



Mini-Circuits®

ULTRA-SMALL CERAMIC

Power Splitter/Combiner

SCN-3-16+

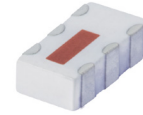
3 Way-0° 50Ω 950 to 1600 MHz

FEATURES

- Isolation Resistor, External 124Ω and 127Ω
- 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, 15 W as Splitter
- Small Size, 0.12x0.06x0.035"
- 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

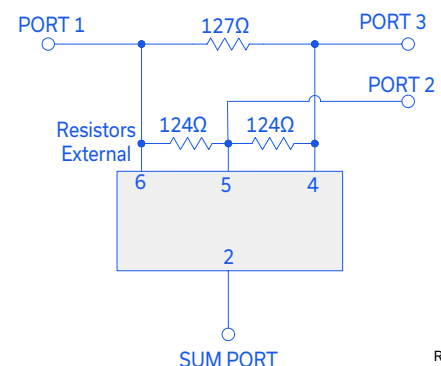
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		950		1600	MHz
Insertion Loss, Above 4.8 dB	950-1600		0.6	1.2	dB
	1200-1400		0.3	0.8	
Isolation	950-1600	11	15		dB
	1200-1400	14	20		
Phase Unbalance	950-1600		3.0	5.0	Degree
	1200-1400		2.0	5.0	
Amplitude Unbalance	950-1600		0.2	0.5	dB
	1200-1400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

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 ¹ max.

1. Derate linearly to 6 W at +100°C ambient.
Permanent damage may occur if any of these limits are exceeded.
Power input as a combiner is limited by rating of external resistors.

ELECTRICAL SCHEMATIC



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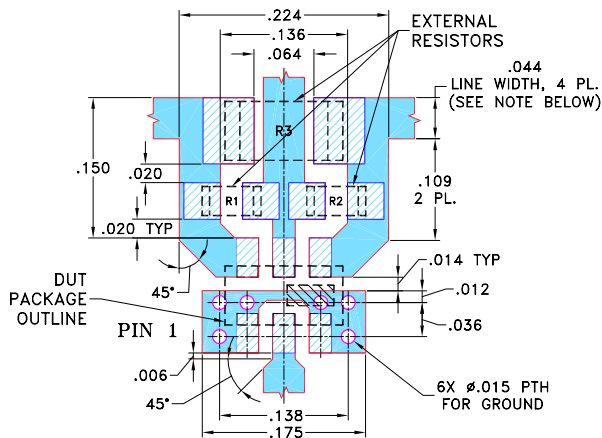
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PIN CONNECTIONS

SUM PORT	2
PORT 1	6
PORT 2	5
PORT 3	4
GROUND	1,3
PORT 1-2, 2-3	Resistor external 124Ω
PORT 1-3	Resistor external 127Ω

PRODUCT MARKING: N/A

DEMO BOARD MCL P/N: TB-SCN-3-16+
SUGGESTED PCB LAYOUT (PL-171)

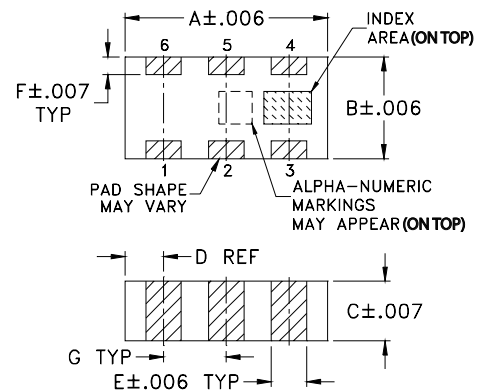
RESISTORS: R1-R2: 124 Ohm, 0603 SIZE; R3: 127 Ohm, 1206 SIZE.

NOTE:

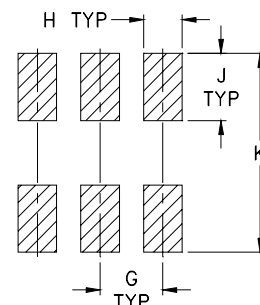
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS: .020 ± .0015; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. RESISTOR LAND PATTERNS ARE SHOWN AS PER IPC-SM-782A.
3. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

OUTLINE DRAWING



PCB Land Pattern

Suggested Layout,
Tolerance to be within ±.002OUTLINE 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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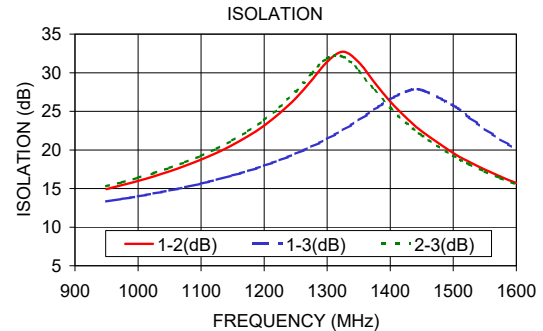
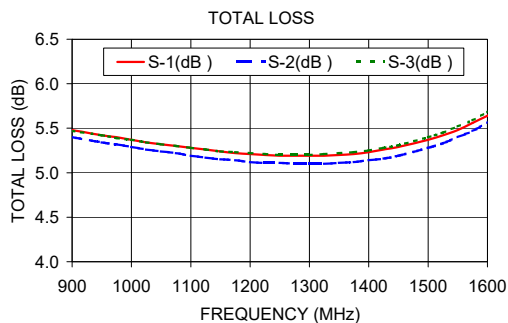
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TYPICAL PERFORMANCE DATA

Frequency (MHz)	Total Loss ² (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	5.42	5.34	5.42	0.08	14.93	13.32	15.30	1.94	11.10	21.04	19.70
1000	5.37	5.29	5.37	0.08	15.99	13.99	16.38	2.02	11.91	21.04	20.18
1050	5.32	5.24	5.32	0.08	17.23	14.75	17.66	2.12	12.81	20.79	20.41
1100	5.28	5.19	5.28	0.09	18.74	15.64	19.23	2.21	13.90	20.24	20.37
1150	5.24	5.15	5.24	0.09	20.65	16.70	21.23	2.32	15.20	19.62	19.96
1200	5.21	5.12	5.22	0.09	23.15	17.95	23.86	2.42	16.68	19.07	19.59
1250	5.19	5.11	5.20	0.10	26.68	19.50	27.55	2.53	18.37	18.56	19.14
1300	5.19	5.10	5.20	0.10	31.40	21.43	31.87	2.61	19.89	18.26	18.75
1350	5.20	5.11	5.22	0.11	31.35	23.85	30.21	2.66	20.36	18.11	18.57
1400	5.23	5.14	5.25	0.11	26.27	26.57	25.45	2.77	19.18	18.14	18.49
1450	5.29	5.19	5.31	0.11	22.42	27.77	21.90	2.89	17.07	18.44	18.78
1500	5.37	5.28	5.40	0.12	19.61	25.76	19.26	2.91	14.81	19.03	19.18
1550	5.48	5.40	5.52	0.12	17.45	22.72	17.20	2.94	12.80	20.12	20.07
1600	5.64	5.56	5.68	0.12	15.72	20.10	15.54	2.99	11.01	21.67	21.69

2. 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/terms/viewterm.html

