

# Power Splitter/Combiners

SBTC-2-10-75+ SBTC-2-10-75L+

2 Way-0° 75Ω

10 to 1000 MHz



## Maximum Ratings

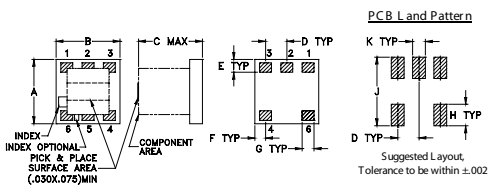
|                             |                |
|-----------------------------|----------------|
| Operating Temperature       | -40°C to 85°C  |
| Storage Temperature         | -55°C to 100°C |
| Power Input (as a splitter) | 0.5W max.      |
| Internal Dissipation        | 0.125W max.    |

## Pin Connections

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

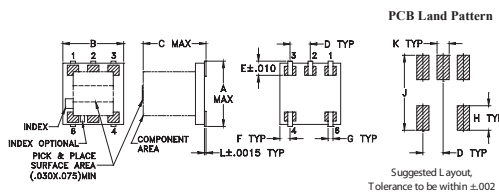
## Outline Drawing / Dimensions (inch/mm)

AT790 (SBTC-2-10-75+)



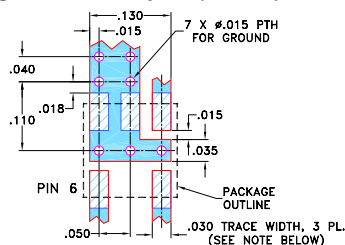
|      |      |      |      |      |      |      |      |      |      |       |
|------|------|------|------|------|------|------|------|------|------|-------|
| A    | B    | C    | D    | E    | F    | G    | H    | J    | K    | wt.   |
| .150 | .150 | .150 | .050 | .030 | .025 | .028 | .050 | .160 | .030 | grams |
| 3.81 | 3.81 | 3.81 | 1.27 | 0.76 | 0.64 | 0.71 | 1.27 | 4.06 | 0.76 | .10   |

AT1029 (SBTC-2-10-75L+)



|      |      |      |      |      |      |      |      |      |      |      |       |
|------|------|------|------|------|------|------|------|------|------|------|-------|
| 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 | .10   |

## 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" ± 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

## Features

- low insertion loss, 0.8 dB typ.
- excellent amplitude unbalance, 0.15 dB typ.
- very good phase unbalance, 1.0 deg. 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

- UHF/VHF receivers/transmitters
- cellular

## Electrical Specifications

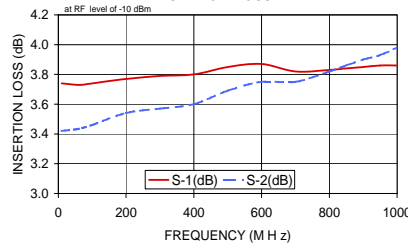
| FREQ. RANGE (MHz) | ISOLATION (dB) |    |    | INSERTION LOSS (dB) ABOVE 3.0 dB |    |    | PHASE UNBALANCE (Degrees) |     |     | AMPLITUDE UNBALANCE (dB) |     |     |   |   |   |     |     |     |
|-------------------|----------------|----|----|----------------------------------|----|----|---------------------------|-----|-----|--------------------------|-----|-----|---|---|---|-----|-----|-----|
|                   | L              | M  | U  | L                                | M  | U  | L                         | M   | U   | L                        | M   | U   |   |   |   |     |     |     |
| 10-1000           | 35             | 20 | 28 | 20                               | 21 | 17 | 0.7                       | 1.2 | 0.6 | 1.2                      | 0.7 | 1.4 | 3 | 3 | 5 | 0.7 | 0.6 | 0.6 |

L = low range [f<sub>l</sub> to 10 f<sub>l</sub>] M = mid range [10 f<sub>l</sub> to f<sub>u</sub>/2] U = upper range [f<sub>u</sub>/2 to f<sub>u</sub>]

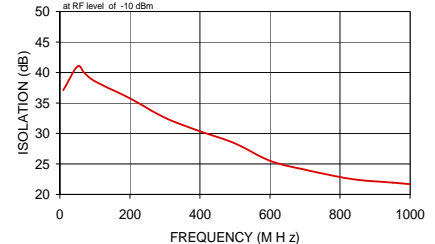
## Typical Performance Data

| Frequency (MHz) | Insertion Loss (dB) S-1 | Loss (dB) S-2 | Amplitude Unbalance (dB) | Isolation (dB) | Phase Unbalance (deg.) | VSWR S | VSWR 1 | VSWR 2 |
|-----------------|-------------------------|---------------|--------------------------|----------------|------------------------|--------|--------|--------|
| 10.00           | 3.74                    | 3.42          | 0.31                     | 37.11          | 0.66                   | 1.04   | 1.33   | 1.23   |
| 50.00           | 3.73                    | 3.43          | 0.30                     | 40.95          | 0.14                   | 1.02   | 1.29   | 1.21   |
| 70.00           | 3.73                    | 3.44          | 0.29                     | 39.94          | 0.14                   | 1.03   | 1.28   | 1.21   |
| 100.00          | 3.74                    | 3.46          | 0.29                     | 38.55          | 0.13                   | 1.04   | 1.27   | 1.20   |
| 200.00          | 3.77                    | 3.54          | 0.22                     | 35.75          | 0.09                   | 1.10   | 1.26   | 1.21   |
| 300.00          | 3.79                    | 3.57          | 0.22                     | 32.58          | 0.54                   | 1.13   | 1.27   | 1.22   |
| 400.00          | 3.80                    | 3.60          | 0.20                     | 30.37          | 0.60                   | 1.17   | 1.28   | 1.26   |
| 500.00          | 3.85                    | 3.69          | 0.16                     | 28.37          | 0.64                   | 1.20   | 1.24   | 1.27   |
| 600.00          | 3.87                    | 3.75          | 0.12                     | 25.52          | 0.74                   | 1.18   | 1.21   | 1.28   |
| 700.00          | 3.82                    | 3.75          | 0.07                     | 24.07          | 0.75                   | 1.19   | 1.20   | 1.30   |
| 800.00          | 3.83                    | 3.82          | 0.03                     | 22.85          | 0.77                   | 1.19   | 1.26   | 1.32   |
| 850.00          | 3.84                    | 3.86          | 0.03                     | 22.40          | 0.73                   | 1.18   | 1.23   | 1.31   |
| 900.00          | 3.85                    | 3.90          | 0.06                     | 22.15          | 0.69                   | 1.17   | 1.23   | 1.32   |
| 950.00          | 3.86                    | 3.93          | 0.08                     | 21.95          | 0.64                   | 1.18   | 1.25   | 1.35   |
| 1000.00         | 3.86                    | 3.98          | 0.11                     | 21.68          | 0.58                   | 1.18   | 1.25   | 1.35   |

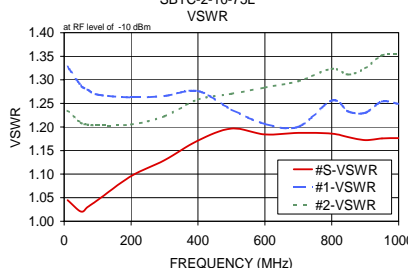
SBTC-2-10-75L INSERTION LOSS



SBTC-2-10-75L ISOLATION



SBTC-2-10-75L VSWR



## electrical schematic



ISO 9001 ISO 14001 AS 9100 CERTIFIED

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M11888  
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SBTC-2-10-75L+ ED-9226C/1  
WZ/TD/CP  
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