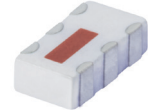


# Ultra-Small Ceramic Power Splitter/Combiner

## QCN-27D

2 Way-90° 50Ω 1700 to 2700 MHz



Generic photo used for illustration purposes only

CASE STYLE: FV1206-1

### Maximum Ratings

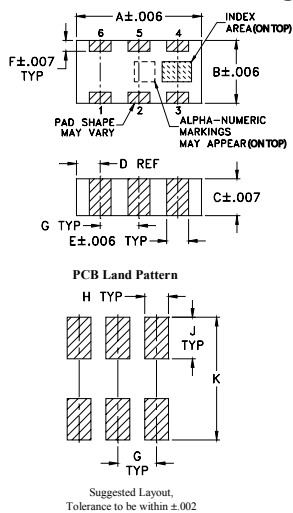
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	15W* max.

\* 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

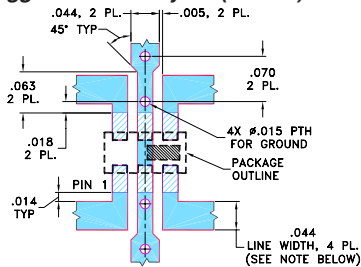
### Outline Drawing



### 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

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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, 26 dB typ.
- wrap-around terminal for excellent solderability
- ultra small, 0.12"X0.06"X0.035"
- patent pending

### Applications

- PCS/DCS
- MMDS
- ISM
- balanced amplifiers
- modulators

### Electrical Specifications

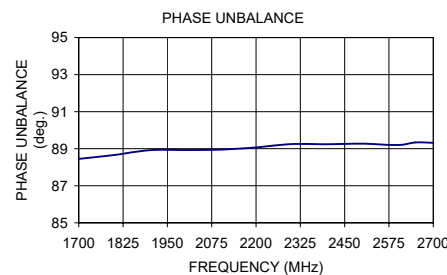
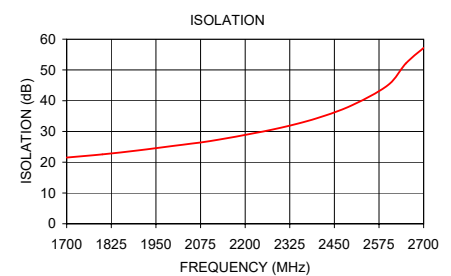
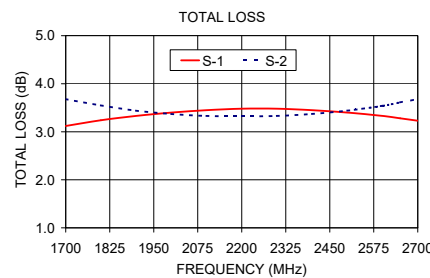
FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB		PHASE UNBALANCE (Degrees)		AMPLITUDE UNBALANCE (dB)		VSWR (:1)
	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	
$f_L$ - $f_U$									Typ.
1700-2700	21	18	0.4	0.7	3	6	0.5	1.0	1.2
1700-1800	22	18	0.4	0.7	2	6	0.3	0.8	1.2
1800-2000	30	20	0.4	0.7	3	6	0.2	0.8	1.2
2000-2400	30	20	0.5	0.9	3	6	0.6	1.0	1.2
2400-2700									

1. For applications requiring DC voltage to be applied to the RF ports. 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						
1700.00	3.12	3.68	0.56	21.52	88.45	1.23	1.26	1.19
1800.00	3.24	3.55	0.31	22.55	88.66	1.21	1.24	1.17
1900.00	3.33	3.44	0.12	23.84	88.92	1.18	1.23	1.14
2000.00	3.40	3.37	0.03	25.33	88.93	1.16	1.21	1.12
2100.00	3.45	3.33	0.12	26.85	88.95	1.14	1.20	1.10
2200.00	3.48	3.32	0.16	28.90	89.07	1.12	1.19	1.09
2300.00	3.48	3.33	0.15	31.22	89.25	1.10	1.18	1.09
2400.00	3.45	3.37	0.08	34.26	89.24	1.08	1.17	1.10
2500.00	3.40	3.44	0.04	38.56	89.27	1.06	1.17	1.11
2600.00	3.33	3.54	0.22	45.07	89.20	1.04	1.16	1.12
2650.00	3.28	3.61	0.33	52.09	89.34	1.03	1.16	1.13
2700.00	3.23	3.68	0.45	57.17	89.32	1.01	1.16	1.14

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



### electrical schematic (Note 1)

