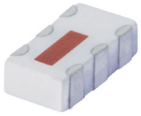
ULTRA-SMALL CERAMIC

Power Splitter/Combiner QCN-25AT+

2 Way-90° 50Ω 1350 to 2450 MHz

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
- AEC-Q200 qualified component family



Generic photo used for illustration purposes only

CASE STYLE: FV1206-1

+RoHS Compliant
The +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

APPLICATIONS

- Automotive

ELECTRICAL SPECIFICATIONS[1] AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		1350		2450	MHz
Insertion Loss, above 3.0 dB	1350-1950 1950-2200 2200-2450		0.4 0.4 0.6	0.7 0.7 0.9	dB
Isolation	1350-1950 1950-2200 2200-2450	18 20 18	25 25 25		dB
Phase Unbalance	1350-1950 1950-2200 2200-2450		1 1 1	5 4 4	Degree
Amplitude Unbalance	1350-1950 1950-2200 2200-2450		0.5 0.5 0.5	1.1 1.0 1.1	dB
VSWR	1350-1950 1950-2200 2200-2450		1.2 1.15 1.2		(:1)

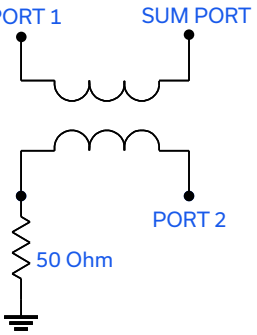
1. Tested on TB-255+ using QCN-25+ with evaluation board losses de-embedded.
2. For applications requiring DC voltage to be applied to the RF ports, add suffix letter "D" to part no. DC resistance to ground is 100 Mohms min.

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40°C to +105°C
Storage Temperature	-40°C to +105°C
Power Input (as a splitter)*	15 W max. at +25°C

* Derate linearly to 7 W at +105°C ambient.
Permanent damage may occur if any of these limits are exceeded.

ELECTRICAL SCHEMATIC (NOTE 1)



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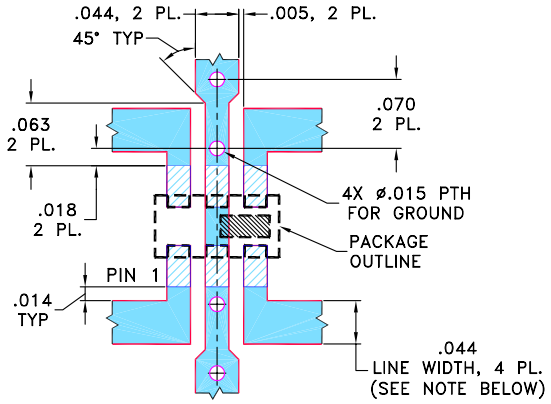
PIN CONNECTIONS

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

PRODUCT MARKING: N/A

DEMO BOARD MCL P/N: TB-255+

SUGGESTED PCB LAYOUT (PL-131)

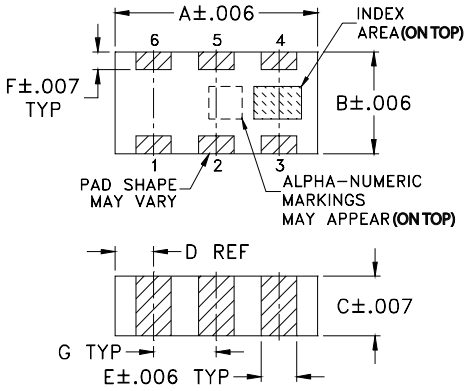


NOTES: 1.TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2.BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

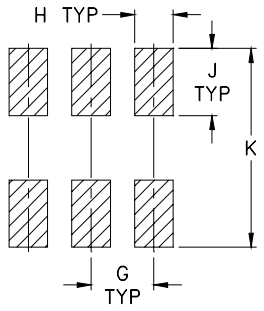
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

OUTLINE DRAWING



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

OUTLINE DIMENSIONS (Inches / 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

TAPE & REEL INFORMATION: F75

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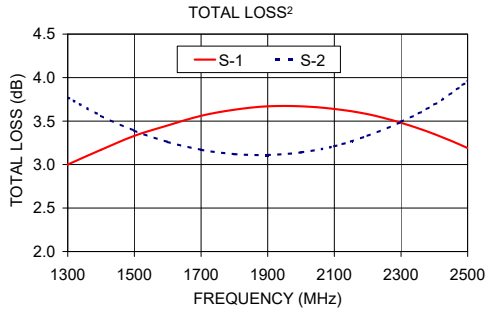
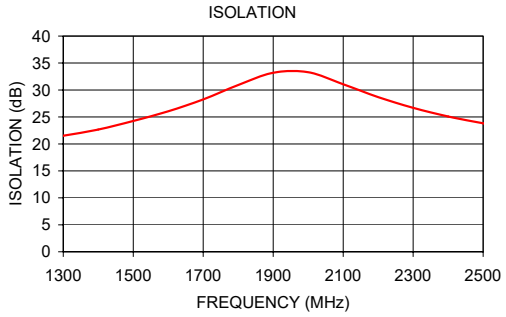
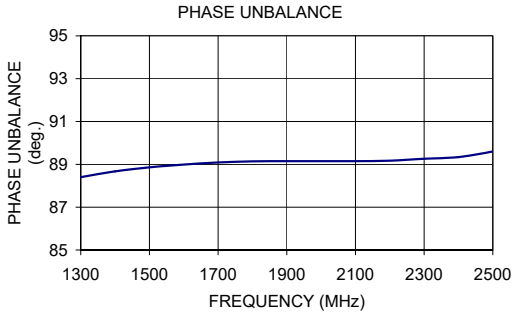
TYPICAL PERFORMANCE DATA

Frequency (MHz)	Total Loss[2] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR (:1)		
	S-1	S-2				S	1	2
1275	2.95	3.83	0.88	21.24	88.32	1.19	1.20	1.18
1300	3.00	3.77	0.77	21.52	88.40	1.18	1.19	1.17
1400	3.17	3.56	0.38	22.67	88.67	1.15	1.16	1.14
1500	3.33	3.39	0.06	24.25	88.86	1.13	1.13	1.11
1600	3.45	3.26	0.20	26.05	88.99	1.11	1.10	1.09
1700	3.56	3.17	0.38	28.25	89.09	1.09	1.07	1.07
1800	3.63	3.12	0.50	30.93	89.14	1.08	1.05	1.05
1900	3.67	3.11	0.56	33.19	89.15	1.08	1.04	1.06
2000	3.67	3.14	0.53	33.29	89.15	1.08	1.04	1.07
2100	3.64	3.21	0.43	31.07	89.15	1.09	1.05	1.08
2200	3.58	3.33	0.25	28.67	89.17	1.11	1.08	1.10
2300	3.48	3.49	0.00	26.70	89.26	1.13	1.11	1.12
2400	3.35	3.69	0.35	25.09	89.34	1.16	1.14	1.16
2500	3.19	3.96	0.78	23.82	89.60	1.19	1.17	1.19
2550	3.10	4.13	1.03	23.23	89.77	1.21	1.19	1.21

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







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-Circuits 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-Circuits' website at www.minicircuits.com/terms/viewterm.html