

Ultra-Small Ceramic Power Splitter/Combiner

QCN-7

2 Way-90° 50Ω 425 to 675 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.

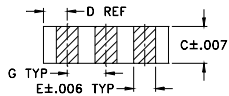
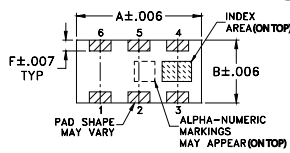
* Derate linearly to 7W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

Pin Connections

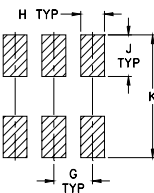
SUM PORT	1
PORT 1 (0°)	4
PORT 2 (+90°)	6
GROUND	2,5
50 OHM TERM EXTERNAL	3

Product Marking: D

Outline Drawing



PCB Land Pattern



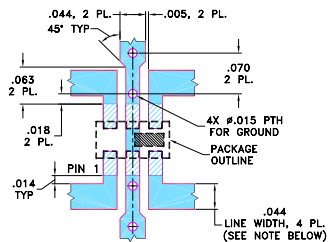
Suggested Layout,
Tolerance to be within ±0.002

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

Features

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

Applications

- UHF
- balanced amplifiers
- modulators

Electrical Specifications

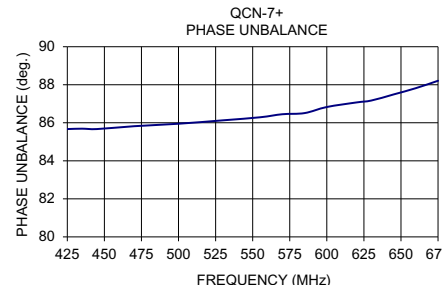
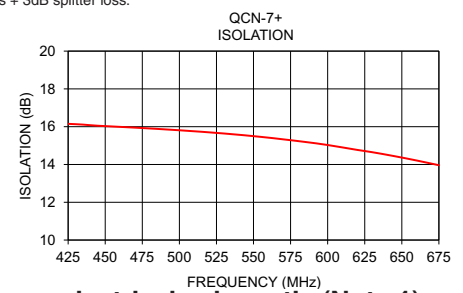
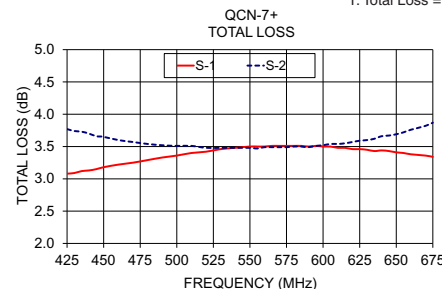
FREQ. RANGE (MHz)	ISOLATION (dB)		INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB		PHASE UNBALANCE (Degrees)		AMPLITUDE UNBALANCE (dB)		VSWR (:1)
	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	
f_L - f_U									Typ.
425-675									
425-550	17	13	0.4	0.7	2	8	0.5	1.0	1.3
550-675	17	11	0.6	1.1	4	8	0.5	1.0	1.4

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 ¹ (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
425.00	3.08	3.77	0.69	16.15	85.67	1.32	1.30	1.26
435.00	3.12	3.73	0.60	16.11	85.69	1.32	1.30	1.26
445.00	3.15	3.66	0.51	16.05	85.67	1.32	1.29	1.26
470.00	3.25	3.57	0.31	15.95	85.82	1.32	1.29	1.26
500.00	3.36	3.51	0.15	15.81	85.95	1.32	1.28	1.26
530.00	3.46	3.48	0.02	15.64	86.13	1.32	1.28	1.26
555.00	3.50	3.47	0.03	15.46	86.29	1.33	1.29	1.27
570.00	3.51	3.49	0.02	15.33	86.45	1.34	1.29	1.27
585.00	3.51	3.50	0.00	15.19	86.51	1.35	1.29	1.28
600.00	3.50	3.52	0.02	15.03	86.83	1.35	1.30	1.29
620.00	3.46	3.57	0.11	14.77	87.07	1.37	1.31	1.30
630.00	3.45	3.60	0.15	14.65	87.17	1.38	1.32	1.31
645.00	3.43	3.67	0.24	14.44	87.49	1.40	1.33	1.33
660.00	3.38	3.76	0.38	14.21	87.82	1.42	1.34	1.35
675.00	3.34	3.87	0.53	13.96	88.21	1.44	1.36	1.37

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



electrical schematic (Note 1)

