

Ultra-Small Ceramic Power Splitter/Combiner

QCN-7D+

2 Way-90° 50Ω 425 to 675 MHz

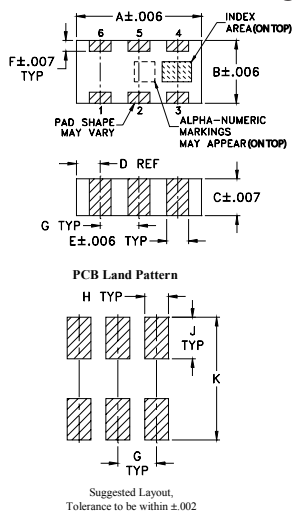
Maximum Ratings

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. 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

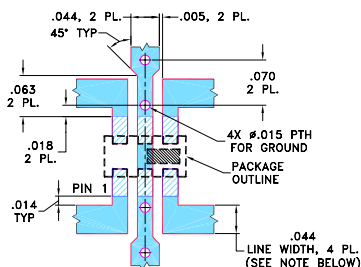
Outline Drawing



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.
- 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

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

Generic photo used for illustration purposes only
CASE STYLE: FV1206-1

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000, 3000

Electrical Specifications

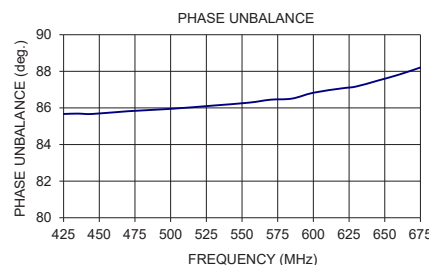
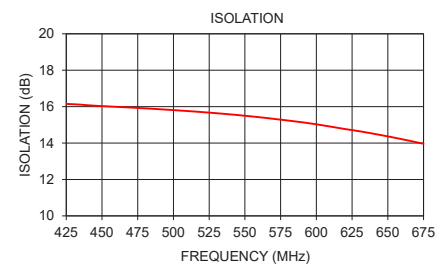
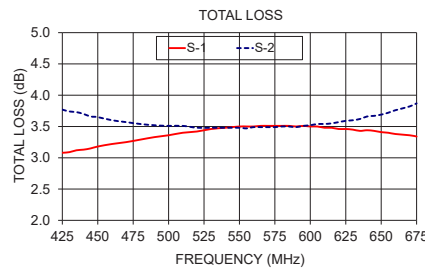
FREQ. RANGE (MHz)	ISOLATION (dB)	INSERTION LOSS (dB) Avg. of Coupled Outputs ABOVE 3 dB	PHASE UNBALANCE (Degrees)	AMPLITUDE UNBALANCE (dB)	VSWR (:1)
$f_L - f_U$	Typ. Min.	Typ. Max.	Typ. Max.	Typ. Max.	Typ.
425-675					
425-550	17 13	0.4 0.7	2 8	0.5 1.0	1.3
550-675	17 11	0.6 1.1	4 8	0.5 1.0	1.4

1. For applications requiring DC voltage to be applied to the RF ports. DC resistance to ground is 100 Mohms min.

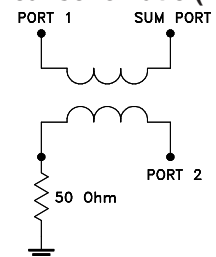
Typical Performance Data

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)



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