ULTRA-SMALL CERAMIC

Power Splitter/Combiner

QCN-27+

2 Way-90° 50Ω 1700 to 2700 MHz

FEATURES

- Low insertion loss, 0.4 dB typ.
- High isolation, 30 dB typ.
- Wrap-around terminal for excellent solderability
- Ultra small, 0.12"x0.06"x0.035"
- Patent pending



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

- Balanced amplifiers
- Modulators
- PCS/DCS
- MMDS
- ISM

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		1700		2700	MHz
Insertion Loss, above 3.0 dB	1700-1800 1800-2000 2000-2400 2400-2700		0.4 0.4 0.4 0.5	0.7 0.7 0.7 0.9	dB
Isolation	1700-1800 1800-2000 2000-2400 2400-2700	18 18 20 20	21 22 30 30		dB
Phase Unbalance	1700-1800 1800-2000 2000-2400 2400-2700		3 2 3 3	6 6 6 6	Degree
Amplitude Unbalance	1700-1800 1800-2000 2000-2400 2400-2700		0.5 0.3 0.2 0.6	1.0 0.8 0.8 1.0	dB
VSWR	1700-1800 1800-2000 2000-2400 2400-2700		1.2 1.2 1.2 1.2		(:1)

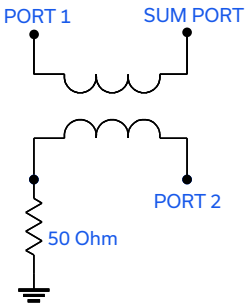
1. For applications requiring DC voltage to be applied to the RF ports, add suffix letter "D" to part no. DC resistance to ground is 100 Mohms min.

ABSOLUTE MAXIMUM RATINGS

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

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

ELECTRICAL SCHEMATIC (NOTE 1)



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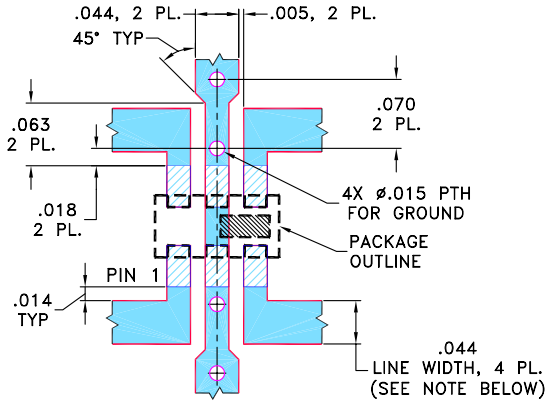
2 Way-90° 50Ω 1700 to 2700 MHz

PIN CONNECTIONS

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

PRODUCT MARKING: P4

DEMO BOARD MCL P/N: TB-QCN-27+
SUGGESTED PCB LAYOUT (PL-131)

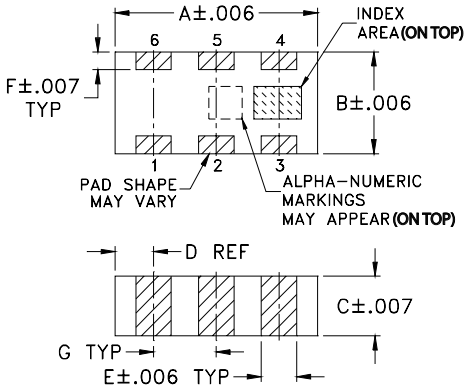


NOTES: 1.TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2.BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

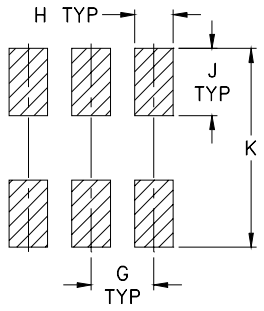
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

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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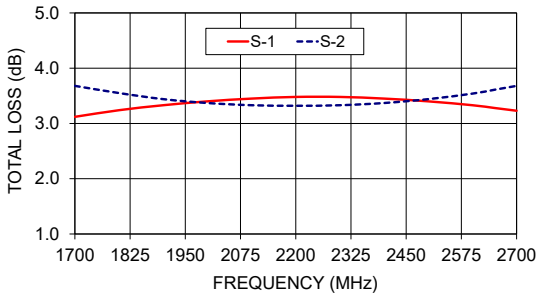
2 Way-90° 50Ω 1700 to 2700 MHz

TYPICAL PERFORMANCE DATA

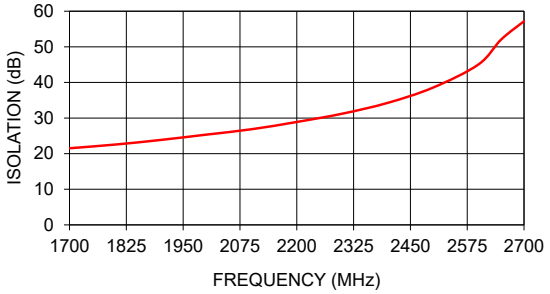
Frequency (MHz)	Total Loss[2] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR (:1)		
	S-1	S-2				S	1	2
1700	3.12	3.68	0.56	21.52	88.45	1.23	1.26	1.19
1800	3.24	3.55	0.31	22.55	88.66	1.21	1.24	1.17
1900	3.33	3.44	0.12	23.84	88.92	1.18	1.23	1.14
2000	3.40	3.37	0.03	25.33	88.93	1.16	1.21	1.12
2100	3.45	3.33	0.12	26.85	88.95	1.14	1.20	1.10
2200	3.48	3.32	0.16	28.90	89.07	1.12	1.19	1.09
2300	3.48	3.33	0.15	31.22	89.25	1.10	1.18	1.09
2400	3.45	3.37	0.08	34.26	89.24	1.08	1.17	1.10
2500	3.40	3.44	0.04	38.56	89.27	1.06	1.17	1.11
2600	3.33	3.54	0.22	45.07	89.20	1.04	1.16	1.12
2650	3.28	3.61	0.33	52.09	89.34	1.03	1.16	1.13
2700	3.23	3.68	0.45	57.17	89.32	1.01	1.16	1.14

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

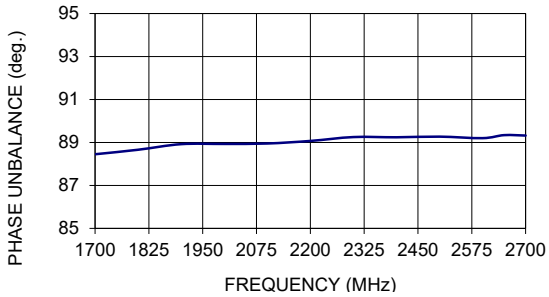
TOTAL LOSS[2]



ISOLATION



PHASE UNBALANCE



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