

1:4 Transmission Line Transformer 10 - 1900 MHz

Rev. V3

Features

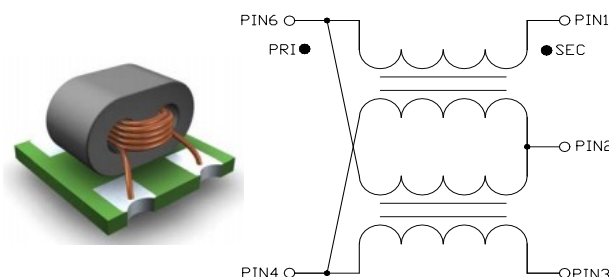
- 1:4 Impedance Ratio
- Surface Mount Package
- Excellent Temperature Stability
- Can Be Used on 50 Ω & 75 Ω Systems
- Available on Tape & Reel
- RoHS Compliant & Lead Free
- 260°C Reflow Compatible

Description

The MABA-010374-CT4A40 is a 1:4 transmission line transformer in a surface mount package.

Ideally suited for all CATV Broadband and FTTx applications.

Functional Schematic



Pin Configuration

| Pin # | Function |
|-------|---------------|
| 1 | Secondary Dot |
| 2 | Center Tap |
| 3 | Secondary |
| 4 | Primary |
| 6 | Primary Dot |

Electrical Specifications: Freq. = 10 - 1900 MHz, $T_A = 25^\circ\text{C}$, $Z_0 = 50 \Omega$, $P_{IN} = 0 \text{ dBm}$

| Parameter | Frequency (MHz) | Units | Min. | Typ. | Max. |
|--------------------------------|---------------------------------------|----------|---------|-------------------|-------------------------------------|
| Impedance Ratio | — | dB | — | 1:4 | — |
| Insertion Loss 1: (Pin 4-1) | 10 - 600 600 - 1300 1300 - 1900 | dB | — | 0.1 1.1 2.2 | 1.3 1.6 3.0 |
| Insertion Loss 1: (Pin 4-3) | 10 - 600 600 - 1300 1300 - 1900 | dB | — | 1.0 0.8 1.3 | 1.3 1.5 2.2 |
| Amplitude Balance | 10 - 615 615 - 1300 1300 - 1900 | dB | — | 0.0 0.3 1.0 | ± 0.5 ± 1.2 ± 2.3 |
| Phase Balance | 10 - 250 250 - 1000 1000 - 1900 | $^\circ$ | — | 2.7 7.3 5.8 | ± 5 ± 15 ± 20 |
| Input Return Loss (Pin 4) | 10 - 1000 1000 - 1900 | dB | 19 8 | 28 12 | — |

Ordering Information

| Part number | Description |
|--------------------|---------------------------|
| MABA-010374-CT4A40 | 2000 piece reel |
| MABA-010374-CT4ATB | customer evaluation board |

Recommended Maximum Ratings

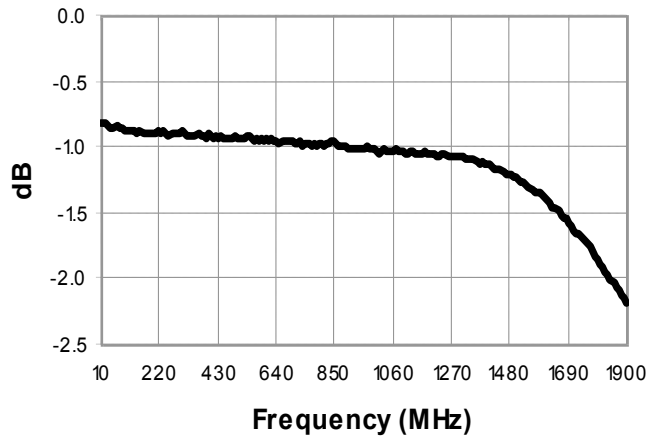
| Parameter | Value |
|-----------------------|-----------------|
| Input Power | 250 mW |
| DC Current | 200 mA |
| Operating Temperature | -40°C to +85°C |
| Storage Temperature | -55°C to +125°C |

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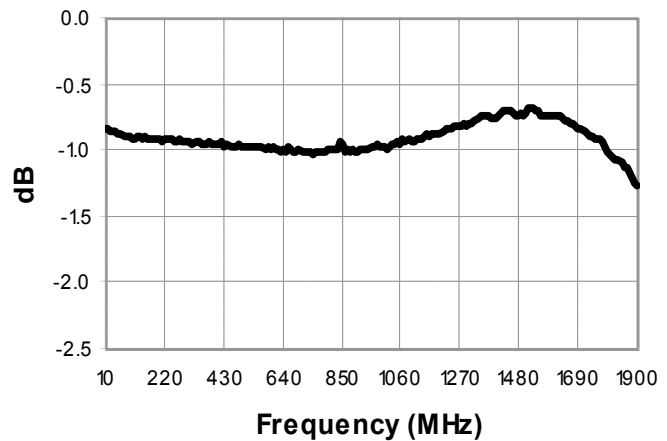
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Typical Performance Curves: $T_A = 25^\circ\text{C}$, $Z_0 = 50\ \Omega$, $P_{IN} = 0\ \text{dBm}$

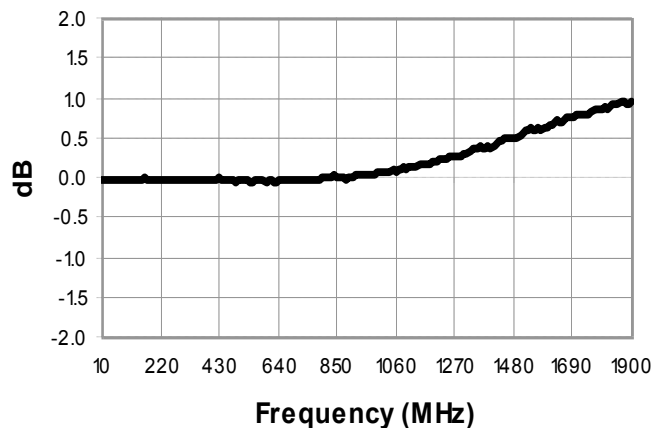
Insertion Loss 1: (Pin 4 to 1)



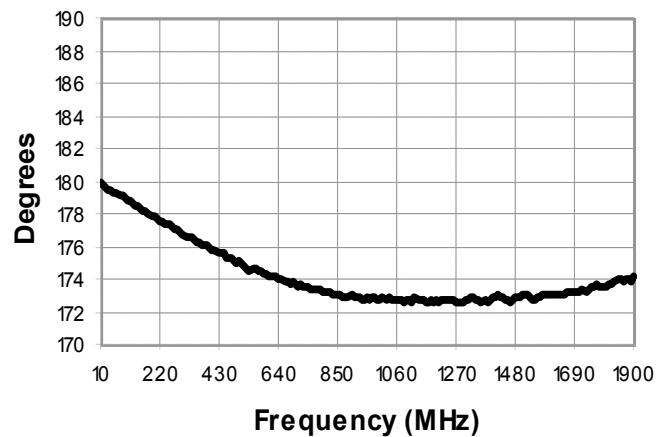
Insertion Loss 2: (Pin 4 to 3)



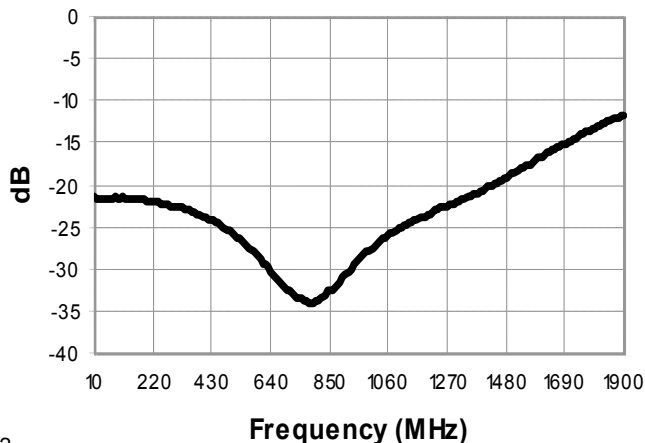
Amplitude Balance



Phase Balance



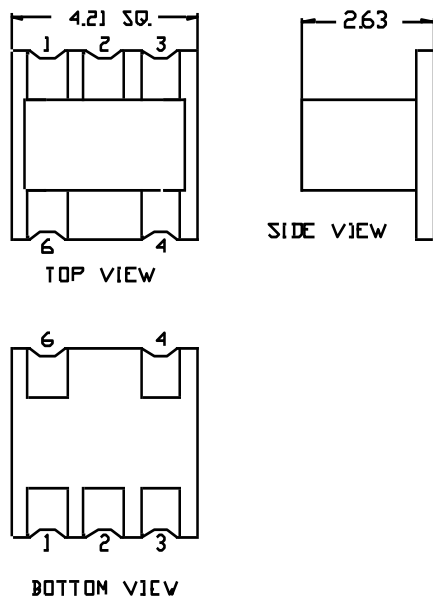
Return Loss: Input (Pin 4)



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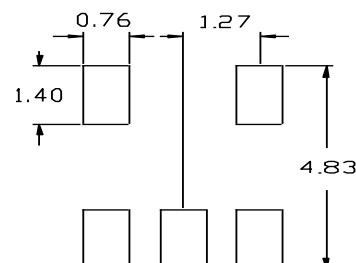
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Outline Drawing

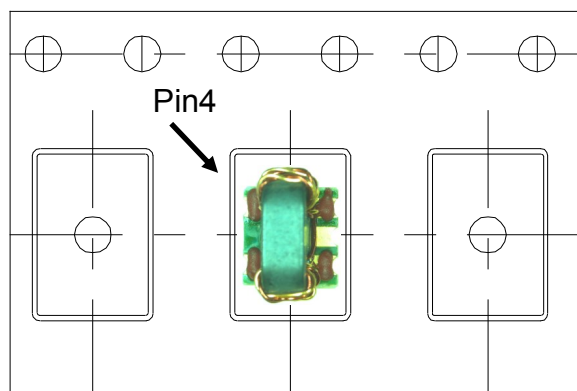


1. Dimensions in mm.
2. Tolerance: ± 0.2 mm unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Finish: Electroless nickel immersion gold.

PCB Layout



Carrier Tape Orientation



Tape & Reel Information

| Parameter | Units | Value |
|--|-------|-------|
| Qty per reel | - | 2000 |
| Reel Size | mm | 330 |
| Tape Width | mm | 12.0 |
| Pitch | mm | 8.0 |
| Ao | mm | 4.5 |
| Bo | mm | 4.5 |
| Ko | mm | 2.73 |
| Orientation | - | F31 |
| Reference Application Note ANI-019 for orientation | | |

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