

# Ultra-Small Ceramic Power Splitter/Combiner

## QCN-25+

2 Way-90° 50Ω 1350 to 2450 MHz



CASE STYLE: FV1206-1

### Maximum Ratings

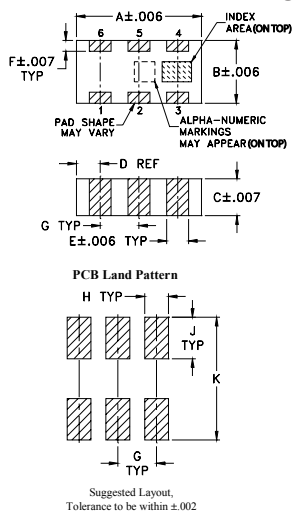
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	15W* max.

\* 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

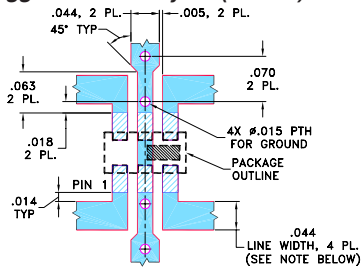
### Outline Drawing



### 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 R04350B 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.  
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](http://www.minicircuits.com/MCLStore/terms.jsp)

### Features

- low insertion loss, 0.4 dB typ.
- high isolation, 25 dB typ.
- wrap-around terminal for excellent solderability
- ultra small, 0.12"X0.06"X0.035"
- patent pending

### Applications

- GPS
- PCS/DCS
- UMTS
- balanced amplifiers
- modulators

### Electrical Specifications

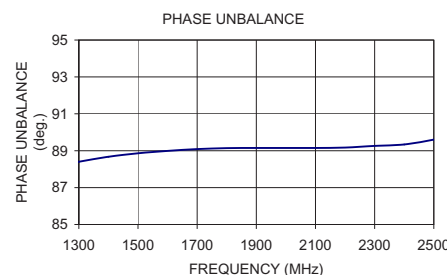
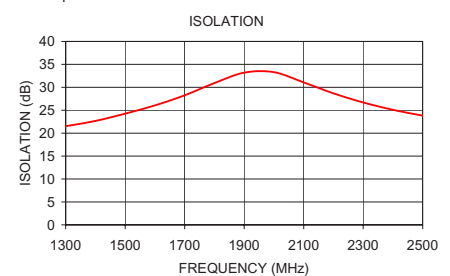
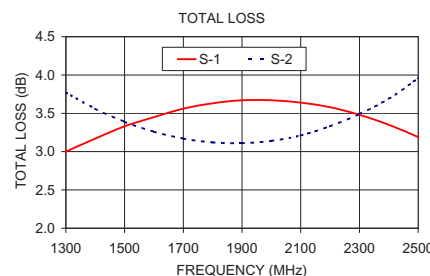
FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB		PHASE UNBALANCE (Degrees)		AMPLITUDE UNBALANCE (dB)		VSWR (:1)
	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.
1350-2450									
1350-1950	25	18	0.4	0.7	1	5	0.5	1.1	1.2
1950-2200	25	20	0.4	0.7	1	4	0.5	1.0	1.15
2200-2450	25	18	0.6	0.9	1	4	0.5	1.1	1.2

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)	Total Loss <sup>1</sup> (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
1275.00	2.95	3.83	0.88	21.24	88.32	1.19	1.20	1.18
1300.00	3.00	3.77	0.77	21.52	88.40	1.18	1.19	1.17
1400.00	3.17	3.56	0.38	22.67	88.67	1.15	1.16	1.14
1500.00	3.33	3.39	0.06	24.25	88.86	1.13	1.13	1.11
1600.00	3.45	3.26	0.20	26.05	88.99	1.11	1.10	1.09
1700.00	3.56	3.17	0.38	28.25	89.09	1.09	1.07	1.07
1800.00	3.63	3.12	0.50	30.93	89.14	1.08	1.05	1.05
1900.00	3.67	3.11	0.56	33.19	89.15	1.08	1.04	1.06
2000.00	3.67	3.14	0.53	33.29	89.15	1.08	1.04	1.07
2100.00	3.64	3.21	0.43	31.07	89.15	1.09	1.05	1.08
2200.00	3.58	3.33	0.25	28.67	89.17	1.11	1.08	1.10
2300.00	3.48	3.49	0.00	26.70	89.26	1.13	1.11	1.12
2400.00	3.35	3.69	0.35	25.09	89.34	1.16	1.14	1.16
2500.00	3.19	3.96	0.78	23.82	89.60	1.19	1.17	1.19
2550.00	3.10	4.13	1.03	23.23	89.77	1.21	1.19	1.21

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



### electrical schematic (Note 1)

