

Ultra-Small Ceramic Power Splitter/Combiner

SCG-3-592+

3 Way-0° 50Ω 4400 to 5900 MHz

Features

- Isolation resistor, external 150 ohms
- Low insertion loss, 1.2 dB typ.
- Excellent amplitude unbalance, 0.4 dB typ.
- Excellent phase unbalance, 5 deg. typ.
- High isolation, 17 dB typ.
- ESD non-sensitive
- Temperature stable LTCC technology
- Wrap around terminations for excellent solderability
- Low cost



Generic photo used for illustration purposes only

CASE STYLE: GE0805C-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, 2000

Applications

- ISM
- WLAN

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		4400		5900	MHz
Insertion Loss, above 4.8 dB	4400 - 5900	—	1.2	2.4	dB
Isolation	4400 - 5900	13.5	17	—	dB
Phase Unbalance	4400 - 5900	—	5	10	Degree
Amplitude Unbalance	4400 - 5900	—	0.4	0.9	dB
Return Loss (Input)	4400 - 5900	—	12	—	dB
Return Loss (Output)	4400 - 5900	—	13	—	dB

Maximum Ratings

Parameter	Ratings
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	2W* max.

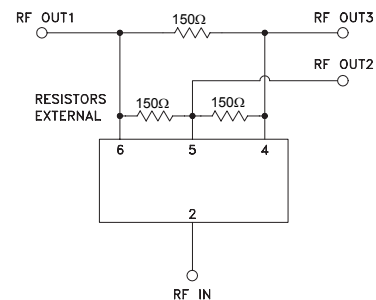
* Derate linearly to 0.7W at 100°C ambient, power input as combiner is limited by rating of external resistor 150Ω resistor.

Permanent damage may occur if any of these limits are exceeded.

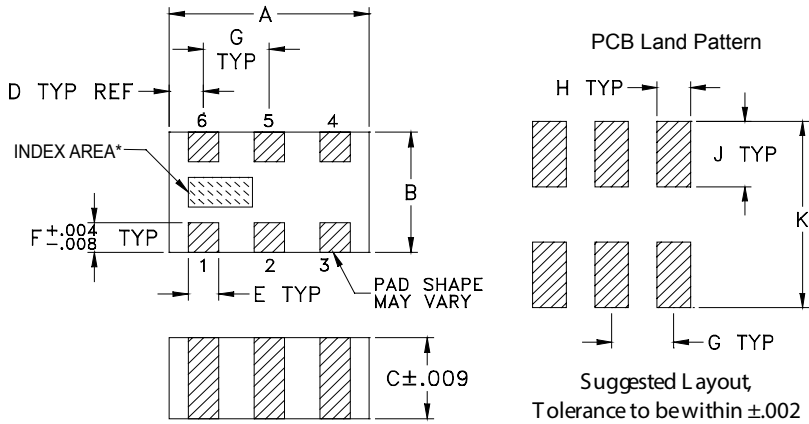
Pad Connections

Function	Pad Number
SUM PORT	2
PORT 1	6
PORT 2	5
PORT 3	4
GROUND	1,3
PORT 1-2, 2-3, 1-3	resistor external 150 ohms

Electrical Schematic



Outline Drawing

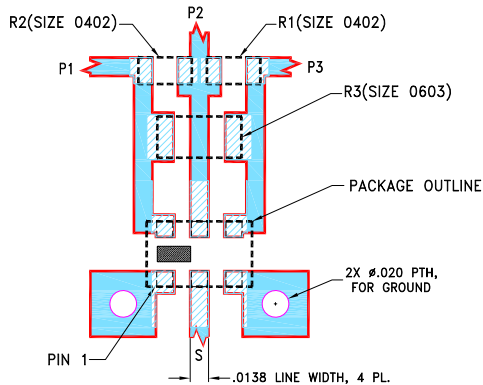


*Shape of index marking may vary

Outline Dimensions (inch / mm)

A	B	C	D	E	F
.079	.049	.033	.014	.012	.012
2.01	1.24	0.84	0.36	0.30	0.30
G	H	J	K	wt	
.026	.014	.039	.110	grams	
0.66	0.36	1.00	2.80	.008	

Demo Board MCL P/N: TB-1018+
Suggested PCB Layout (PL-621)



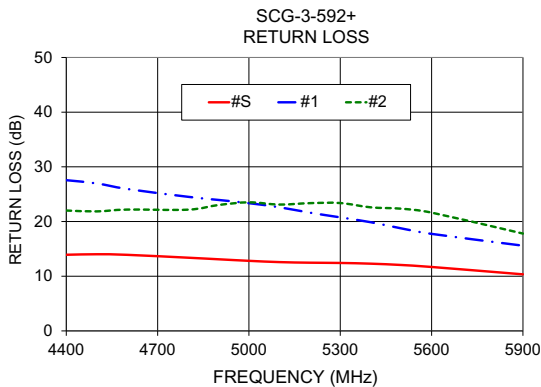
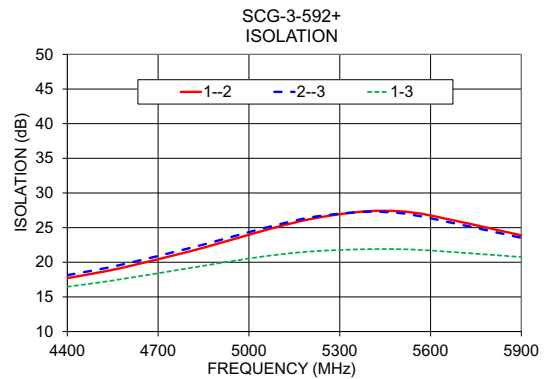
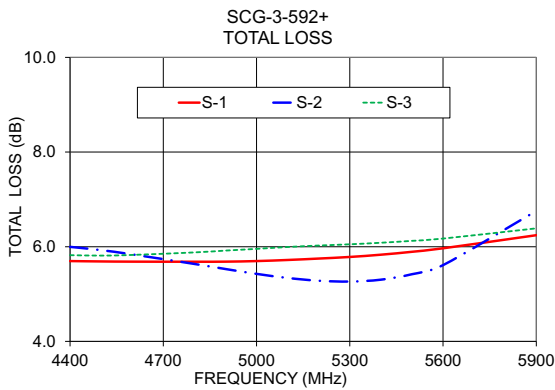
NOTES:

1. LINE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .0066±.0007, COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS LINE WIDTH MAY NEED TO BE MODIFIED.
2. UNIT FOOT PRINT IS OPTIMIZED FOR PERFORMANCE AND IS DIFFERENT FROM CASE STYLE GE0805C-1 RECOMMENDATIONS.
3. CHIP COMPONENT FOOT PRINT IS SHOWN FOR REFERENCE. FOR COMPONENT VALUE REFER TO TB-1018+.
4. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

Typical Performance Data

Freq. (MHz)	Total Loss ¹ (dB)			Amp. Unbal. (dB)	Isolation (dB)			Phase Unbal. (deg.)	Return Loss (dB)		
	S-1	S-2	S-3		1-2	1-3	2-3		S	1	2
4400	5.70	6.00	5.82	0.21	17.71	16.47	18.14	6.17	13.92	27.56	22.01
4500	5.69	5.93	5.81	0.21	18.49	17.05	18.94	6.19	14.02	26.97	21.85
4600	5.68	5.84	5.83	0.19	19.39	17.71	19.85	6.28	13.91	25.95	22.19
4800	5.68	5.64	5.88	0.20	21.52	19.14	22.00	6.48	13.39	24.52	22.17
4900	5.68	5.53	5.92	0.23	22.72	19.85	23.15	6.48	13.10	23.95	23.02
5000	5.70	5.43	5.95	0.26	23.96	20.54	24.35	6.50	12.81	23.36	23.51
5100	5.72	5.34	5.99	0.27	25.17	21.12	25.48	6.51	12.58	22.61	23.11
5200	5.75	5.28	6.02	0.28	26.21	21.54	26.45	6.56	12.47	21.62	23.36
5300	5.78	5.26	6.05	0.27	26.93	21.77	27.00	6.55	12.43	20.76	23.38
5400	5.83	5.30	6.08	0.26	27.38	21.89	27.30	6.62	12.29	19.88	22.60
5500	5.89	5.42	6.12	0.27	27.35	21.88	27.09	6.79	12.05	18.75	22.35
5600	5.97	5.61	6.17	0.28	26.76	21.70	26.35	7.10	11.69	17.74	21.63
5900	6.24	6.76	6.39	0.35	23.88	20.75	23.53	7.52	10.34	15.58	17.80

1. Total Loss = Insertion Loss + 4.8dB splitter loss.



Additional 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.
- C. 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/MCLStore/terms.jsp

