ULTRA-SMALL CERAMIC

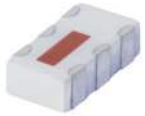
Power Splitter/Combiner

QCN-3+

2 Way-90° 50Ω 220 to 470 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"



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
- VHF
- Defense communication

ELECTRICAL SPECIFICATIONS AT 25°C

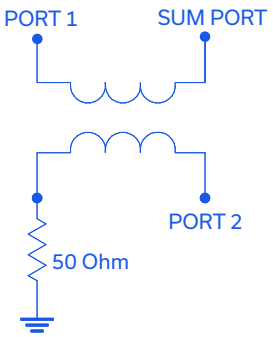
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		220		470	MHz
Insertion Loss, above 3.0 dB	220-470 270-350 350-450		0.6 0.4 0.6	0.8 0.7 0.8	dB
Isolation	220-470 270-350 350-450	18 18 20	24 25 30		dB
Phase Unbalance	220-470 270-350 350-450		1 3 5	8 5 8	Degree
Amplitude Unbalance	220-470 270-350 350-450		0.5 0.7 0.5	1.7 1.0 1.0	dB
VSWR	220-470 270-350 350-450		1.2 1.2 1.2		(:1)

MAXIMUM RATINGS

Parameter	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.

ELECTRICAL SCHEMATIC



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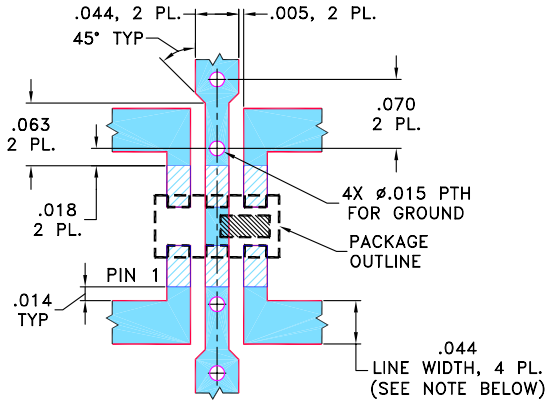
PIN CONNECTIONS

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

PRODUCT MARKING: SB

DEMO BOARD MCL P/N: TB-255
SUGGESTED PCB LAYOUT (PL-131)

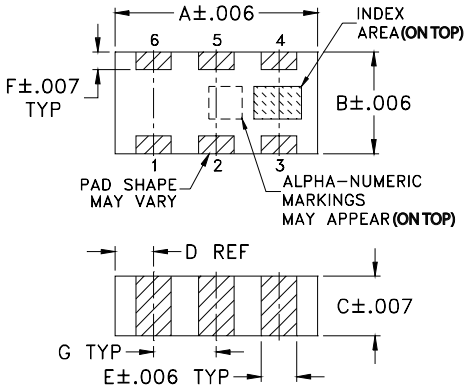


NOTES: 1.TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2.BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

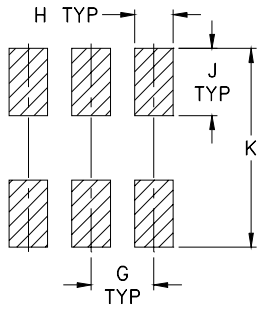
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

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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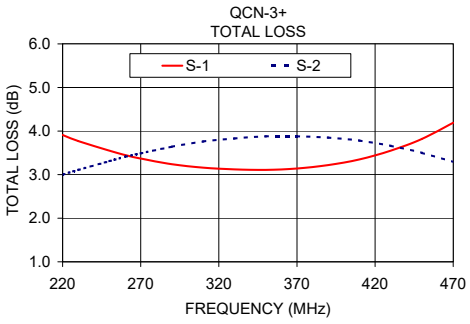
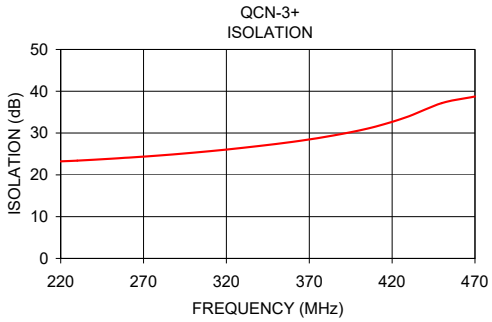
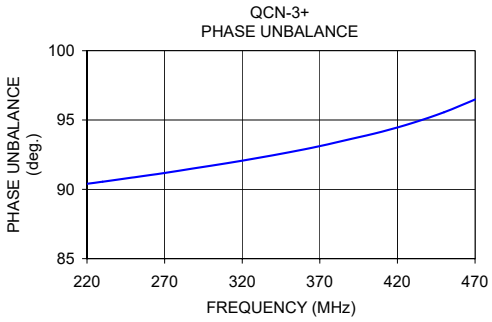
TYPICAL PERFORMANCE DATA

Frequency (MHz)	Total Loss[1] (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR (:1)		
	S-1	S-2				S	1	2
220.00	3.91	3.00	0.91	23.23	90.40	1.07	1.12	1.07
230.00	3.77	3.11	0.67	23.41	90.55	1.06	1.12	1.06
250.00	3.55	3.31	0.23	23.85	90.86	1.05	1.11	1.06
260.00	3.45	3.41	0.05	24.11	91.02	1.05	1.11	1.05
270.00	3.37	3.49	0.12	24.37	91.18	1.04	1.10	1.05
290.00	3.24	3.64	0.39	24.96	91.53	1.04	1.10	1.04
310.00	3.16	3.76	0.60	25.67	91.88	1.03	1.09	1.03
330.00	3.12	3.83	0.72	26.46	92.26	1.03	1.08	1.03
350.00	3.11	3.88	0.77	27.38	92.67	1.04	1.08	1.02
370.00	3.14	3.88	0.74	28.47	93.12	1.05	1.07	1.02
390.00	3.22	3.85	0.63	29.82	93.63	1.07	1.07	1.02
410.00	3.35	3.78	0.42	31.55	94.16	1.09	1.07	1.01
430.00	3.55	3.66	0.11	33.99	94.80	1.11	1.07	1.01
450.00	3.82	3.50	0.32	37.16	95.56	1.14	1.07	1.02
470.00	4.19	3.29	0.90	38.74	96.48	1.17	1.08	1.02

1. 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