

Impedance Matching Power Splitter/Combiner

SBTC-2-105075X+

2 Way-0° 50/75Ω 50 to 1000 MHz

Features

- 50 ohm input, 75 ohm output
- excellent isolation, 20 dB typ.
- very good phase unbalance, 1.0 deg. typ.
- small size, 0.15"x0.15"x0.15"
- temperature stable LTCC base
- small size
- low cost
- aqueous washable
- protected by US patent 6,963,255

Applications

- cable
- 50-75 ohm amplifier splitter



Generic photo used for illustration purposes only

CASE STYLE: AT1667

+RoHS Compliant

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

 Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
13"	500

Electrical Specifications

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		50		1000	MHz
Insertion Loss Above 3.0 dB	50 - 500	—	0.7	1.2	dB
	500 - 1000	—	1.0	1.6	
Isolation	50 - 500	16	25	—	dB
	500 - 1000	15	20	—	
Phase Unbalance	50 - 500	—	—	3	Degree
	500 - 1000	—	—	5	
Amplitude Unbalance	50 - 500	—	—	0.6	dB
	500 - 1000	—	—	0.5	

Maximum Ratings

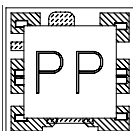
Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	0.5W max.
Internal Dissipation	0.125W max

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

Pin Connections

Function	Pin Number
SUM PORT	6 (50 ohms)
PORT 1	3 (75 ohms)
PORT 2	4 (75 ohms)
GROUND	1,2
NOT USED	5

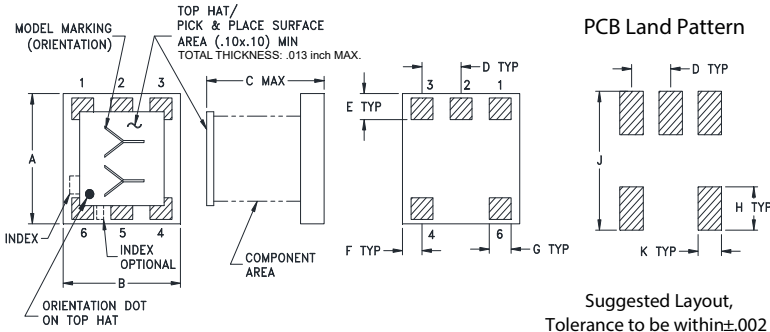
Product Marking



Electrical Schematic



Outline Drawing

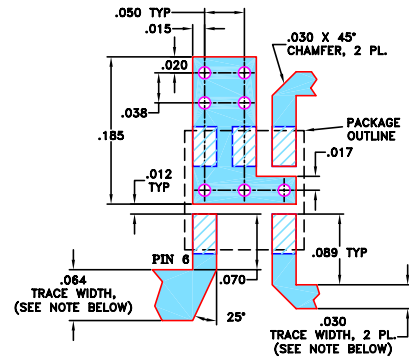


Suggested Layout, Tolerance to be within ± 0.02

Outline Dimensions (inch mm)

A	B	C	D	E	F
.150	.150	.150	.050	.030	.025
3.81	3.81	3.81	1.27	0.76	0.64
G	H	J	K	wt	
.028	.050	.160	.030	grams	
0.71	1.27	4.06	0.76	0.10	

Demo Board MCL P/N: TB-146 Suggested PCB Layout (PL-093)



NOTE: TRACE WIDTH IS SHOWN FOR ROGERS RO4350 WITH DIELECTRIC THICKNESS 0.030 ± 0.002 ", COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

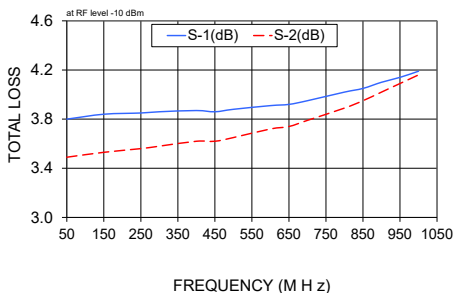
- DENOTES PCB COPPER LAYOUT
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Typical Performance Data

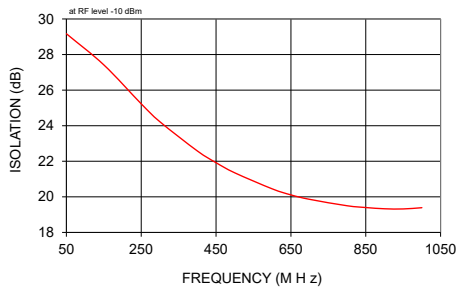
Frequency (MHz)	Total Loss ¹ (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
50.00	3.80	3.49	0.31	29.17	0.08	1.20	1.38	1.30
150.00	3.84	3.53	0.30	27.42	0.28	1.20	1.34	1.27
250.00	3.85	3.56	0.29	25.23	0.57	1.18	1.29	1.25
300.00	3.86	3.58	0.28	24.22	0.67	1.17	1.26	1.23
400.00	3.87	3.62	0.25	22.58	0.95	1.14	1.19	1.20
450.00	3.86	3.62	0.24	21.92	1.08	1.12	1.17	1.19
500.00	3.88	3.65	0.23	21.35	1.21	1.10	1.14	1.18
600.00	3.91	3.72	0.19	20.45	1.47	1.06	1.13	1.18
650.00	3.92	3.74	0.18	20.11	1.53	1.04	1.14	1.19
700.00	3.95	3.79	0.16	19.86	1.66	1.03	1.17	1.21
800.00	4.02	3.89	0.13	19.50	1.80	1.05	1.24	1.25
850.00	4.05	3.95	0.10	19.40	1.84	1.07	1.27	1.27
900.00	4.10	4.02	0.09	19.33	1.93	1.09	1.30	1.29
950.00	4.14	4.09	0.05	19.32	2.00	1.10	1.32	1.30
1000.00	4.19	4.16	0.03	19.39	1.99	1.12	1.34	1.30

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

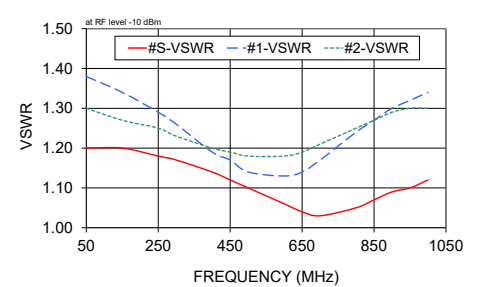
TOTAL LOSS



ISOLATION



VSWR



Additional 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.
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