

top hat<sup>®</sup>  
**Surface Mount**  
**Power Splitter/Combiner**

**SBTC-2-25LX+**

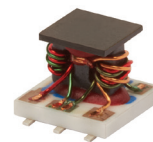
2 Way-0° 50Ω 1000 to 2500 MHz

**Features**

- wide band frequency, 1000-2500 MHz
- excellent amplitude unbalance, 0.2 dB typ.
- small size, 0.166"x0.150"x0.155"
- temperature stable LTCC base
- small size
- low cost
- aqueous washable
- protected by US patent 6,963,255

**Applications**

- PCN/PCS
- DECT
- PHS
- VSAT



Generic photo used for illustration purposes only

CASE STYLE: AT1739

**+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
7"	20, 50, 100, 200, 500
13"	1000, 2000

**Electrical Specifications**

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
<b>Frequency Range</b>		1000		2500	MHz
<b>Insertion Loss Above 3.0 dB</b>	1000 - 2500	—	1.4	2.5	dB
	1400 - 1800	—	0.9	1.7	
	1800 - 2000	—	1.0	1.7	
<b>Isolation</b>	1000 - 2500	14	20	—	dB
	1400 - 1800	14	18	—	
	1800 - 2000	16	19	—	
<b>Phase Unbalance</b>	1000 - 2500	—	—	14	Degree
	1400 - 1800	—	—	8	
	1800 - 2000	—	—	8	
<b>Amplitude Unbalance</b>	1000 - 2500	—	—	1.2	dB
	1400 - 1800	—	—	0.7	
	1800 - 2000	—	—	0.8	

**Maximum Ratings**

Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
Power Input (as a splitter)	1W 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
PORT 1	3
PORT 2	4
GROUND	1,2
NOT USED	5

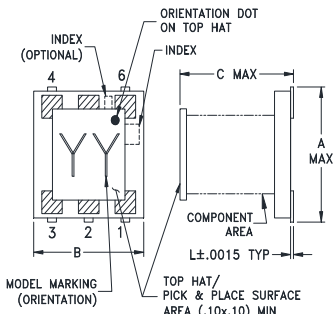
**Product Marking**



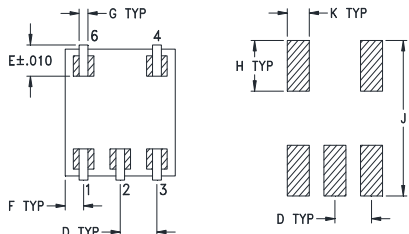
**Electrical Schematic**



## Outline Drawing

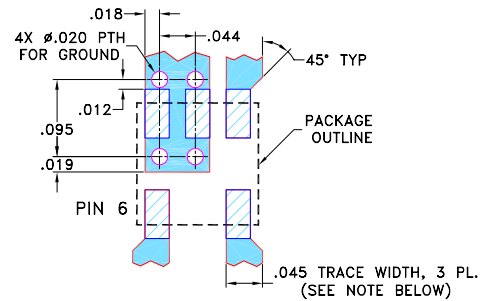


## PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±.002

## Demo Board MCL P/N: TB-274 Suggested PCB Layout (PL-152)



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 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

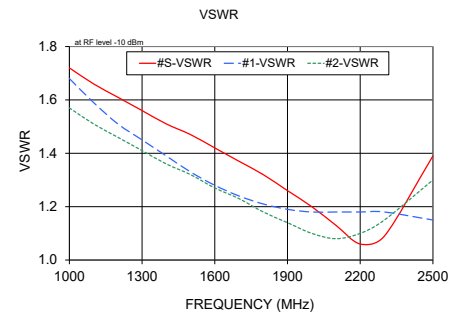
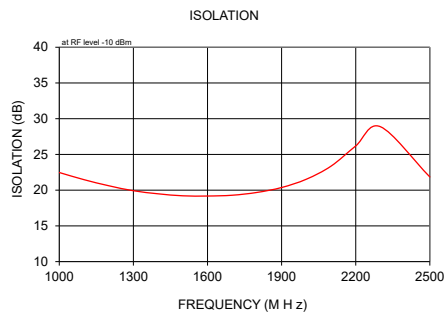
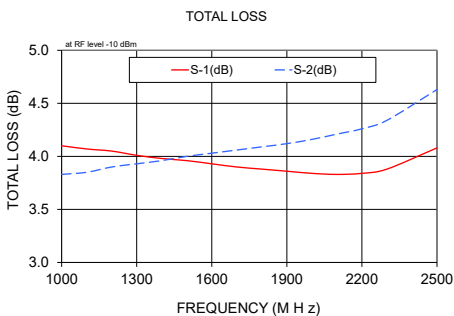
## Outline Dimensions (inch/mm)

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

## Typical Performance Data

Frequency (MHz)	Total Loss <sup>1</sup> (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	VSWR S	VSWR 1	VSWR 2
	S-1	S-2						
1000.00	4.10	3.83	0.28	22.47	2.79	1.72	1.68	1.57
1100.00	4.07	3.85	0.21	21.47	2.54	1.66	1.59	1.51
1200.00	4.05	3.90	0.15	20.62	2.39	1.61	1.51	1.46
1300.00	4.01	3.93	0.08	19.92	2.34	1.56	1.45	1.41
1400.00	3.98	3.96	0.04	19.49	2.36	1.51	1.39	1.36
1500.00	3.96	4.00	0.05	19.21	2.47	1.47	1.33	1.32
1600.00	3.93	4.03	0.10	19.18	2.66	1.42	1.28	1.27
1700.00	3.90	4.06	0.16	19.29	2.92	1.37	1.24	1.23
1800.00	3.88	4.09	0.21	19.68	3.28	1.32	1.21	1.18
1900.00	3.86	4.12	0.27	20.37	3.70	1.26	1.19	1.14
2000.00	3.84	4.16	0.32	21.53	4.23	1.20	1.18	1.10
2100.00	3.83	4.21	0.37	23.36	4.87	1.13	1.18	1.08
2200.00	3.84	4.26	0.42	26.19	5.57	1.06	1.18	1.10
2300.00	3.88	4.34	0.46	28.88	6.36	1.09	1.18	1.15
2500.00	4.08	4.63	0.55	21.85	8.22	1.39	1.15	1.30

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



## Additional 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/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)