



Mini-Circuits®

SURFACE MOUNT

Power Splitter/Combiner

SBTC-2-10L+

2 Way-0° 50Ω 5 to 1000 MHz

FEATURES

- Low Insertion Loss, 0.3 dB Typ.
- Excellent Amplitude Unbalance, 0.1 dB Typ.
- Very Good Phase Unbalance, 1.0 Deg. Typ.
- Temperature Stable LTCC Base
- Small Size
- Low Cost
- Aqueous Washable
- Protected by US Patent 6,963,255

For Model
without Leads see
[SBTC-2-10+](#)



Generic photo used for illustration purposes only

CASE STYLE: AT1029

+RoHS Compliant

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

APPLICATIONS

- UHF/VHF Receivers/Transmitters
- Cellular

ELECTRICAL SPECIFICATIONS AT +25°C

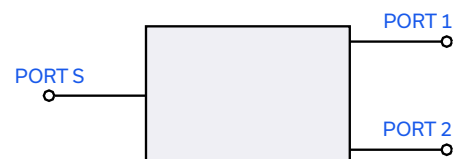
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		5		1000	MHz
Insertion Loss Above 3.0 dB	5-50		0.3	0.7	dB
	50-500		0.3	0.8	
	500-1000		0.5	1.4	
Isolation	5-50	20	29		dB
	50-500	18	25		
	500-1000	16	21		
Phase Unbalance	5-50			3	Degree
	50-500			3	
	500-1000			5	
Amplitude Unbalance	5-50			0.6	dB
	50-500			0.5	
	500-1000			0.5	

ABSOLUTE MAXIMUM RATINGS

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

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

ELECTRICAL SCHEMATIC



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

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MCL NY
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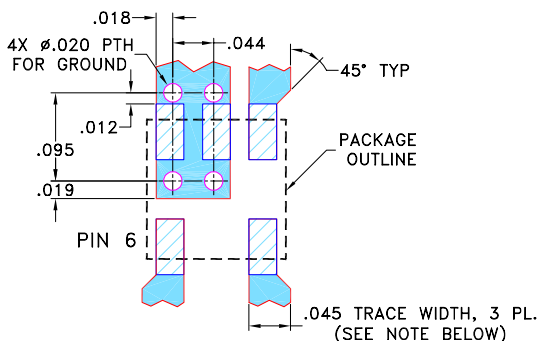
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PIN CONNECTIONS

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

PRODUCT MARKING: N/A

DEMO BOARD MCL P/N: TB-SBTC-2-10L+
SUGGESTED PCB LAYOUT (PL-152)

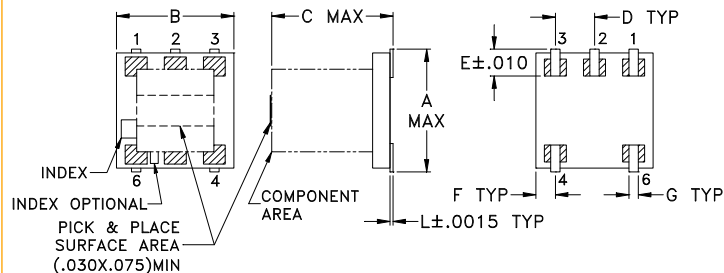


NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" $\pm$ 0.0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

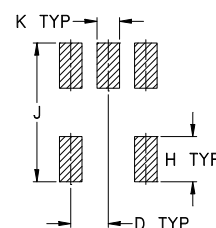
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- 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)

A	B	C	D	E	F	G	H	J	K	L	wt
.166	.150	.155	.050	.037	.025	.012	.060	.184	.030	.004	grams
4.22	3.81	3.94	1.27	0.94	0.64	0.30	1.52	4.67	0.76	0.10	0.10

TAPE & REEL INFORMATION: F76



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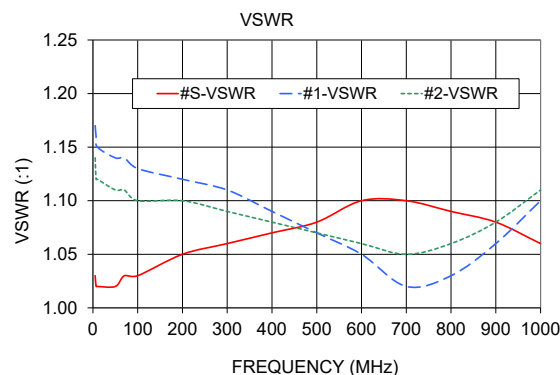
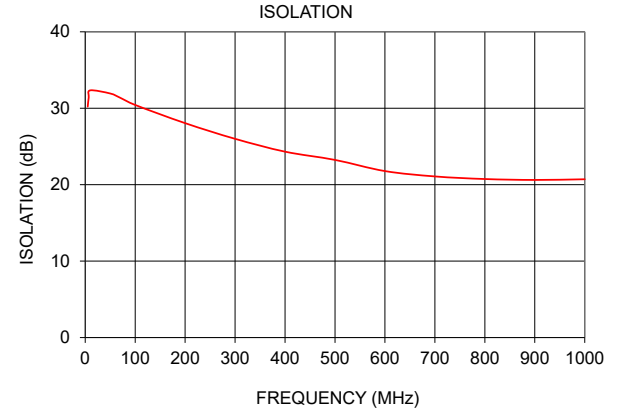
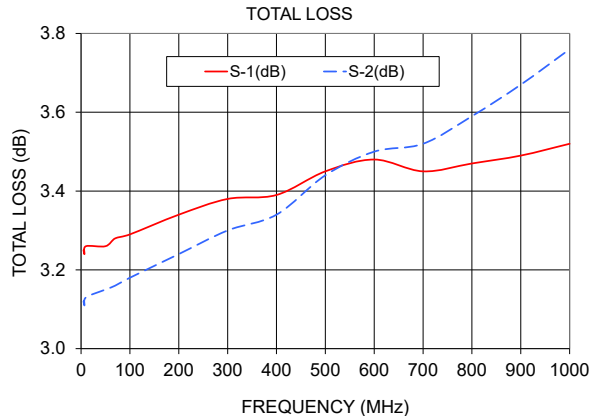
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TYPICAL PERFORMANCE DATA

Frequency (MHz)	Total Loss ¹ (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR (:1)		
	S-1	S-2				S	1	2
5	3.25	3.12	0.13	30.21	0.41	1.03	1.17	1.14
7	3.24	3.11	0.13	31.41	0.32	1.02	1.16	1.12
10	3.26	3.13	0.13	32.34	0.13	1.02	1.15	1.12
50	3.26	3.15	0.12	31.93	0.06	1.02	1.14	1.11
70	3.28	3.16	0.12	31.37	0.07	1.03	1.14	1.11
100	3.29	3.18	0.11	30.43	0.12	1.03	1.13	1.10
200	3.34	3.24	0.10	28.05	0.20	1.05	1.12	1.10
300	3.38	3.30	0.08	26.00	0.24	1.06	1.11	1.09
400	3.39	3.34	0.05	24.32	0.26	1.07	1.09	1.08
500	3.45	3.44	0.02	23.24	0.28	1.08	1.07	1.07
600	3.48	3.50	0.02	21.78	0.28	1.10	1.05	1.06
700	3.45	3.52	0.07	21.08	0.21	1.10	1.02	1.05
800	3.47	3.59	0.12	20.74	0.09	1.09	1.03	1.06
900	3.49	3.67	0.18	20.62	0.06	1.08	1.06	1.08
1000	3.52	3.76	0.24	20.71	0.27	1.06	1.10	1.11

1. Total Loss = Insertion Loss + 3 dB 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.
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