

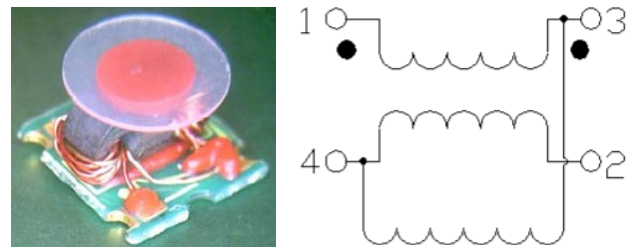
## Features

- Surface Mount
- 1:1 Impedance
- Excellent temperature stability
- RoHS Compliant
- 260°C Reflow compatible

## Description

The MABA-009210-CT1760 is a 1:1 RF transmission line Transformer in a low cost surface mount package. Ideally suited for high volume CATV/ Broadband application. Suitable for use in 50 Ohm and 75 Ohm systems.

## Functional Schematic



## Ordering Information

| Part Number        | Package        |
|--------------------|----------------|
| MABA-009210-CT1760 | 900 piece reel |
| MABA-009210-CT17TB | Sample Board   |

## Pin Configuration

| Pin Number | Function                    |
|------------|-----------------------------|
| 1          | Primary Dot (input)         |
| 2          | Secondary (o/p coupled)     |
| 3          | Secondary Dot (o/p through) |
| 4          | Primary (ground)            |

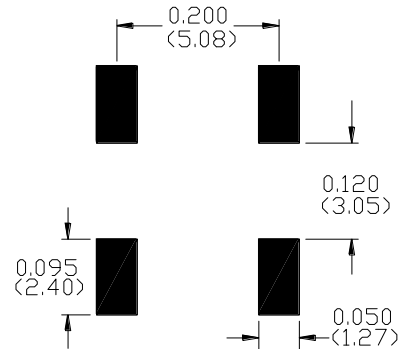
## Electrical Specifications: Freq. = 50 - 1200 MHz, T<sub>A</sub> = +25°C, Z<sub>0</sub> = 75 Ω

| Parameter                                    | Test Conditions | Units | Min. | Typ. | Max.  |
|--|-----------------|-------|------|------|-------|
| Insertion Loss 1<br>(Through) Pin 3 to pin 1 | 50 MHz          | dB    | —    | 0.13 | 0.33  |
|  | 870 MHz         |       |      | 0.53 | 0.93  |
|  | 1002 MHz        |       |      | 0.63 | 1.18  |
|  | 1200 MHz        |       |      | 0.83 | 1.93  |
| Insertion Loss 2<br>(Coupled) Pin 2 to pin 1 | 50 MHz          | dB    | —    | 0.43 | 0.62  |
|  | 870 MHz         |       |      | 0.33 | 0.63  |
|  | 1002 MHz        |       |      | 0.43 | 0.78  |
|  | 1200 MHz        |       |      | 0.63 | 1.33  |
| Amplitude Balance                            | 50 MHz          | dB    | —    | 0.3  | -0.6  |
|  | 870 MHz         |       |      | -0.1 | +0.7  |
|  | 1002 MHz        |       |      | -0.2 | +0.7  |
|  | 1200 MHz        |       |      | -0.2 | +0.8  |
| Phase Balance                                | 50 - 1002 MHz   | °     | —    | 1.2  | ± 4.0 |
|  | 1002 - 1200 MHz |       |      | 3.2  | ± 8.0 |
| Input Return Loss                            | 50 - 500 MHz    | dB    | 18.0 | 23.0 | —     |
|  | 500 - 1002 MHz  |       | 17.5 | 19.0 |       |
|  | 1002 - 1200 MHz |       | 11.0 | 18.0 |       |

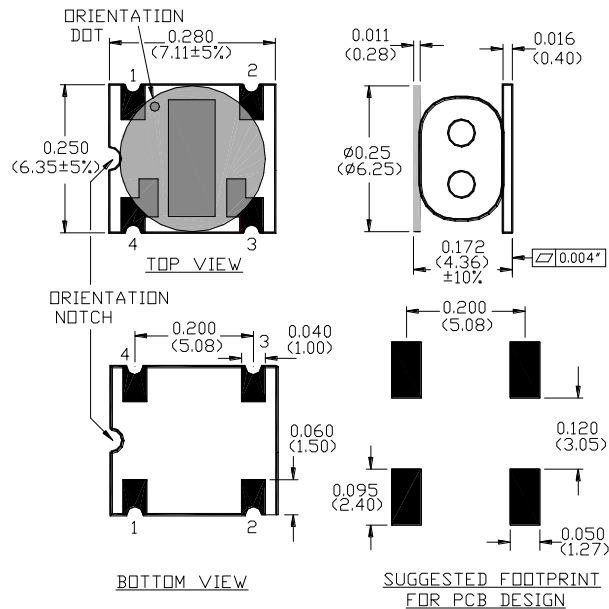
## Absolute Maximum Ratings

| Parameter                     | Absolute Maximum |
|-------------------------------|------------------|
| RF Power                      | 500 mW           |
| DC Current                    | 500 mA           |
| Operating/Storage Temperature | -40°C to +85°C   |

## Recommended Footprint



## Outline Drawing



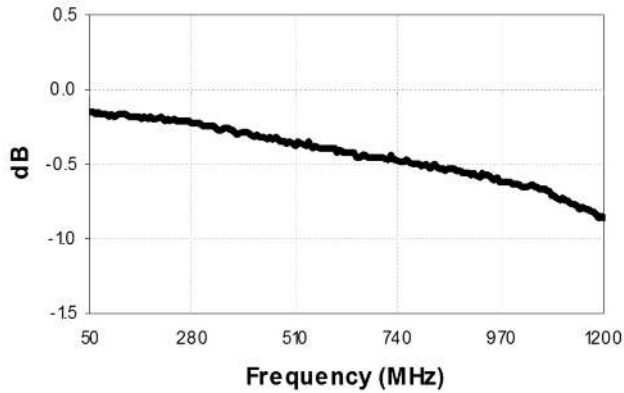
## Tape & Reel Information

| Parameter  | Units | Value |
|--|-------|-------|
| Qty per reel                                       | -     | 900   |
| Reel Size  | mm    | 330   |
| Tape Width   | mm    | 16.00 |
| Pitch  | mm    | 12.00 |
| Ao   | mm    | 6.80  |
| Bo   | mm    | 7.60  |
| Ko   | mm    | 5.30  |
| Orientation  | -     | F24   |
| Reference Application Note ANI-019 for orientation |       |       |

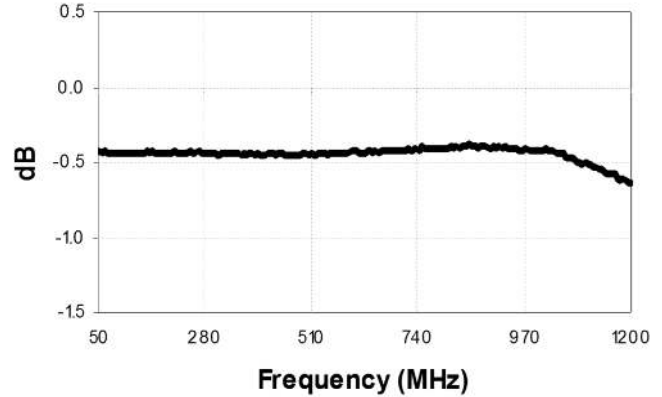
1. Dimensions in inches (mm).
2. Tolerance: .xx ±0.02, .xxx 0.01 unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Plating finish: ENIG on both sides, 0.05 to 0.1 µm gold over 3 to 6 µm nickel

Typical Performance Curves: Electrical Specifications:  $Z_0 = 75 \Omega$ ,  $T_A = 25^\circ\text{C}$ ,  $P_{in} = 0 \text{ dBm}$

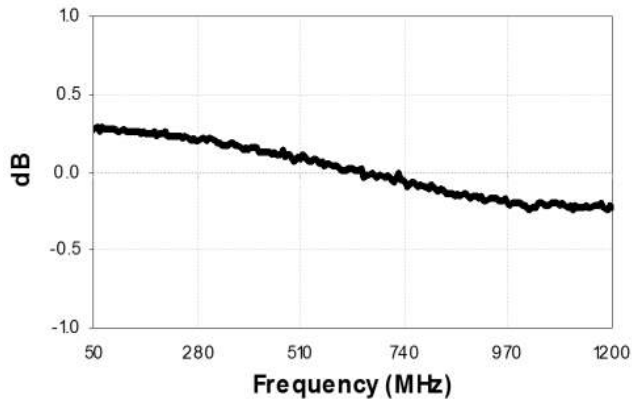
Insertion Loss 1: (through Pin 3-1)



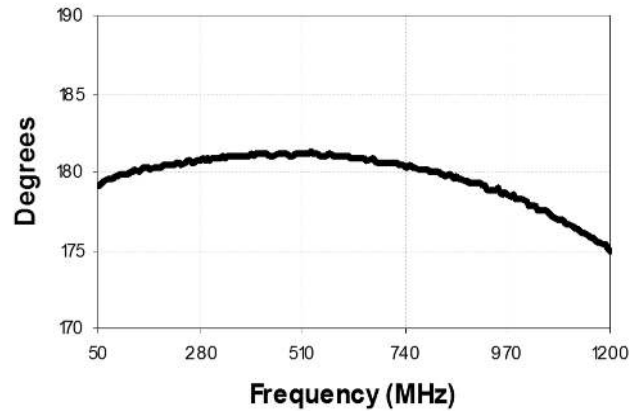
Insertion Loss 2: (coupled Pin 2-1)



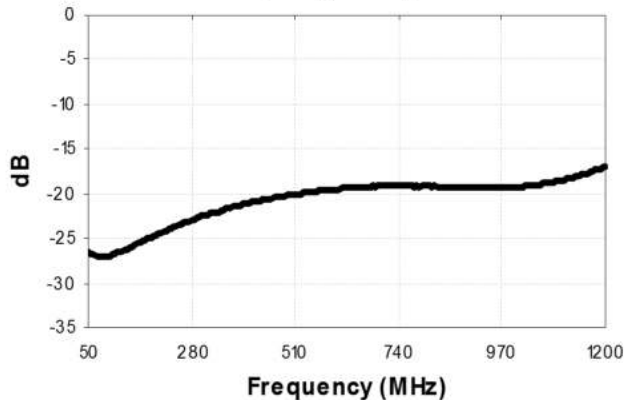
Amplitude Balance



Phase Balance



Return Loss: Input (Pin 1)



**Note:** The insertion loss graphs have minimum loss pad loss value subtracted from data. Loss value = -10.67dB.

Full temperature plots available on request

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