

# Ultra-Small Ceramic Power Splitter/Combiner

## QCN-12+ QCN-12

2 Way-90° 50Ω 800 to 1375 MHz



### Maximum Ratings

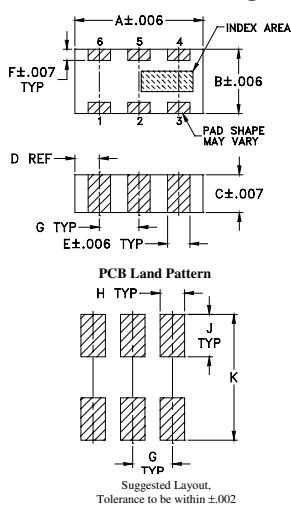
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	15W* max.

\* Derate linearly to 7W at 100°C ambient.

### Pin Connections

SUM PORT	1
PORT 1 (0°)	4
PORT 2 (+90°)	6
GROUND	2,5
50 OHM TERM EXTERNAL	3

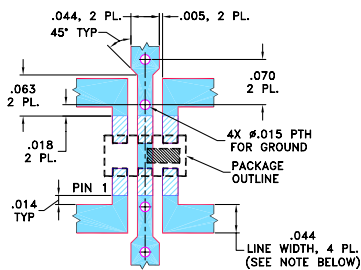
### Outline Drawing



### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G	H	J	K	wt
										grams
.126	.063	.035	.024	.022	.011	.039	.024	.042	.123	
3.20	1.60	0.89	0.61	0.56	0.28	0.99	0.61	1.07	3.12	.020

### Demo Board MCL P/N: TB-255+ Suggested PCB Layout (PL-131)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; 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

### Features

- low insertion loss, 0.4 dB typ.
- wrap-around terminal for excellent solderability
- ultra small, 0.12"X0.06"X0.035"

### Applications

- cellular
- satellite distribution
- GSM
- balanced amplifiers
- modulators

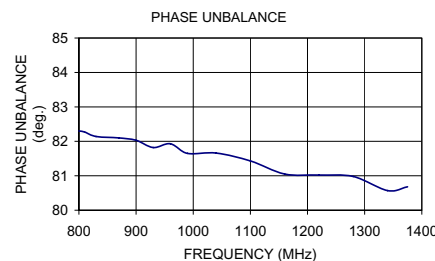
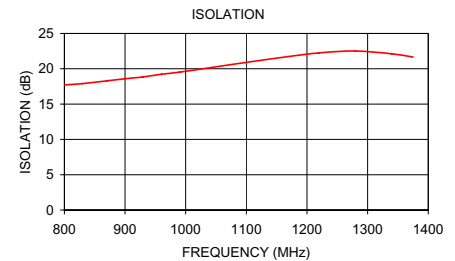
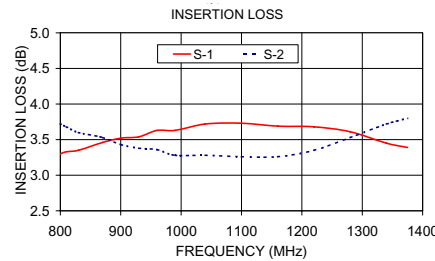
### Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) Avg. of Coupled Outputs less 3 dB		PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)	VSWR (:1)
	Typ.	Min.	Typ.	Max.	Typ. Max.	Typ. Max.	Typ.
800-1375							
800-1000	19	14	0.4	0.8	9	12	1.3
1000-1375	19	14	0.6	1.0	9	13	1.5

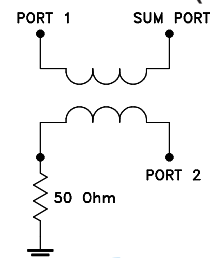
1. For applications requiring DC voltage to be applied to the RF ports, add suffix letter "D" to part no. DC resistance to ground is 100 Mohms min.

### Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
800.00	3.30	3.72	0.42	17.70	82.30	1.26	1.31	1.31
810.00	3.33	3.68	0.35	17.77	82.27	1.26	1.31	1.31
830.00	3.35	3.60	0.24	17.90	82.14	1.25	1.31	1.31
870.00	3.46	3.53	0.07	18.29	82.10	1.24	1.30	1.31
900.00	3.52	3.43	0.08	18.58	82.03	1.22	1.29	1.31
930.00	3.54	3.38	0.16	18.85	81.82	1.21	1.29	1.30
960.00	3.63	3.36	0.27	19.22	81.93	1.20	1.28	1.30
990.00	3.63	3.28	0.35	19.52	81.65	1.19	1.28	1.31
1040.00	3.72	3.28	0.44	20.15	81.66	1.17	1.27	1.31
1100.00	3.73	3.26	0.46	20.91	81.43	1.15	1.27	1.32
1160.00	3.69	3.26	0.44	21.62	81.05	1.13	1.27	1.33
1220.00	3.68	3.35	0.33	22.25	81.02	1.12	1.28	1.36
1280.00	3.61	3.53	0.08	22.51	80.98	1.12	1.29	1.39
1340.00	3.45	3.72	0.27	22.12	80.57	1.14	1.31	1.44
1375.00	3.39	3.8	0.42	21.66	80.68	1.17	1.33	1.47



### electrical schematic (Note 1)



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IF/RF MICROWAVE COMPONENTS

REV. F  
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QCN-12  
ED-10849/2  
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090304