

# Ultra-Small Ceramic Power Splitter/Combiner

## QCN-8+

2 Way-90° 50Ω 450 to 750 MHz



CASE STYLE: FV1206-1

### Maximum Ratings

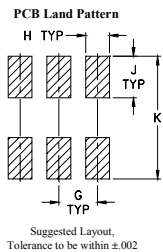
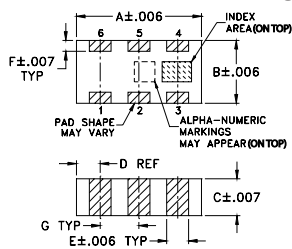
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	15W* max.

\* Derate linearly to 7W at 100°C ambient. Permanent damage may occur if any of these limits are exceeded.

### Pin Connections

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

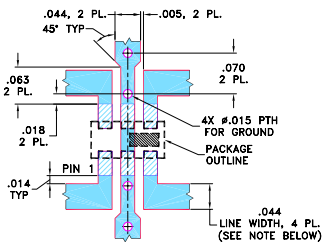
### Outline Drawing



### Outline Dimensions (inch/mm)

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

### 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.
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### Features

- low insertion loss, 0.6 dB typ.
- wrap-around terminal for excellent solderability
- ultra small, 0.12"X0.06"X0.035"

### Applications

- UHF
- balanced amplifiers
- modulators
- point to point radio

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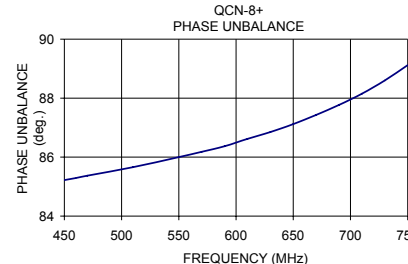
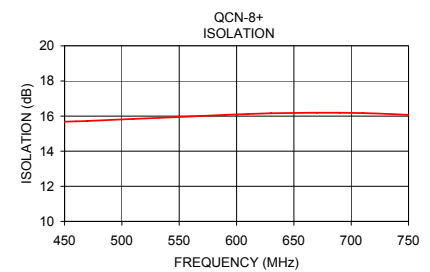
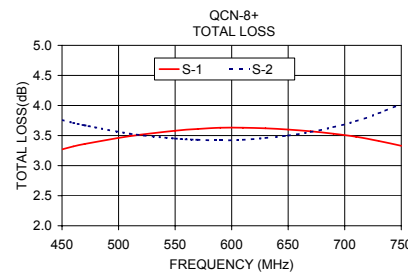
### Electrical Specifications

FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB		PHASE UNBALANCE (Degrees)		AMPLITUDE UNBALANCE (dB)		VSWR (:1)
	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	
$f_L$ - $f_U$									Typ.
450-750	16	13	0.6	0.9	5	8	0.5	1.0	1.4
470-700	16	13	0.5	0.8	5	8	0.3	0.8	1.4

### Typical Performance Data

Frequency (MHz)	Total Loss <sup>1</sup> (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
450.00	3.27	3.76	0.49	15.68	85.22	1.41	1.41	1.38
460.00	3.32	3.71	0.40	15.70	85.29	1.40	1.41	1.38
470.00	3.36	3.67	0.31	15.72	85.37	1.40	1.41	1.37
510.00	3.49	3.53	0.04	15.84	85.66	1.39	1.40	1.36
550.00	3.58	3.45	0.13	15.95	86.00	1.37	1.40	1.36
570.00	3.61	3.43	0.18	16.01	86.18	1.37	1.40	1.36
590.00	3.63	3.42	0.20	16.07	86.37	1.36	1.40	1.36
610.00	3.63	3.43	0.20	16.12	86.62	1.36	1.40	1.36
630.00	3.62	3.46	0.17	16.16	86.85	1.36	1.40	1.37
650.00	3.60	3.50	0.11	16.18	87.12	1.36	1.41	1.38
670.00	3.57	3.56	0.01	16.19	87.43	1.37	1.41	1.39
690.00	3.53	3.64	0.11	16.19	87.77	1.37	1.43	1.40
710.00	3.48	3.74	0.27	16.17	88.15	1.38	1.44	1.42
730.00	3.41	3.87	0.46	16.13	88.60	1.40	1.46	1.45
750.00	3.33	4.03	0.70	16.07	89.12	1.41	1.48	1.48

1. Total Loss = Insertion Loss + 3dB splitter loss.



### electrical schematic

