.98 | 17.54 | 20.82 | 22.84 |

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

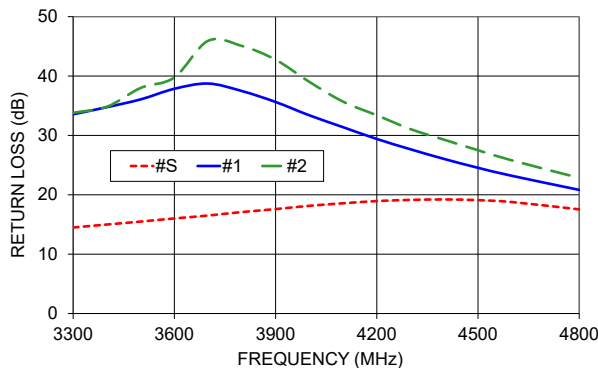
SCW-2-482+
TOTAL LOSS



SCW-2-482+
ISOLATION



SCW-2-482+
RETURN 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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