

Surface Mount Power Splitter/Combiner

SCQA-4-232+

4 Way Quadrifilar 50Ω 1700 to 2300 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

Features

- good isolation, 24 dB typ.
- good phase unbalance, 5 deg.
- good matching VSWR, 1.2:1 typ.

Applications

- GPS phase array antenna

+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		1700	—	2300	MHz
Insertion Loss Above 6.0 dB	1700 - 2300	—	1.6	2.8	dB
Isolation	1700 - 2300	16	24	—	dB
Phase Unbalance*	1700 - 2300	—	5.0	12.0	Degree
Amplitude Unbalance	1700 - 2300	—	1.3	1.8	dB
VSWR (Port S)	1700 - 2300	—	1.3	1.55	:1
VSWR (Port 1-4)	1700 - 2300	—	1.35	1.65	:1

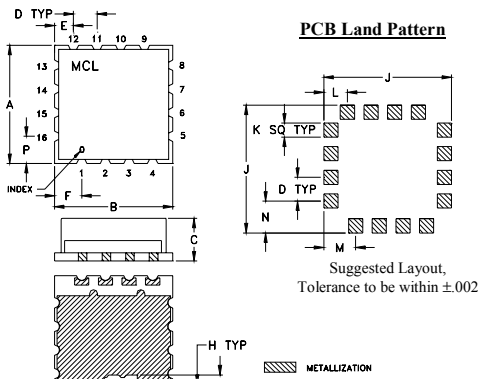
*Phase Unbalance is referenced insertion phase at 0° port.

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					
1700.0	8.25	1.39	-174.46	0.00	91.94	180.76	271.29	23.36	17.36	21.66	1.19	1.08	1.14	1.12	1.15
1750.0	8.15	1.32	164.43	0.00	92.16	180.55	271.18	25.14	17.69	23.15	1.15	1.09	1.16	1.11	1.16
1800.0	8.07	1.27	143.68	0.00	92.39	180.27	270.98	26.75	18.07	24.93	1.11	1.12	1.18	1.11	1.17
1850.0	8.02	1.22	123.20	0.00	92.64	179.90	290.71	27.77	18.48	26.95	1.07	1.15	1.19	1.10	1.18
1900.0	7.99	1.19	102.98	0.00	92.87	179.49	270.41	27.90	18.82	29.08	1.05	1.18	1.20	1.11	1.19
2000.0	7.99	1.18	63.21	0.00	93.29	178.51	269.41	27.00	19.13	33.28	1.10	1.24	1.18	1.13	1.19
2050.0	8.02	1.19	43.65	0.00	93.52	177.93	269.05	26.77	19.03	35.75	1.14	1.27	1.16	1.15	1.18
2160.0	8.12	1.27	1.31	0.00	94.01	176.44	267.49	27.33	18.46	42.23	1.20	1.32	1.09	1.17	1.13
2180.0	8.14	1.29	-6.32	0.00	94.08	176.15	267.17	27.54	18.36	39.91	1.21	1.33	1.07	1.18	1.12
2190.0	8.15	1.30	-10.13	0.00	94.13	176.00	267.01	27.63	18.31	38.53	1.21	1.33	1.07	1.18	1.12
2200.0	8.17	1.31	-13.93	0.00	94.17	175.86	266.84	27.73	18.26	37.19	1.22	1.33	1.06	1.18	1.11
2240.0	8.21	1.35	-29.07	0.00	94.33	175.22	266.12	27.95	18.08	32.59	1.23	1.33	1.03	1.18	1.10
2260.0	8.24	1.37	-36.63	0.00	94.40	174.93	265.75	27.91	18.01	30.74	1.23	1.33	1.02	1.18	1.10
2280.0	8.26	1.40	-44.19	0.00	94.49	174.62	265.37	27.71	17.97	29.13	1.23	1.33	1.02	1.18	1.10
2300.0	8.29	1.43	-51.73	0.00	94.54	174.30	264.99	27.36	17.94	27.69	1.23	1.33	1.04	1.18	1.11

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

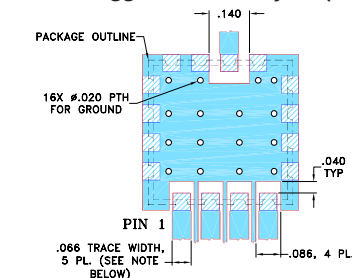
Outline Drawing



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 R04350B 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

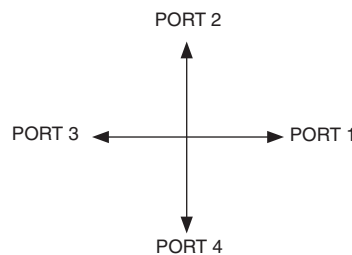
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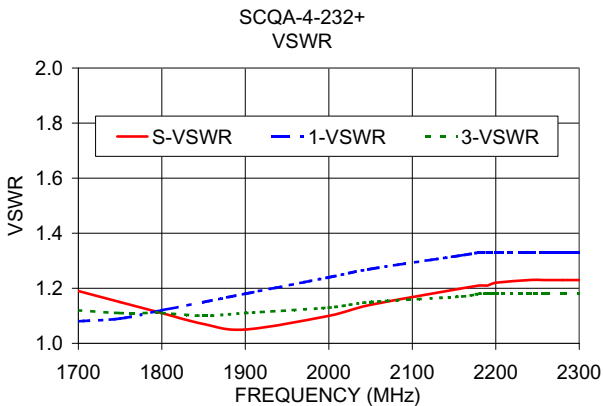
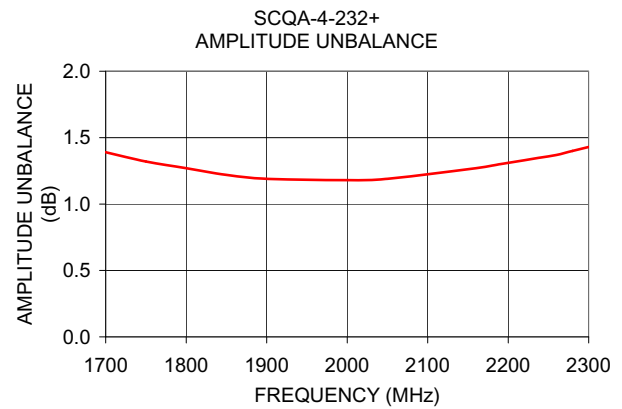
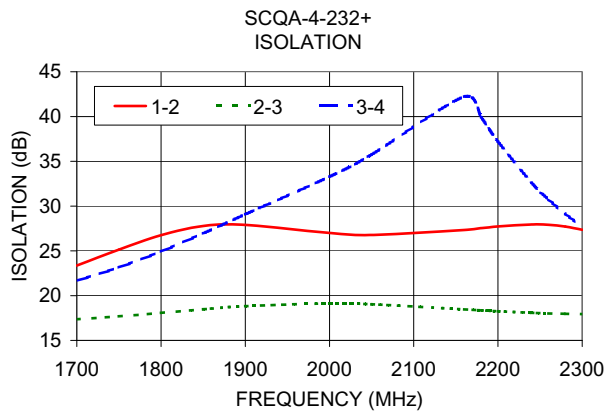
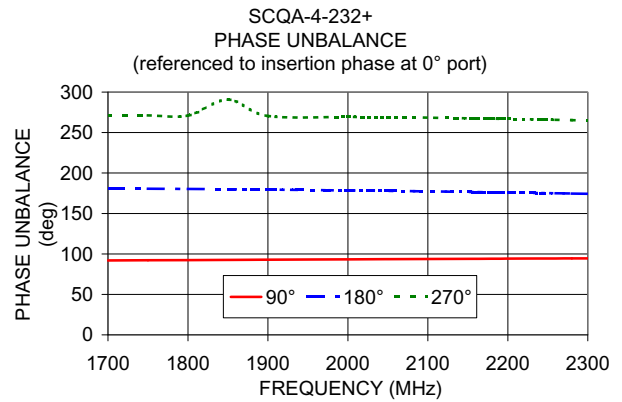
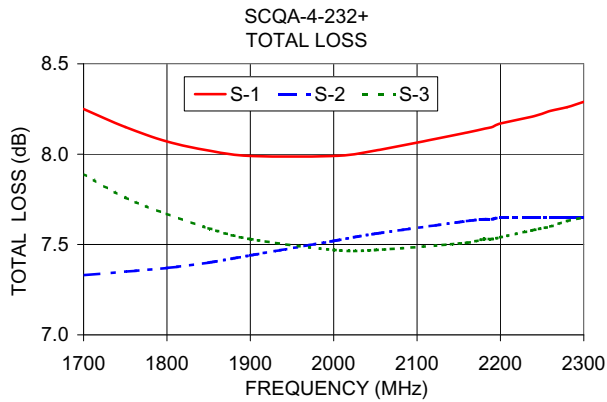
REV. B
M151107
SCQA-4-232+
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Page 1 of 2

Phase Diagram



Electrical Configuration





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