CERAMIC

Power Splitter/Combiner SCW-2-482+

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

Power Splitter/Combiner SCW-2-482+

ELECTRICAL SPECIFICATIONS AT 25°C

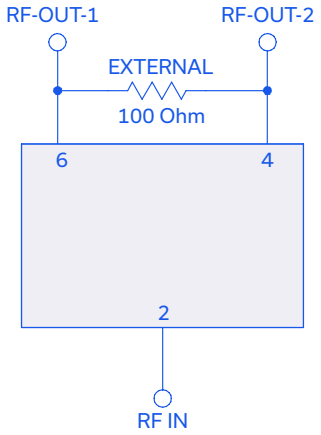
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		3300		4800	MHz
Insertion Loss, above 3.0 dB	3300 - 4800	—	0.7	1	dB
Isolation	3300 - 4800	12	15	—	dB
Phase Unbalance	3300 - 4800	—	2	6	Degree
Amplitude Unbalance	3300 - 4800	—	0.2	0.5	dB
Return Loss (Input)	3300 - 4800	—	13	—	dB
Return Loss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



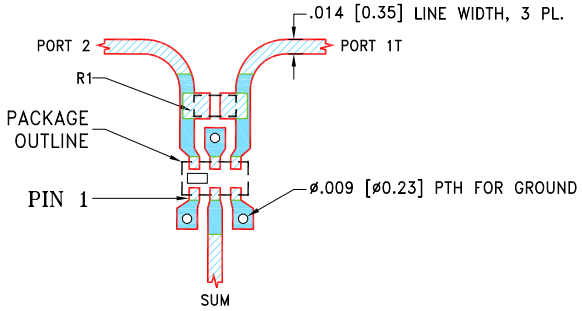
Power Splitter/Combiner SCW-2-482+

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)



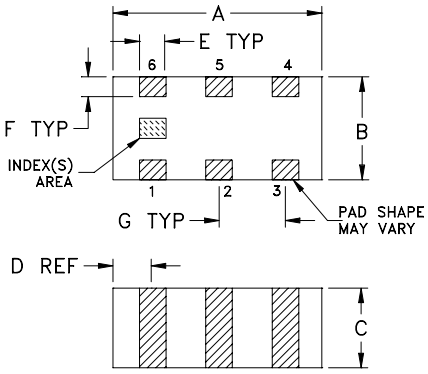
COMPONENT	SIZE
R1	0402

NOTES:
1. 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.
2. CHIP COMPONENT FOOT PRINTS SHOWN FOR REFERENCE. FOR COMPONENT VALUES REFER TO TB-1224+.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

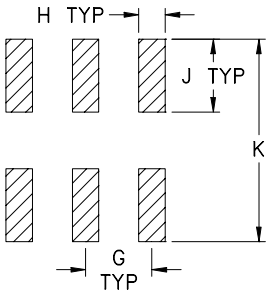
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).

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

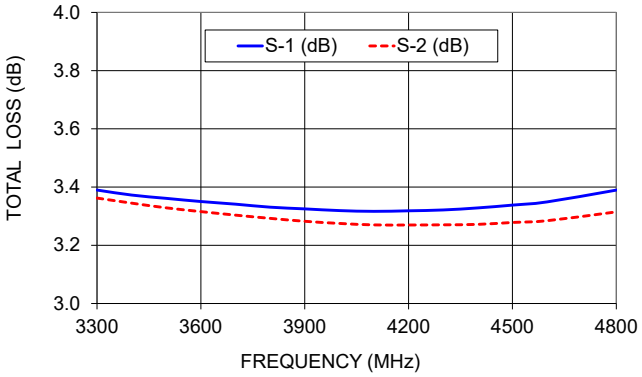
Power Splitter/Combiner SCW-2-482+

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



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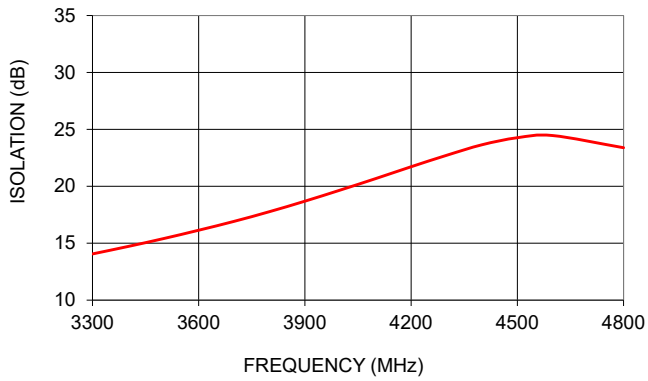
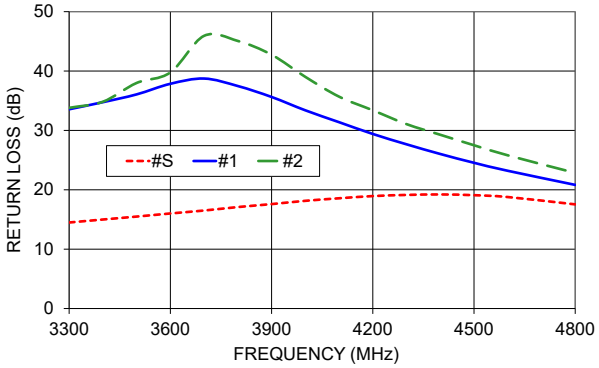
ISOLATION



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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