



Mini-Circuits

CERAMIC

Power Splitter/Combiner

SCW-2-722+

2 Way-0° 50Ω 4800 to 7200 MHz

THE BIG DEAL

- Isolation Resistor, External 100Ω
- Small Size, 1.6x0.8 mm
- 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 website for RoHS Compliance methodologies and qualifications

APPLICATIONS

- WLAN
- 5G Sub 6 GHz

PRODUCT OVERVIEW

Mini-Circuits' new LTCC 0° Power Splitter SCW-2-722+, 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-2-722+ 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.



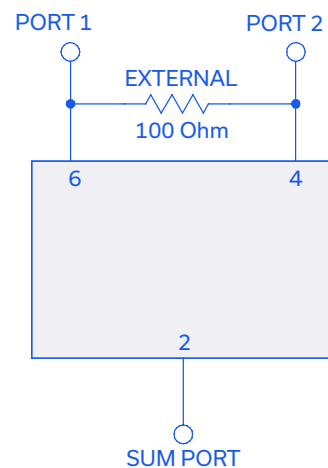
**ELECTRICAL SPECIFICATIONS AT +25°C**

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		4800		7200	MHz
Average Insertion Loss, Above 3.0 dB	4800-7200		1.2	1.6	dB
Isolation	4800-7200	12	16		dB
Phase Unbalance	4800-7200		4	7	Degree
Amplitude Unbalance	4800-7200		0.1	0.5	dB
Return Loss (Input)	4800-7200		13		dB
Return Loss (Output)	4800-7200		13		dB

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-55°C to +125°C
Storage Temperature	-55°C to +125°C
Power Input (as a Splitter)	2 W ¹ max.

1. 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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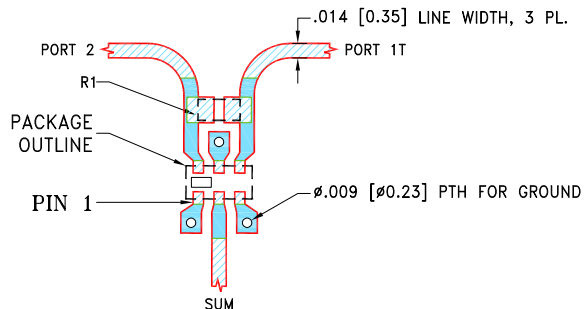
Power Splitter/Combiner SCW-2-722+

PAD CONNECTIONS

SUM PORT	2
PORT 1	6
PORT 2	4
GROUND	1,3,5
PORT 1-2	Resistor external 100Ω

PRODUCT MARKING: 2

DEMO BOARD MCL P/N: TB-SCW-2-722+ SUGGESTED PCB LAYOUT (PL-727)



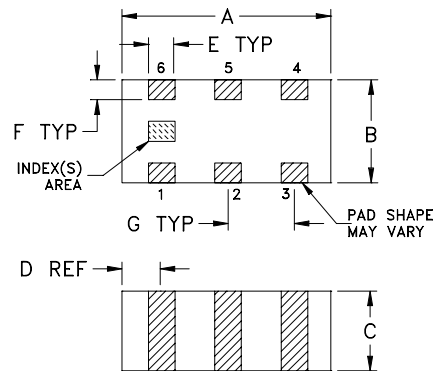
COMPONENT	SIZE
R1	0402

NOTES:

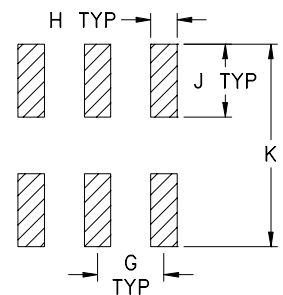
1. LINE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .0066±.0007"; COPPER: 1/2 OZ. EACH SIDE.
FOR OTHER MATERIALS LINE WIDTH MAY NEED TO BE MODIFIED.
2. CHIP COMPONENT FOOT PRINTS SHOWN FOR REFERENCE. FOR COMPONENT VALUES REFER TO TB-1224+.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND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



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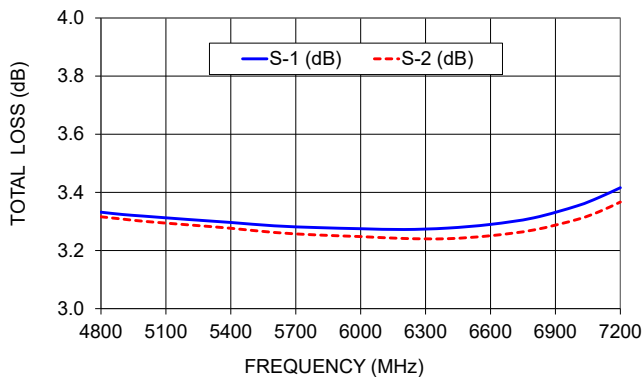
SCW-2-722+

TYPICAL PERFORMANCE DATA

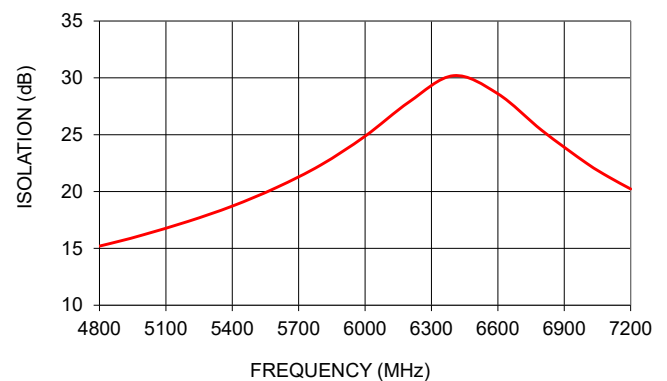
Frequency (MHz)	Total Loss ² (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	Return Loss (dB)		
	S-1	S-2				S	1	2
4800	3.39	3.36	0.03	14.06	2.73	14.49	33.56	33.80
4900	3.37	3.34	0.03	14.71	2.83	14.99	34.75	34.83
5000	3.36	3.33	0.03	15.40	2.92	15.49	36.07	37.99
5200	3.35	3.32	0.03	16.14	3.03	16.01	37.85	39.77
5400	3.34	3.30	0.04	16.92	3.12	16.51	38.73	45.93
5600	3.33	3.29	0.04	17.77	3.21	17.09	37.47	45.07
5800	3.33	3.28	0.04	18.69	3.29	17.59	35.63	42.75
6000	3.32	3.28	0.04	19.67	3.37	18.14	33.38	39.02
6200	3.32	3.27	0.05	20.68	3.45	18.57	31.39	35.69
6400	3.32	3.27	0.05	21.72	3.53	18.94	29.40	33.39
6600	3.32	3.27	0.05	22.72	3.61	19.13	27.66	31.06
6800	3.33	3.27	0.06	23.65	3.69	19.21	26.03	29.27
7000	3.34	3.28	0.06	24.27	3.76	19.09	24.54	27.50
7100	3.35	3.28	0.06	24.46	3.83	18.78	23.20	25.80
7200	3.39	3.31	0.07	23.39	3.98	17.54	20.82	22.84

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

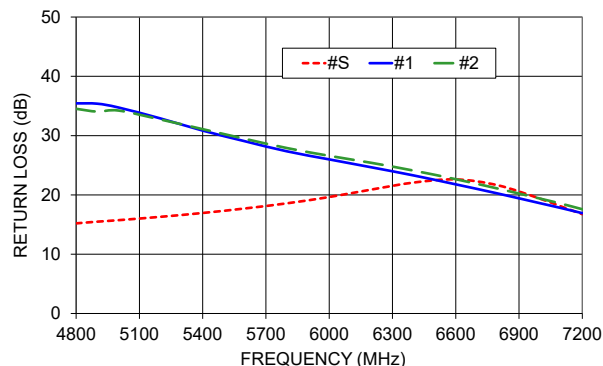
TOTAL LOSS



ISOLATION



RETURN LOSS



NOTES

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/terms/viewterm.html

