



Mini-Circuits

ULTRA-SMALL CERAMIC

Power Splitter/Combiner

SCN-3-16+

3 Way-0° 50Ω 950 to 1600 MHz

FEATURES

- Isolation resistor, external 100 ohms
- Low insertion loss, 0.6 dB typ.
- Excellent amplitude unbalance, 0.2 dB typ.
- Excellent phase unbalance, 3 deg. typ.
- High isolation, 15 dB typ.
- Excellent power handling, 15W as splitter
- Small size, 0.12"X0.06"X0.035"
- ESD non-sensitive
- Temperature stable LTCC technology
- Wrap around terminations for excellent solderability
- Low cost

APPLICATIONS

- DSS
- GSM, GPS
- WLAN
- ISM applications
- Satellite communication
- Defense applications
- Line of sight communications



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

ELECTRICAL SPECIFICATIONS AT 25°C

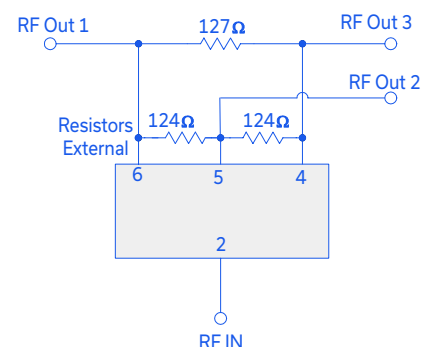
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		950		1600	MHz
Insertion Loss, above 4.8 dB	950-1600		0.6	1.2	dB
	1200-1400		0.3	0.8	
Isolation	950-1600	11	15		dB
	1200-1400	14	20		
Phase Unbalance	950-1600		3.0	5.0	Degree
	1200-1400		2.0	5.0	
Amplitude Unbalance	950-1600		0.2	0.5	dB
	1200-1400		0.2	0.4	
Return Loss (Input)	950-1600		14		dB
	1200-1400		20		
Return Loss (Output)	750-1325		17		dB
	850-1000		19		

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 6W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

ELECTRICAL SCHEMATIC



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REV. J
ECO-013987
SCN-3-16+
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220929

PAGE 1 OF 3



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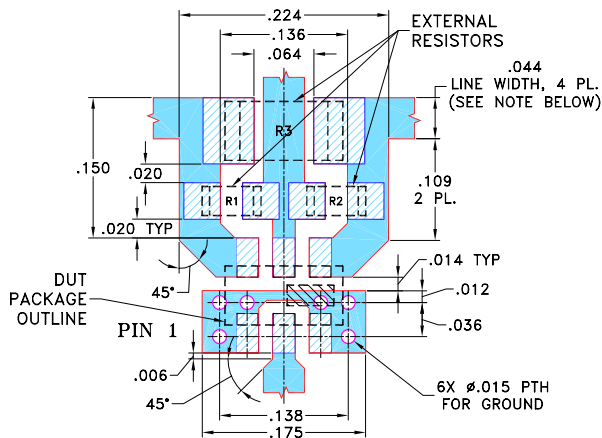
SCN-3-16+

PIN CONNECTIONS

SUM PORT	2
PORT 1	6
PORT 2	5
PORT 3	4
GROUND	1,3
PORT 1-2, 2-3	resistor external 124 ohms
PORT 1-3	resistor external 127 ohms

PRODUCT MARKING: PE

DEMO BOARD MCL P/N: TB-303 SUGGESTED PCB LAYOUT (PL-171)



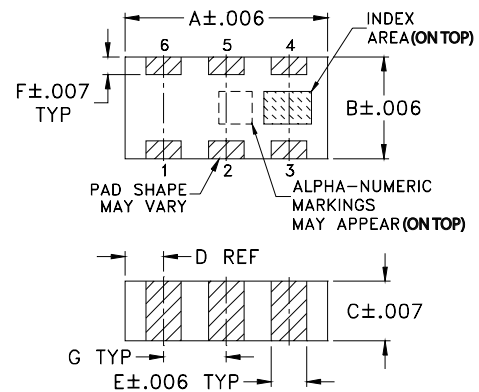
RESISTORS: R1-R2: 124 Ohm, 0603 SIZE; R3: 127 Ohm, 1206 SIZE.

NOTE:

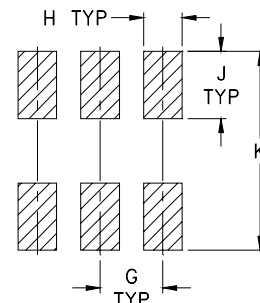
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS: .020 ± .0015; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. RESISTOR LAND PATTERNS ARE SHOWN AS PER IPC-SM-782A.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

-  DENOTES PCB COPPER LAYOUT
-  DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

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

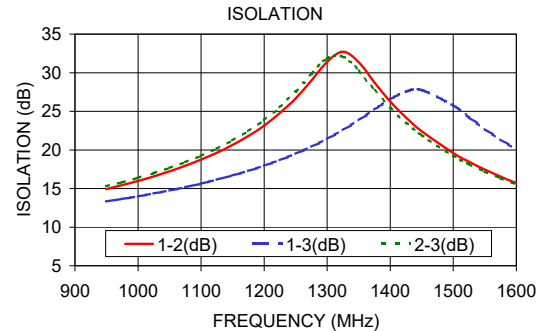
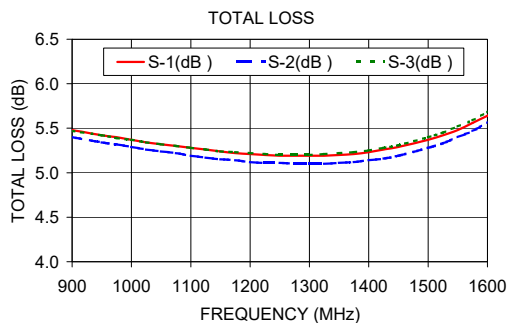




TYPICAL PERFORMANCE DATA

Frequency (MHz)	Total Loss ¹ (dB)			Amplitude Unbalance (dB)	Isolation (dB)			Phase Unbalance (deg.)	Return Loss (dB)		
	S-1	S-2	S-3		1-2	1-3	2-3		S	1	2
950.00	5.42	5.34	5.42	0.08	14.93	13.32	15.30	1.94	11.10	21.04	19.70
1000.00	5.37	5.29	5.37	0.08	15.99	13.99	16.38	2.02	11.91	21.04	20.18
1050.00	5.32	5.24	5.32	0.08	17.23	14.75	17.66	2.12	12.81	20.79	20.41
1100.00	5.28	5.19	5.28	0.09	18.74	15.64	19.23	2.21	13.90	20.24	20.37
1150.00	5.24	5.15	5.24	0.09	20.65	16.70	21.23	2.32	15.20	19.62	19.96
1200.00	5.21	5.12	5.22	0.09	23.15	17.95	23.86	2.42	16.68	19.07	19.59
1250.00	5.19	5.11	5.20	0.10	26.68	19.50	27.55	2.53	18.37	18.56	19.14
1300.00	5.19	5.10	5.20	0.10	31.40	21.43	31.87	2.61	19.89	18.26	18.75
1350.00	5.20	5.11	5.22	0.11	31.35	23.85	30.21	2.66	20.36	18.11	18.57
1400.00	5.23	5.14	5.25	0.11	26.27	26.57	25.45	2.77	19.18	18.14	18.49
1450.00	5.29	5.19	5.31	0.11	22.42	27.77	21.90	2.89	17.07	18.44	18.78
1500.00	5.37	5.28	5.40	0.12	19.61	25.76	19.26	2.91	14.81	19.03	19.18
1550.00	5.48	5.40	5.52	0.12	17.45	22.72	17.20	2.94	12.80	20.12	20.07
1600.00	5.64	5.56	5.68	0.12	15.72	20.10	15.54	2.99	11.01	21.67	21.69

1. Total Loss = Insertion Loss + 4.8 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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