



Mini-Circuits®

ULTRA-SMALL CERAMIC

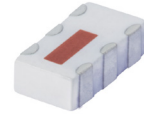
Power Splitter/Combiner

SCN-2-11+

2 Way-0° 50Ω 800 to 1175 MHz

FEATURES

- Isolation resistor, external 100 ohms
- Low insertion loss, 0.5 dB typ.
- Excellent amplitude unbalance, 0.1 dB typ.
- Excellent phase unbalance, 1.0 deg. typ.
- High isolation, 22 dB typ.
- Excellent power handling, 20W 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
- Protected by US patent 6,967,544



Generic photo used for illustration purposes only

CASE STYLE: FV1206-1

+RoHS CompliantThe +Suffix identifies RoHS Compliance.
See our website for methodologies and qualifications

APPLICATIONS

- GSM
- ISM
- Cellular

ELECTRICAL SPECIFICATIONS AT +25°C

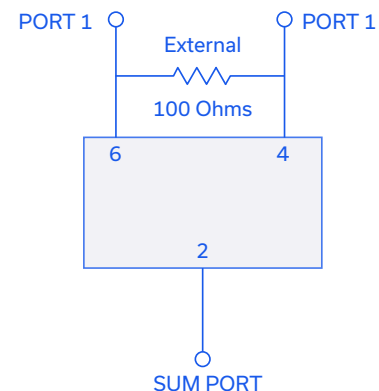
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		800		1175	MHz
Insertion Loss, above 3.0 dB	800-1175		0.5	0.8	dB
	875-1125		0.5	0.8	
Isolation	800-1175	15	20		dB
	875-1125	18	22		
Phase Unbalance	800-1175		1.0	3.0	Degree
	875-1125		1.0	3.0	
Amplitude Unbalance	800-1175		0.1	0.3	dB
	875-1125		0.1	0.3	
Return Loss (Input)	800-1175		16		dB
	875-1125		16		
Return Loss (Output)	800-1175		18		dB
	875-1125		20		

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-55°C to +100°C
Storage Temperature	-55°C to +100°C
Power Input (as a splitter)	20 W* max.

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

ELECTRICAL SCHEMATIC



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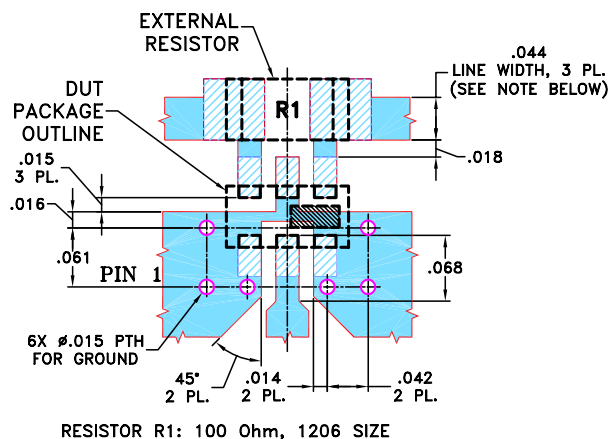
SCN-2-11+

PIN CONNECTIONS

SUM PORT	2
PORT 1	6
PORT 2	4
GROUND	1,3,5
PORT 1-2	resistor external 100 ohms

PRODUCT MARKING: S9

DEMO BOARD MCL P/N: TB-SCN-2-11+
SUGGESTED PCB LAYOUT (PL-129)

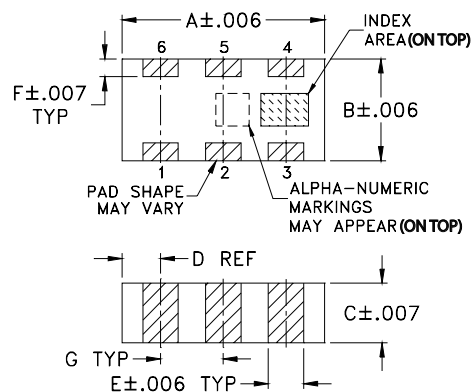


NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $0.020'' \pm 0.0015''$; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

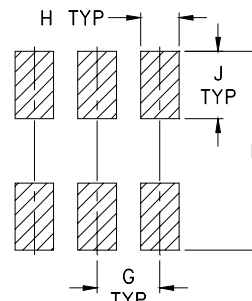
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

-  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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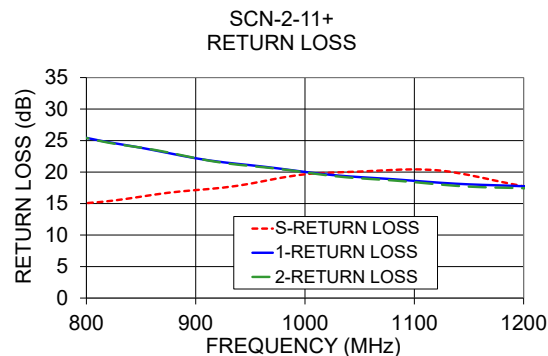
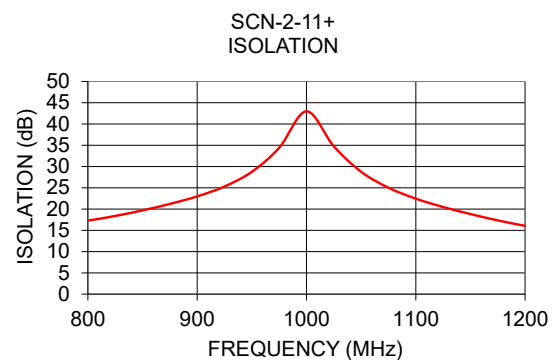
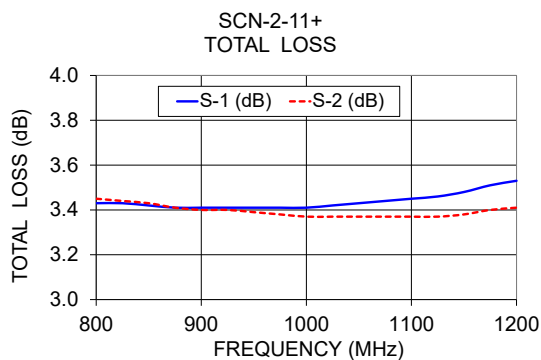
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TYPICAL PERFORMANCE DATA

Frequency (MHz)	Total Loss ¹ (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	Return Loss (dB)		
	S-1	S-2				S	1	2
800.00	3.43	3.45	0.02	17.28	0.11	15.07	25.43	25.41
825.00	3.43	3.44	0.01	18.38	0.13	15.48	24.60	24.52
850.00	3.42	3.43	0.01	19.70	0.14	16.10	23.86	23.88
875.00	3.41	3.41	0.00	21.21	0.14	16.72	23.02	23.11
900.00	3.41	3.40	0.01	22.98	0.15	17.14	22.19	22.21
925.00	3.41	3.40	0.01	25.31	0.14	17.53	21.56	21.46
950.00	3.41	3.39	0.02	28.76	0.12	18.16	21.09	20.97
975.00	3.41	3.38	0.03	34.40	0.14	19.00	20.59	20.53
1000.00	3.41	3.37	0.04	42.99	0.16	19.65	20.02	19.96
1025.00	3.42	3.37	0.05	34.77	0.20	19.92	19.53	19.39
1050.00	3.43	3.37	0.06	28.77	0.23	20.08	19.20	19.01
1100.00	3.45	3.37	0.08	22.45	0.27	20.43	18.61	18.40
1125.00	3.46	3.37	0.09	20.49	0.31	20.22	18.29	18.00
1150.00	3.48	3.38	0.10	18.83	0.34	19.53	18.05	17.69
1175.00	3.51	3.40	0.11	17.34	0.36	18.61	17.90	17.54

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



NOTES

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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

