## 1:2 Transmission Line Transformer 1 - 1600 MHz

#### Features

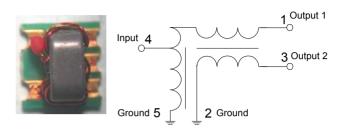
- Surface Mount Package
- 1:2 Impedance
- RoHS\* Compliant
- 260°C Reflow Compatible
- Tape and Reel Package

#### Description

The MABA-010247-2R1250 is a RoHS compliant 1:2 RF transmission line transformer in a surface mount package. The windings of this device are welded to the package substrate for improved reliability and to eliminate lead content.

Ideally suited for high volume cellular and wireless application.

### **Functional Schematic**



### **Pin Configuration**

| Pin # | Function            |  |
|-------|---------------------|--|
| 1     | Secondary           |  |
| 2     | Ground              |  |
| 3     | Secondary Dot       |  |
| 4     | Primary Dot (Input) |  |
| 5     | Primary (Ground)    |  |

## Electrical Specifications: Freq. = 1 - 1600 MHz, $T_A = 25^{\circ}C$ , $Z_0 = 50 \Omega$ , $P_{IN} = 0 \text{ dBm}$

| Parameter           | Test Conditions Frequency (MHz)     | Units | Min.     | Тур.              | Max.           |
|---------------------|-------------------------------------|-------|----------|-------------------|----------------|
| Insertion Loss      | 1 - 750<br>750 - 1250<br>1250 -1600 | dB    |          | 1.0<br>1.5<br>2.0 | <br>2.5<br>4.0 |
| Input Return Loss   | 1 - 500<br>500 - 1600               | dB    | 20<br>10 | 30<br>15          | _              |
| Amplitude Unbalance | 1 - 1250<br>1250 - 1600             | dB    | _        | 0.5<br>1.0        | 1.0<br>1.2     |
| Phase Unbalance     | 1 - 1600                            | o     | —        | 5                 | 10             |

## **Ordering Information**

| Parameter          | Package         |
|--------------------|-----------------|
| MABA-010247-2R1250 | 2000 piece reel |

#### **Absolute Maximum Ratings**

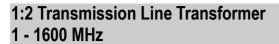
| Parameter             | Absolute Maximum |
|-----------------------|------------------|
| RF Input Power        | 250 mW           |
| DC Current            | 50 mA            |
| Operating Temperature | -40°C to +85°C   |
| Storage Temperature   | -55°C to +125°C  |

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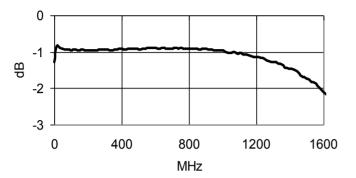


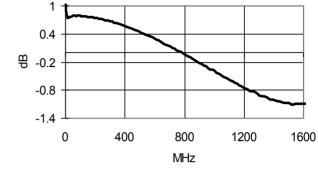
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## Typical Performance: $T_A = 25^{\circ}C$

Insertion Loss

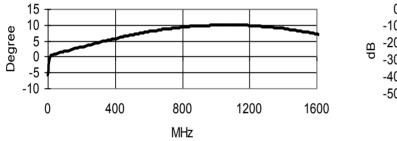


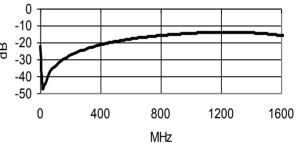


Phase Unbalance

Input Return Loss

Amplitude Unbalance



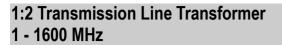


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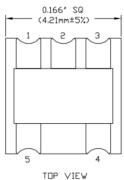
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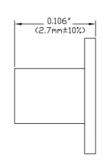




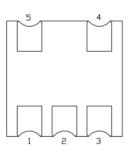
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### **Outline Drawing**





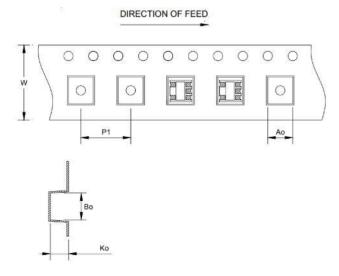
SIDE VIEW



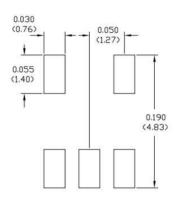
BOTTOM VIEW

Dimensions in inches (mm).  $\pm 0.015$  (0.38) . Tolerance: ±0.015 (0.38) unless otherwise noted.

## **Tape & Reel Information**



### **Recommended Footprint**



## **Tape & Reel Information**

| Item           | Units | Dimension  |
|----------------|-------|------------|
| Qty. per reel  | mm    | 2000       |
| Ao             | mm    | 4.55 ±0.1  |
| B <sub>o</sub> | mm    | 4.75 ±0.1  |
| Ko             | mm    | 3.10 ±0.1  |
| W              | mm    | 12.00 ±0.3 |
| P1             | mm    | 8.00 ±0.1  |

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<sup>3</sup> 

1:2 Transmission Line Transformer 1 - 1600 MHz



Rev. V4

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