

Surface Mount, Micro-Miniature Power Splitter/Combiner

2 Way-180° 50Ω 1 to 750 MHz

SBTCJ-1WX+



CASE STYLE: AT1667

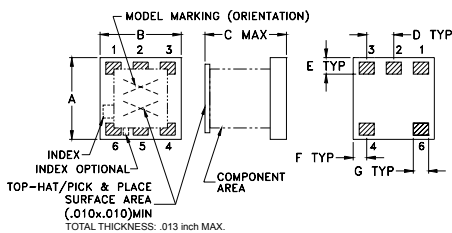
Maximum Ratings

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.	

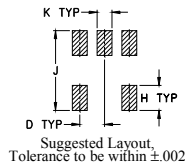
Pin Connections

SUM PORT	6
PORT 1	1
PORT 2	3
GROUND	2,4
NOT USED	5

Outline Drawing



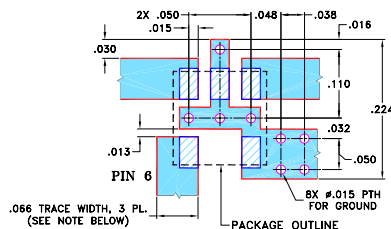
PCB Land Pattern



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-227 Suggested PCB Layout (PL-117)



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .050" ± .002". 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

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

Features

- low insertion loss, 0.7 dB typ.
- good isolation, 23 dB typ.
- good VSWR, 1.25 typ. all ports
- small size, 0.15X0.15"X0.15"
- temperature stable, LTCC base
- low cost
- protected by US Patent, 6,806,790

Applications

- cellular
- UHF/VHF receivers/transmitters
- protected by US Patent, 6,806,790

Electrical Specifications

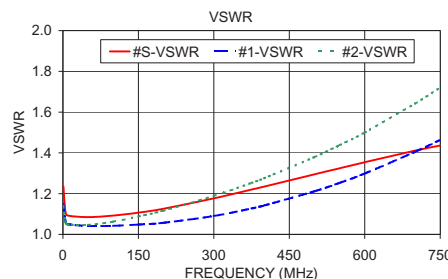
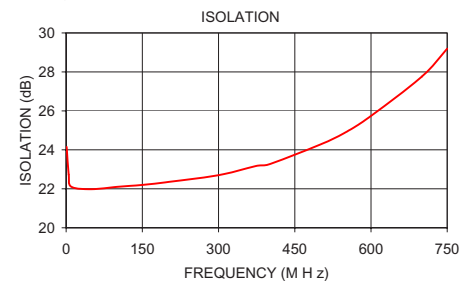
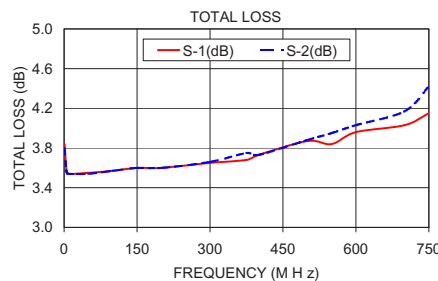
FREQ. RANGE (MHz)	ISOLATION* (dB)						INSERTION LOSS (dB) ABOVE 3.0 dB						PHASE UNBALANCE (Degrees)			AMPLITUDE UNBALANCE (dB)		
	L		M		U		L		M		U		L		M		U	
f _L -f _U	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Max.	Max.	Max.	Max.	Max.	Max.
1-750	23	20	22	20	24	20	0.6	1.7	0.6	1.2	0.9	1.8	3	7	10	0.2	0.4	0.9

L = low range [f_L to 10 f_L] M = mid range [10 f_L to f_U/2] U = upper range [f_U/2 to f_U]
*Isolation, 17 dB min. at 1 - 3 MHz.

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						
1.00	3.84	3.80	0.04	24.15	179.96	1.24	1.15	1.14
5.00	3.57	3.56	0.01	22.73	179.96	1.11	1.07	1.06
10.00	3.54	3.54	0.00	22.11	179.95	1.09	1.05	1.05
50.00	3.55	3.54	0.00	21.98	179.53	1.08	1.04	1.05
100.00	3.57	3.57	0.00	22.10	179.01	1.09	1.04	1.06
150.00	3.60	3.60	0.01	22.20	178.54	1.11	1.05	1.09
200.00	3.60	3.60	0.00	22.35	178.04	1.13	1.06	1.12
300.00	3.65	3.66	0.01	22.70	177.08	1.18	1.09	1.19
375.00	3.68	3.75	0.07	23.18	176.60	1.22	1.13	1.25
400.00	3.73	3.73	0.01	23.26	176.18	1.23	1.14	1.28
500.00	3.87	3.88	0.01	24.27	175.75	1.29	1.21	1.38
550.00	3.84	3.95	0.11	24.90	175.68	1.32	1.25	1.44
600.00	3.96	4.03	0.07	25.74	175.59	1.35	1.30	1.50
700.00	4.03	4.17	0.14	27.76	175.20	1.41	1.41	1.64
750.00	4.15	4.42	0.27	29.19	175.46	1.44	1.46	1.72

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



electrical schematic



www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

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