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## 2 Way-0° 50Ω

5 to 1000 MHz

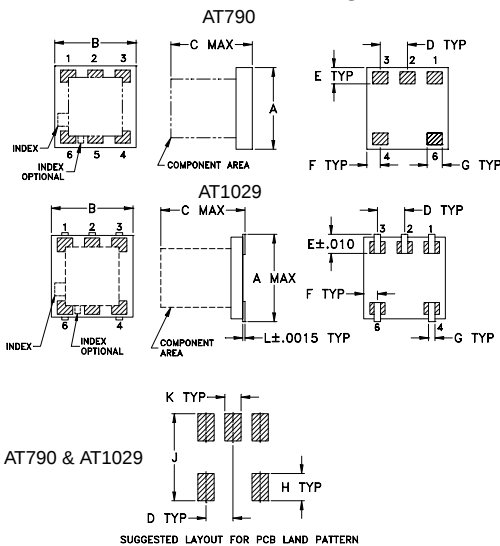
## Maximum Ratings

|                             |                |
|-----------------------------|----------------|
| 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



## Outline Dimensions (inch/mm)

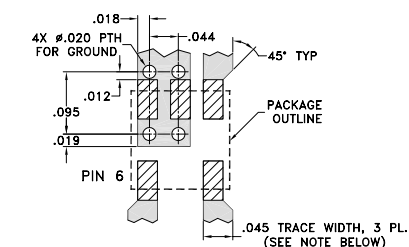
| AT790 | A    | B    | C    | D    | E    | F    | G    | H    | J    | K    | wt.   |
|-------|------|------|------|------|------|------|------|------|------|------|-------|
|       | .150 | .150 | .150 | .050 | .030 | .025 | .028 | .050 | .160 | .030 | grams |
|       | 3.81 | 3.81 | 3.81 | 1.27 | 0.76 | 0.64 | 0.71 | 1.27 | 4.06 | 0.76 | .10   |

| AT1029 | 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   |

## Reflow Solder Assembly

Silver-bearing solder (Sn/Pb/Ag 62/36/2%) is recommended; however, tin-lead eutectic (Sn/Pb 63/37%) may be used. For temperature profiles, see Application Note AN-40-004

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



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350 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

 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

## 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, BLUE CELL™ base
- solder plated leads for excellent solderability
- small size
- low cost
- patent pending

## Applications

- cellular
- UHF/VHF receivers/transmitters

## Splitter Electrical Specifications

| FREQ.<br>RANGE<br>(MHz) | ISOLATION<br>(dB) |      |      |      |      |      | INSERTION LOSS (dB)<br>ABOVE 3.0 dB |      |      |      |      |      | PHASE<br>UNBALANCE<br>(Degrees) |      |      | AMPLITUDE<br>UNBALANCE<br>(dB) |      |      |
|-------------------------|-------------------|------|------|------|------|------|-------------------------------------|------|------|------|------|------|---------------------------------|------|------|--------------------------------|------|------|
|                         | L                 |      | M    |      | U    |      | L                                   |      | M    |      | U    |      | L                               | M    | U    | L                              | M    | U    |
|                         | Typ.              | Min. | Typ. | Min. | Typ. | Min. | Typ.                                | Max. | Typ. | Max. | Typ. | Max. | Max.                            | Max. | Max. | Max.                           | Max. | Max. |
| 5-1000                  | 29                | 20   | 25   | 18   | 21   | 16   | 0.3                                 | 0.7  | 0.3  | 0.8  | 0.5  | 1.4  | 3                               | 3    | 5    | 0.6                            | 0.5  | 0.5  |

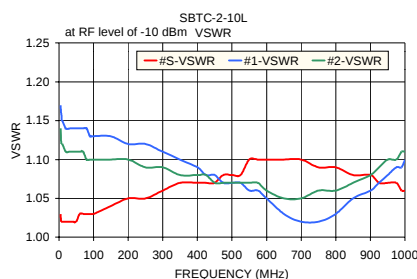
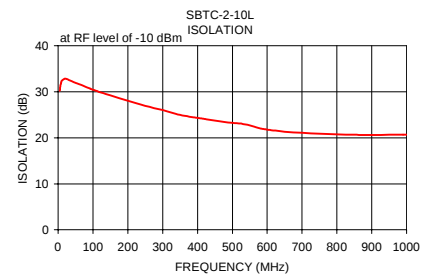
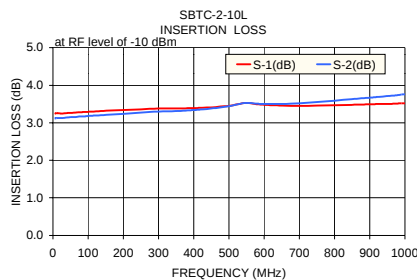
L = low range [ $f_1$  to  $10 f_1$ ]

M = mid range  $[10 f_1 \text{ to } f_1/2]$

mid range [ $10 f_1$  to  $f_1/2$ ]      U = upper range [ $f_1/2$  to  $f_1$ ]

## Typical Performance Data

| Frequency<br>(MHz) | Insertion<br>(dB)<br>S-1 | Loss<br>(dB)<br>S-2 | Amplitude<br>Unbalance<br>(dB) | Isolation<br>(dB) | Phase<br>Unbalance<br>(deg.) | VSWR<br>S | VSWR<br>1 | VSWR<br>2 |
|--------------------|--------------------------|---------------------|--------------------------------|-------------------|------------------------------|-----------|-----------|-----------|
| 5.00               | 3.25                     | 3.12                | 0.13                           | 30.21             | 0.41                         | 1.03      | 1.17      | 1.14      |
| 7.00               | 3.24                     | 3.11                | 0.13                           | 31.41             | 0.32                         | 1.02      | 1.16      | 1.12      |
| 10.00              | 3.26                     | 3.13                | 0.13                           | 32.34             | 0.13                         | 1.02      | 1.15      | 1.12      |
| 50.00              | 3.26                     | 3.15                | 0.12                           | 31.93             | 0.06                         | 1.02      | 1.14      | 1.11      |
| 70.00              | 3.28                     | 3.16                | 0.12                           | 31.37             | 0.07                         | 1.03      | 1.14      | 1.11      |
| 100.00             | 3.29                     | 3.18                | 0.11                           | 30.43             | 0.12                         | 1.03      | 1.13      | 1.10      |
| 200.00             | 3.34                     | 3.24                | 0.10                           | 28.05             | 0.20                         | 1.05      | 1.12      | 1.10      |
| 300.00             | 3.38                     | 3.30                | 0.08                           | 26.00             | 0.24                         | 1.06      | 1.11      | 1.09      |
| 400.00             | 3.39                     | 3.34                | 0.05                           | 24.32             | 0.26                         | 1.07      | 1.09      | 1.08      |
| 500.00             | 3.45                     | 3.44                | 0.02                           | 23.24             | 0.28                         | 1.08      | 1.07      | 1.07      |
| 600.00             | 3.48                     | 3.50                | 0.02                           | 21.78             | 0.28                         | 1.10      | 1.05      | 1.06      |
| 700.00             | 3.45                     | 3.52                | 0.07                           | 21.08             | 0.21                         | 1.10      | 1.02      | 1.05      |
| 800.00             | 3.47                     | 3.59                | 0.12                           | 20.74             | 0.09                         | 1.09      | 1.03      | 1.06      |
| 900.00             | 3.49                     | 3.67                | 0.18                           | 20.62             | 0.06                         | 1.08      | 1.06      | 1.08      |
| 1000.00            | 3.52                     | 3.76                | 0.24                           | 20.71             | 0.27                         | 1.06      | 1.10      | 1.11      |



REV. D  
M89618  
SBTC-2-10 ED-9227  
SBTC-2-10L ED-9915D/2  
WZ/TD/CP  
040212