



ULTRA-SMALL CERAMIC

Power Splitter/Combiner

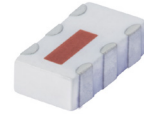
SCN-2-35+

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2 Way-0° 50Ω 2825 to 3700 MHz

FEATURES

- Isolation Resistor, External 100Ω
- Low Insertion Loss, 0.4 dB Typ.
- Excellent Amplitude Unbalance, 0.1 dB Typ.
- Excellent Phase Unbalance, 0.8 Deg. Typ.
- High Isolation, 28 dB Typ.
- Excellent Power Handling, 4 W as Splitter
- Small Size, 0.12x0.06x0.035"
- 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 Compliant

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

APPLICATIONS

- Amateur Radio
- Defense
- Wireless Communication

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		2825		3700	MHz
Insertion Loss, Above 3.0 dB	2825-3700		0.4	1.3	dB
	3200-3500		0.4	1.0	
Isolation	2825-3700	13	22		dB
	3200-3500	18	28		
Phase Unbalance	2825-3700		1.0	4.0	Degree
	3200-3500		0.8	4.0	
Amplitude Unbalance	2825-3700		0.1	0.3	dB
	3200-3500		0.1	0.3	
Return Loss (Input)	2825-3700		18		dB
	3200-3500		20		
Return Loss (Output)	2825-3700		20		dB
	3200-3500		23		

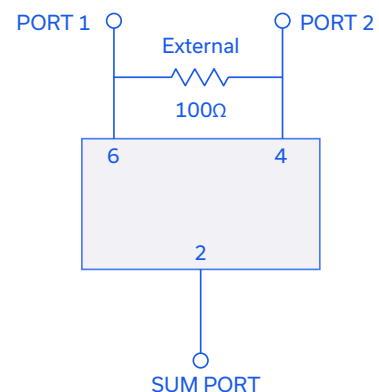
ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-55°C to +100°C
Storage Temperature	-55°C to +100°C
Power Input (as a Splitter)	4 W ¹ max.

1. Derate linearly to 1.3 W at +100°C ambient, power input as combiner is limited by rating of external 100Ω Resistor.

Permanent damage may occur if any of these limits are exceeded.

ELECTRICAL SCHEMATIC



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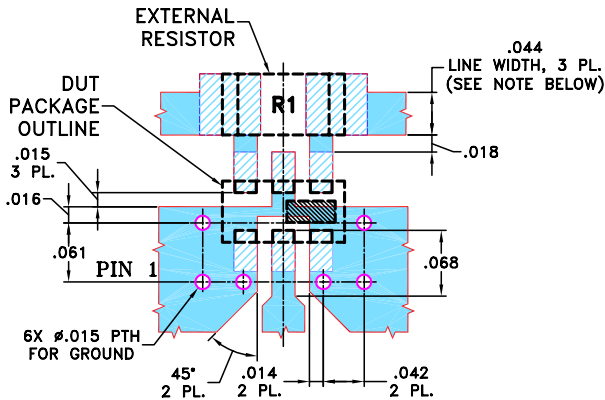
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PIN CONNECTIONS

SUM PORT	2
PORT 1	6
PORT 2	4
GROUND	1,3,5
PORT 1-2	Resistor external 100Ω

PRODUCT MARKING: N/A

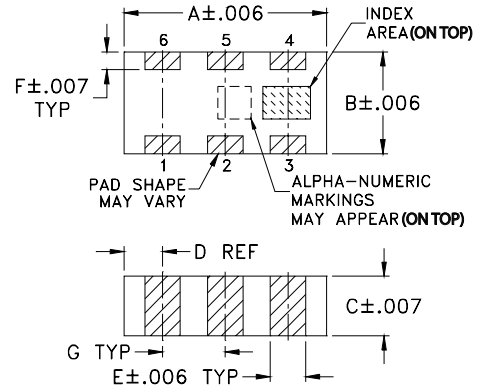
**DEMO BOARD MCL P/N: TB-SCN-2-35+
SUGGESTED PCB LAYOUT (PL-129)**



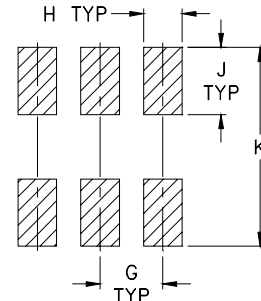
NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $0.020" \pm 0.0015"$; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- 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 ±.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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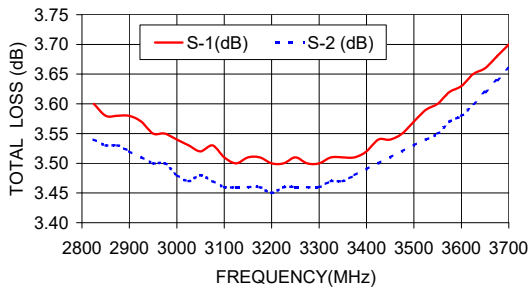
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TYPICAL PERFORMANCE DATA

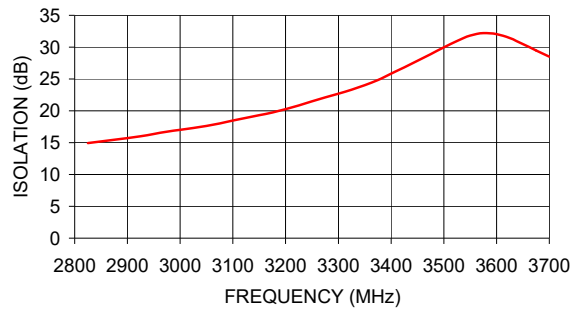
Frequency (MHz)	Total Loss ² (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	Return Loss (dB)		
	S-1	S-2				S	1	2
2825	3.60	3.54	0.06	14.94	0.28	15.39	47.26	31.96
2900	3.58	3.52	0.05	15.70	0.22	16.46	41.52	34.99
3000	3.54	3.48	0.05	17.02	0.21	18.99	33.34	47.87
3100	3.51	3.46	0.05	18.47	0.17	21.86	29.16	39.50
3200	3.50	3.45	0.05	20.26	0.14	26.24	25.93	31.34
3300	3.50	3.46	0.04	22.71	0.14	30.10	23.20	26.54
3450	3.54	3.51	0.04	27.85	0.12	21.96	20.06	21.98
3500	3.57	3.53	0.04	29.97	0.13	20.04	19.24	20.75
3550	3.60	3.55	0.04	31.81	0.11	18.22	18.51	19.70
3575	3.62	3.57	0.05	32.20	0.09	17.56	18.24	19.31
3600	3.63	3.58	0.05	32.06	0.06	17.00	17.98	18.95
3625	3.65	3.60	0.05	31.43	0.04	16.42	17.72	18.61
3650	3.66	3.62	0.05	30.50	0.01	15.80	17.43	18.26
3675	3.68	3.64	0.04	29.47	0.02	15.18	17.13	17.88
3700	3.70	3.66	0.04	28.52	0.03	14.65	16.85	17.50

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

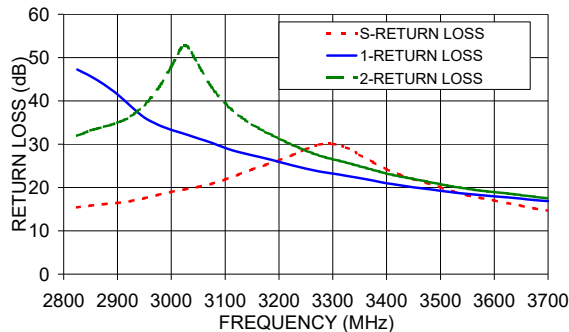
TOTAL LOSS



ISOLATION



RETURN 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

