Surface Mount

Power Splitter/Combiner

SCQA-4-13+

4 Way Quadrifilar 50Ω 600 to 1000 MHz

CASE STYLE: CK1704
PRICE: $24.95 ea. QTY. (1-9)

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

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

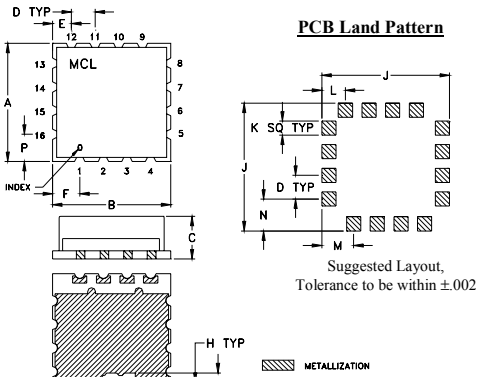
Features

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

Applications

- cellular
- GSM
- PDC
- CDMA

Outline Drawing

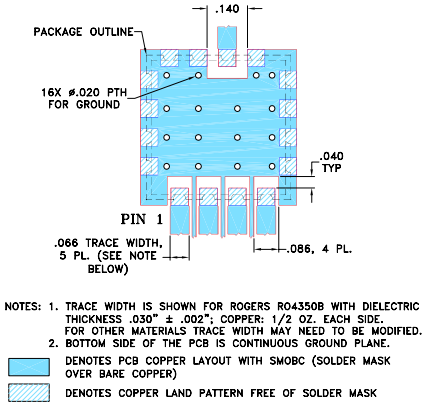


Outline Dimensions (inch / mm)

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.
.060	.100	.135	.135	.115	.140	.080	grams
1.52	2.54	3.43	3.43	2.92	3.56	2.03	1.0

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

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

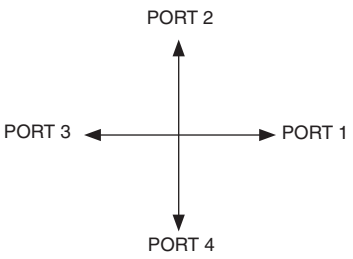
*Phase Unbalance is referenced insertion phase at 0° port.

Typical Performance Data

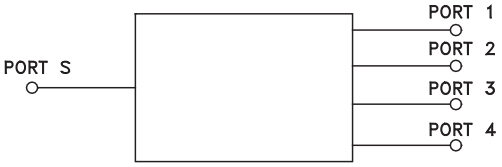
Freq. (MHz)	Total Loss[1] (dB)	Amp. Unbal. (dB)	Insertion Phase (deg)	Phase Unbalance (deg.)				Isolation (dB)			VSWR S	VSWR 1	VSWR 2	VSWR 3	VSWR 4
	S-1		S-1	0°	90°	180°	270°	1-2	2-3	3-4					
600.0	7.92	0.99	-28.11	0.00	91.06	179.43	268.31	20.94	24.31	40.32	1.55	1.10	1.10	1.22	1.25
650.0	7.70	0.50	-56.53	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



Notes
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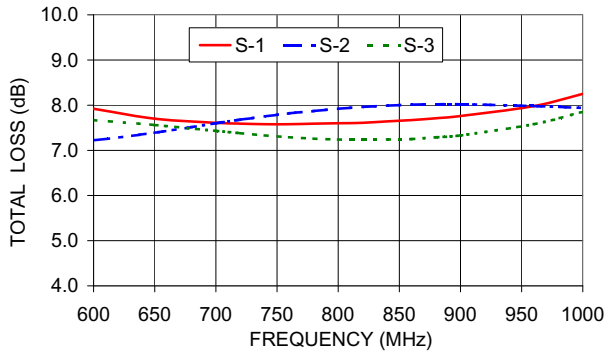
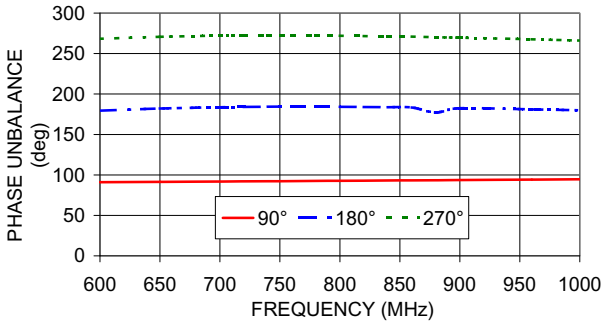
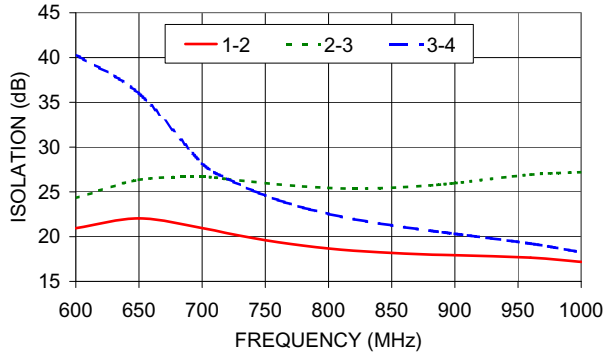
SCQA-4-13+
TOTAL LOSS



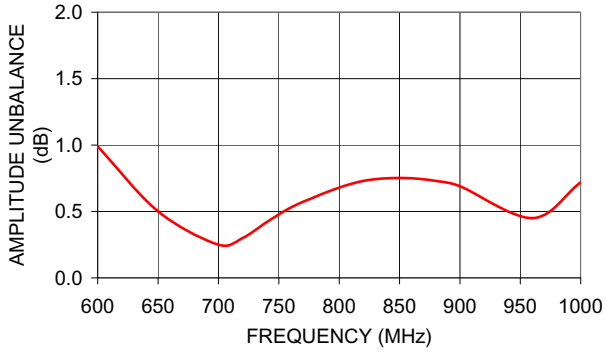
SCQA-4-13+
PHASE UNBALANCE
(referenced to insertion phase at 0° port)



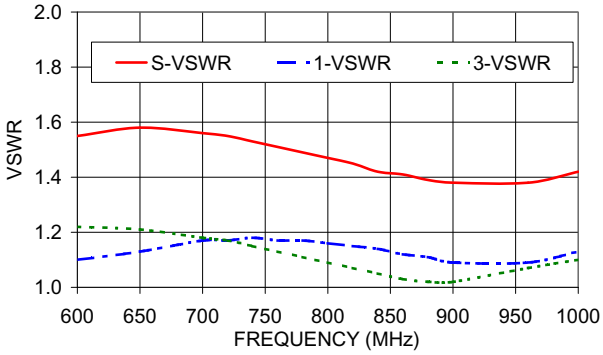
SCQA-4-13+
ISOLATION



SCQA-4-13+
AMPLITUDE UNBALANCE



SCQA-4-13+
VSWR



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