

Surface Mount

# Power Splitter/Combiner

## SBTC-2-15-75+

2 Way-0° 75Ω 500 to 1500 MHz

### Features

- low insertion loss, 0.8 dB typ.
- high isolation, 28 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

### Applications

- internet over satellite modems
- VSAT

### Electrical Specifications

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Frequency Range		500		1500	MHz
Insertion Loss Above 3.0 dB	500 - 1500	—	0.8	1.5	dB
	750 - 1500	—	0.8	1.5	
Isolation	500 - 1500	18	28	—	dB
	750 - 1500	20	28	—	
Phase Unbalance	500 - 1500	—	—	5	Degree
	750 - 1500	—	—	4	
Amplitude Unbalance	500 - 1500	—	—	0.9	dB
	750 - 1500	—	—	0.7	

For Model with Leads see SBTC-2-15-75L+



Generic photo used for illustration purposes only

CASE STYLE: AT790

**+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
13"	500, 1000, 2000

### 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.

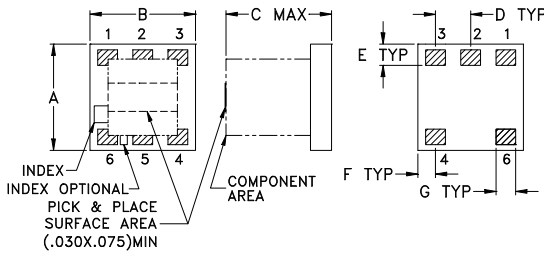
### Pin Connections

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

### Electrical Schematic



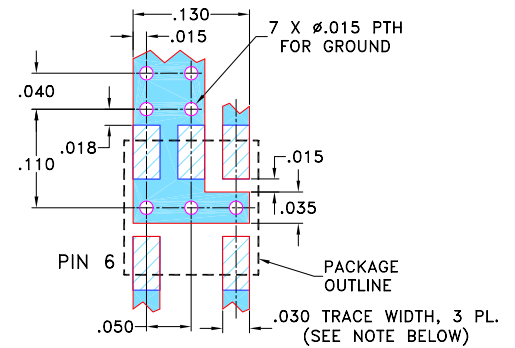
## Outline Drawing



## PCB Land Pattern

Suggested Layout,  
Tolerance to be within ±002

## Demo Board MCL P/N: TB-277 Suggested PCB Layout (PL-153)



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS  $0.030 \pm 0.002$ ; 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

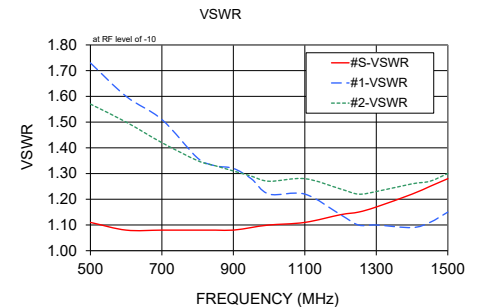
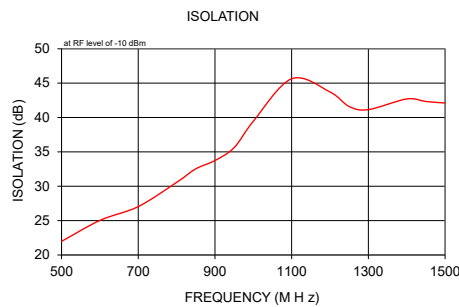
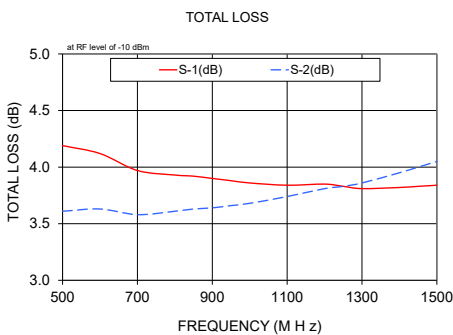
## Outline Dimensions (inch mm)

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

## 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						
500.00	4.19	3.61	0.58	21.98	1.92	1.11	1.73	1.57
600.00	4.12	3.63	0.49	25.03	1.30	1.08	1.60	1.50
700.00	3.97	3.58	0.39	27.04	0.91	1.08	1.51	1.42
800.00	3.93	3.61	0.32	30.56	0.59	1.08	1.36	1.35
850.00	3.92	3.63	0.29	32.53	0.44	1.08	1.33	1.33
900.00	3.90	3.64	0.25	33.74	0.29	1.08	1.32	1.31
950.00	3.88	3.66	0.22	35.62	0.20	1.09	1.28	1.29
1000.00	3.86	3.68	0.18	39.45	0.15	1.10	1.22	1.27
1100.00	3.84	3.74	0.10	45.64	0.17	1.11	1.22	1.28
1200.00	3.85	3.81	0.04	43.71	0.19	1.14	1.14	1.24
1250.00	3.83	3.83	0.03	41.60	0.21	1.15	1.10	1.22
1300.00	3.81	3.86	0.05	41.15	0.19	1.17	1.10	1.23
1400.00	3.82	3.95	0.13	42.70	0.21	1.22	1.09	1.26
1450.00	3.83	4.00	0.17	42.33	0.24	1.25	1.11	1.27
1500.00	3.84	4.05	0.21	42.11	0.30	1.28	1.15	1.30

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



## 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-Circuits' applicable established test performance criteria and measurement instructions.
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