

1:1 Transmission Line Transformer 4.5 - 3000 MHz

Rev. V3

Features

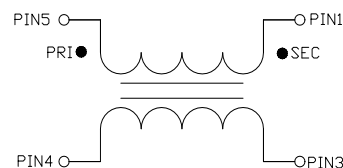
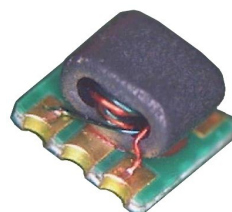
- 1:1 Impedance Ratio
- Surface Mount Package
- Available on Tape and Reel
- RoHS Compliant and Lead Free
- 260°C Reflow Compatible
- Excellent Temperature Stability
- Excellent Amplitude and Phase Balance
- Can be used in both 50 Ω & 75 Ω systems

Description

The MABA-007327-CT1A40 is a 1:1 RF transmission line transformer in a surface mount package.

Ideally suited for broadband CATV applications.

Functional Schematic



Pin Configuration

| Pin # | Function |
|-------|---------------|
| 1 | Secondary Dot |
| 2 | Not connected |
| 3 | Secondary |
| 4 | Primary |
| 5 | Primary Dot |

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

| Parameter | Frequency | Units | Min. | Typ. | Max. |
|-------------------|--|-------|------|-------------------|-------------------|
| Insertion Loss 1 | 4.5 - 1000 MHz 1000 - 2000 MHz 2000 - 3000 MHz | dB | — | 0.8 1.6 2.5 | 1.0 2.0 3.5 |
| Amplitude Balance | Nominal 0 dB, 4.5 - 3000 MHz | dB | — | ± 0.50 | ± 1.0 |
| Phase Balance | Nominal 180°, 4.5 - 3000 MHz | ° | — | ± 10.0 | ± 20.0 |

Ordering Information

| Part number | Description |
|--------------------|---------------------|
| MABA-007327-CT1A40 | 2000 piece reel |
| MABA-007327-CT1ATB | Customer Test Board |

Recommended Maximum Ratings^{1,2}

| Parameter | Value |
|-----------------------|-----------------|
| Input power | 250 mW |
| DC current | 30 mA |
| Operating Temperature | -40°C to +85°C |
| Storage Temperature | -55°C to +100°C |

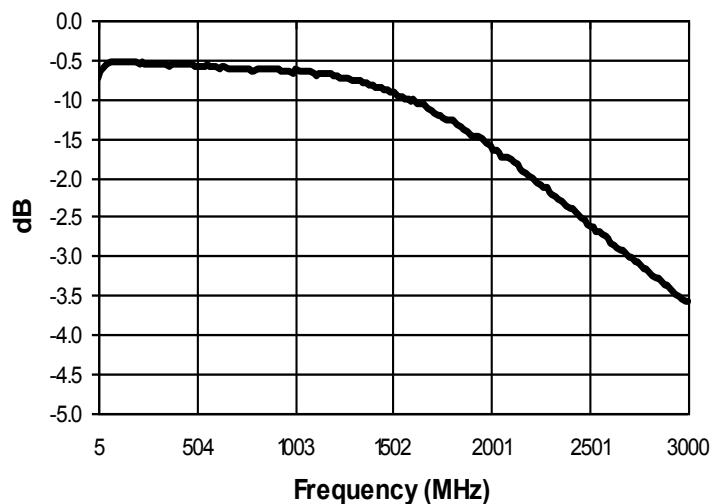
1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

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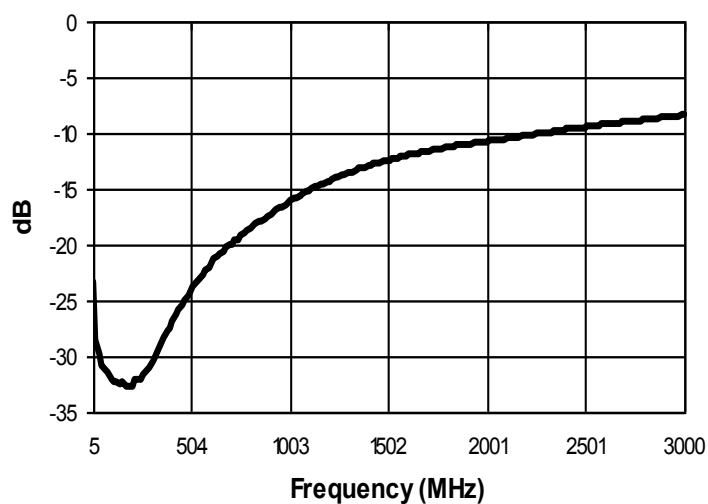
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Typical Performance Curves: $T_A = 25^\circ\text{C}$, $Z_0 = 75\ \Omega$, $P_{IN} = 0\ \text{dBm}$

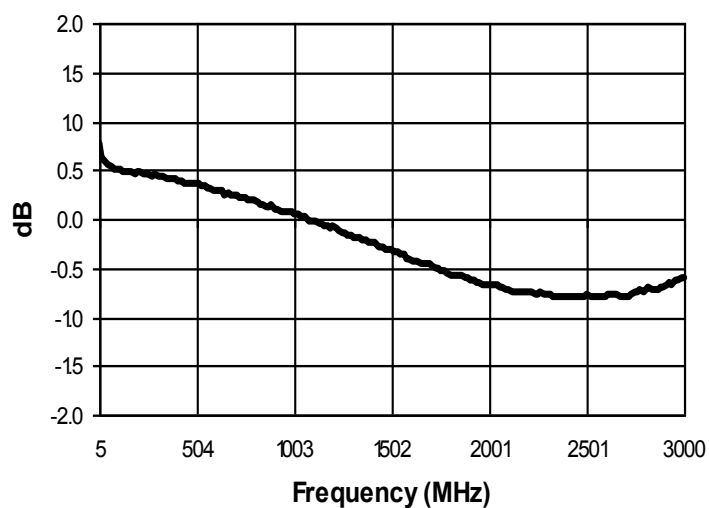
Insertion Loss



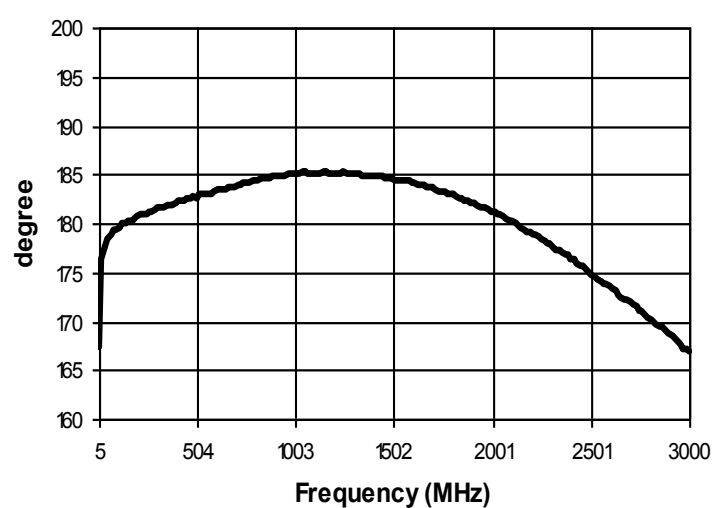
Return Loss: Input



Amplitude Balance



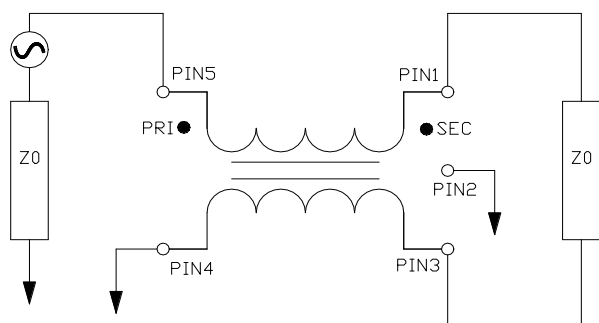
Phase Balance



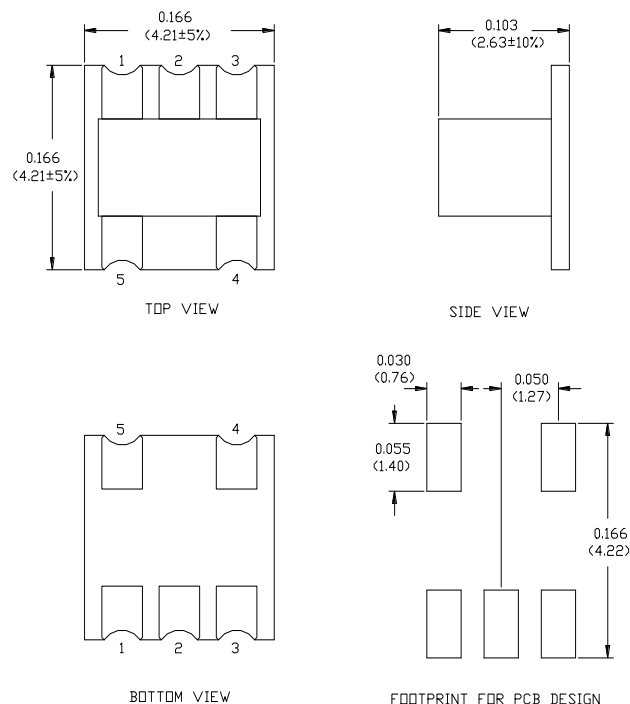
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Application Circuit

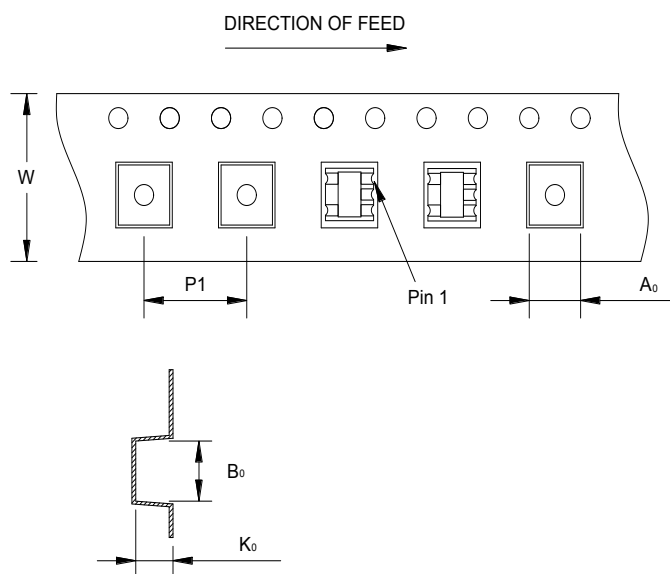


Outline Drawing



Dimensions in inches [mm] Tolerance: .xx ± .02, .xxx ± .010, unless otherwise stated

Reel Orientation



Tape & Reel Information

| Item | Dimension |
|----------------|--------------------|
| A ₀ | 4.50 mm +/- 0.1 mm |
| B ₀ | 4.50 mm +/- 0.1 mm |
| K ₀ | 2.73 mm +/- 0.1 mm |
| W | 12.0 mm +/- 0.3 mm |
| P1 | 8.0 mm +/- 0.1 mm |

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