

Surface Mount Power Splitter/Combiner

SCQA-4-13+

4 Way Quadrifilar 50Ω 600 to 1000 MHz



CASE STYLE: CK1704

Maximum Ratings

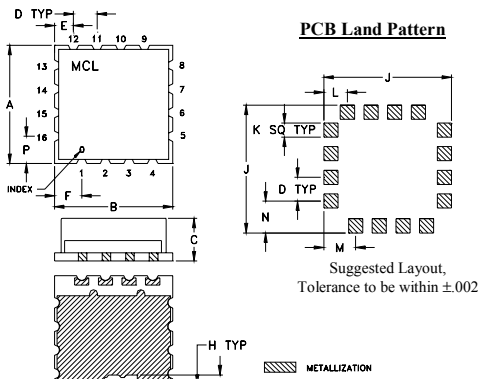
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W max.
Internal Dissipation	0.20W max.

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

Pin Connections

SUM PORT	10
PORT 1 (0°)	1
PORT 2 (90°)	2
PORT 3 (180°)	3
PORT 4 (270°)	4
GROUND	5,6,7,8,9,11,12

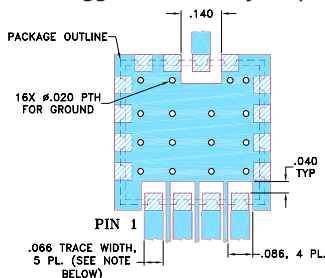
Outline Drawing



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J
.500	.500	.180	.100	.080	.115	.060	.040	.540
12.70	12.70	4.57	2.54	2.03	2.92	1.52	1.02	13.72
K	L	M	N	P	Q	T	wt. grams	
.060	.100	.135	.135	.115	.140	.080	1.0	
1.52	2.54	3.43	3.43	2.92	3.56	2.03		

Demo Board MCL P/N: TB-652+ Suggested PCB Layout (PL-368)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; 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

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-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp

Features

- good isolation, 20 dB typ.
- good phase unbalance, 5 deg.
- good matching VSWR, 1.2:1 typ.

Applications

- cellular
- GSM
- PDC
- CDMA

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

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		600	—	1000	MHz
Insertion Loss Above 6.0 dB	600-1000	—	1.5	2.8	dB
Isolation	600-1000	14	20	—	dB
Phase Unbalance*	600-1000	—	5.0	10.0	Degree
Amplitude Unbalance	600-1000	—	0.8	1.4	dB
VSWR (Port S)	600-1000	—	1.5	1.9	:1
VSWR (Port 1-4)	600-1000	—	1.2	1.5	:1

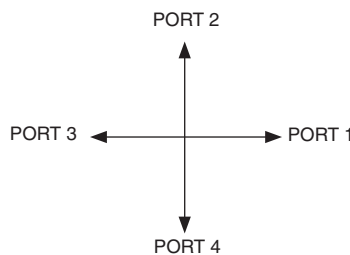
*Phase Unbalance is referenced insertion phase at 0° port.

Typical Performance Data

Freq. (MHz)	Total Loss ¹ (dB)	Amp. Unbal. (dB)	Insertion Phase (deg)	Phase Unbalance (deg.)				Isolation (dB)			VSWR S	VSWR 1	VSWR 2	VSWR 3	VSWR 4
				S-1	0°	90°	180°	270°	1-2	2-3					
600.0	7.92	0.99	-28.11	0.00	91.06	179.43	268.31	20.94	24.31	40.32	1.55	1.10	1.10	1.22	1.25
650.0	7.70	0.50	-56.53	0.00	91.45	182.06	270.67	22.04	26.35	35.99	1.58	1.13	1.16	1.21	1.24
700.0	7.61	0.25	-84.13	0.00	91.87	183.70	272.08	20.95	26.66	28.17	1.56	1.17	1.23	1.18	1.22
720.0	7.59	0.30	-94.99	0.00	92.04	184.07	272.32	20.38	26.42	26.48	1.55	1.17	1.25	1.17	1.22
740.0	7.58	0.42	-105.81	0.00	92.20	184.30	272.45	19.85	26.13	25.15	1.53	1.18	1.27	1.15	1.21
760.0	7.58	0.53	-116.56	0.00	92.38	184.39	272.42	19.38	25.84	24.09	1.51	1.17	1.28	1.13	1.20
780.0	7.59	0.61	-127.27	0.00	92.58	184.35	272.26	18.99	25.61	23.23	1.49	1.17	1.29	1.11	1.19
800.0	7.60	0.68	-137.96	0.00	92.76	184.19	272.01	18.68	25.44	22.53	1.47	1.16	1.29	1.09	1.19
820.0	7.61	0.73	-148.66	0.00	92.94	183.98	271.67	18.43	25.36	21.95	1.45	1.15	1.30	1.07	1.18
840.0	7.64	0.75	-159.39	0.00	93.11	183.69	271.24	18.25	25.41	21.47	1.42	1.14	1.29	1.05	1.17
860.0	7.67	0.75	-170.15	0.00	93.27	183.35	270.95	18.11	25.53	21.05	1.41	1.12	1.29	1.03	1.16
880.0	7.71	0.73	-179.02	0.00	93.47	177.06	270.21	18.00	25.72	20.67	1.39	1.11	1.28	1.02	1.15
900.0	7.76	0.69	-168.13	0.00	93.66	182.51	269.61	17.92	25.97	20.31	1.38	1.09	1.26	1.02	1.15
960.0	7.98	0.45	-134.81	0.00	94.20	181.03	267.56	17.65	26.92	19.22	1.38	1.09	1.21	1.07	1.14
1000.0	8.25	0.72	-111.86	0.00	94.63	179.90	265.97	17.18	27.20	18.26	1.42	1.13	1.17	1.10	1.16

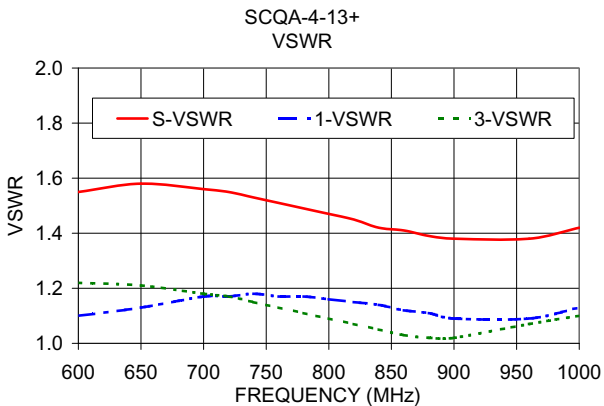
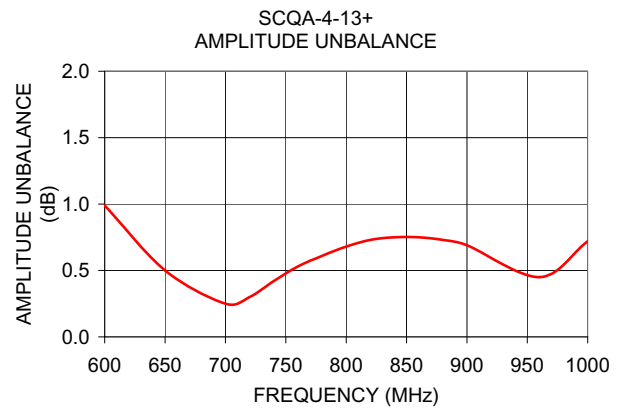
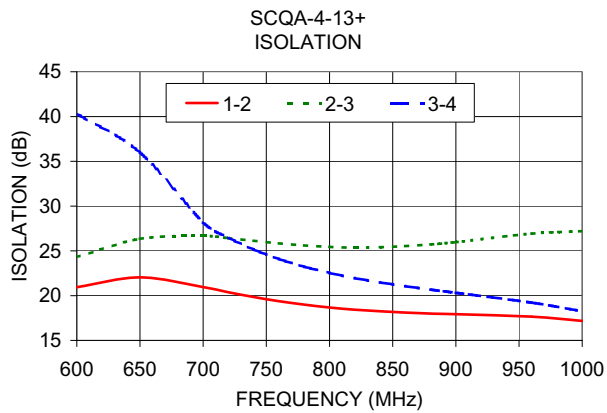
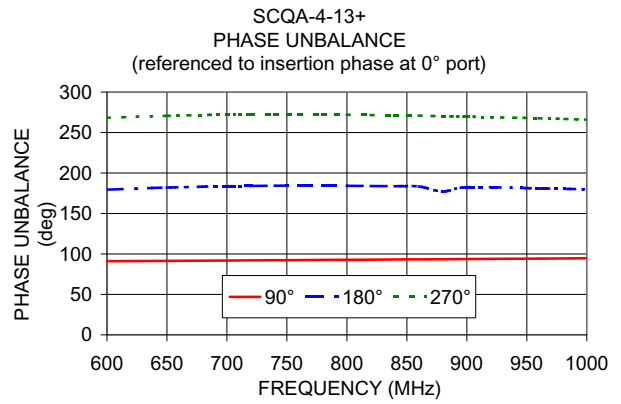
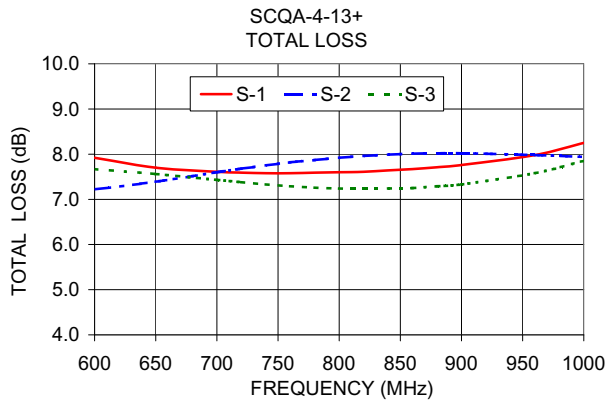
1. Total Loss = Insertion Loss + 6dB splitter loss.

Phase Diagram



Electrical Configuration





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