



Mini-Circuits®

ULTRA-SMALL CERAMIC

Power Splitter/Combiner

QCN-19D+

2 Way-90° 50Ω 1100 to 1925 MHz

FEATURES

- Low insertion loss, 0.4 dB typ.
- High isolation, 26 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
- GPS
- PCS/DCS

ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		1100		1925	MHz
Insertion Loss, above 3.0 dB	1100-1400		0.4	0.7	dB
	1400-1600		0.4	0.8	
	1600-1925		0.5	0.9	
Isolation	1100-1400	19	25		dB
	1400-1600	20	26		
	1600-1925	20	26		
Phase Unbalance	1100-1400		1	3	Degree
	1400-1600		2	4	
	1600-1925		2	4	
Amplitude Unbalance	1100-1400		0.4	1.1	dB
	1400-1600		0.5	1.0	
	1600-1925		0.4	1.1	
VSWR	1100-1400		1.15		(:1)
	1400-1600		1.2		
	1600-1925		1.2		

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

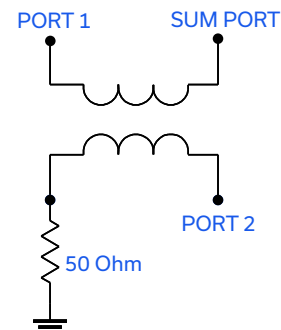
MAXIMUM RATINGS

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 (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: PJ

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



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $0.020" \pm 0.0015"$; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

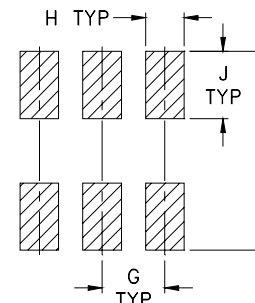
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

-  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 ± 0.002

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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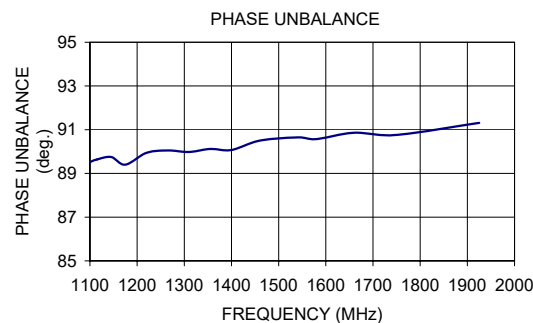
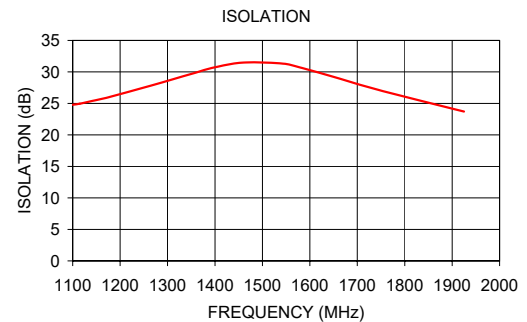
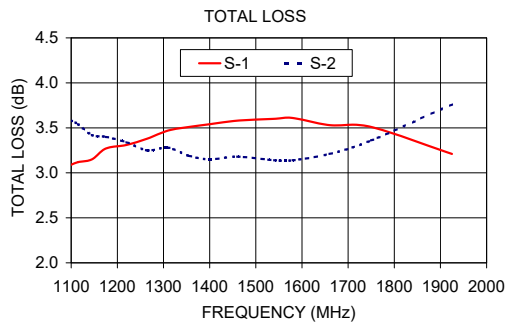
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TYPICAL PERFORMANCE DATA

Frequency (MHz)	Total Loss ¹ (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR (:1)		
	S-1	S-2				S	1	2
1100.00	3.09	3.58	0.49	24.79	89.52	1.10	1.11	1.15
1115.00	3.12	3.54	0.42	24.96	89.64	1.09	1.10	1.14
1145.00	3.15	3.42	0.27	25.45	89.75	1.08	1.10	1.14
1175.00	3.27	3.40	0.13	25.96	89.40	1.07	1.09	1.13
1220.00	3.31	3.34	0.03	26.88	89.94	1.06	1.08	1.12
1265.00	3.38	3.25	0.13	27.82	90.05	1.05	1.07	1.11
1310.00	3.47	3.28	0.19	28.81	89.98	1.04	1.06	1.10
1355.00	3.51	3.19	0.31	29.78	90.12	1.04	1.05	1.09
1400.00	3.54	3.15	0.39	30.74	90.07	1.04	1.04	1.07
1460.00	3.58	3.18	0.39	31.49	90.50	1.04	1.03	1.06
1540.00	3.60	3.14	0.45	31.34	90.65	1.06	1.02	1.04
1580.00	3.61	3.14	0.46	30.69	90.57	1.07	1.02	1.04
1660.00	3.53	3.21	0.32	28.99	90.86	1.10	1.02	1.02
1750.00	3.51	3.36	0.16	27.04	90.76	1.14	1.03	1.01
1925.00	3.21	3.76	0.55	23.71	91.31	1.21	1.06	1.05

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/MCLStore/terms.jsp



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