

1:1 Transmission Line Transformer 4.5 - 1200 MHz

Rev. V2

Features

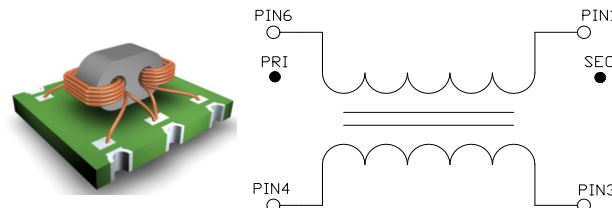
- 1:1 Impedance Ratio
- Surface Mount Package
- Excellent Temperature Stability
- Excellent Amplitude & Phase Balance
- Can Be Used In Both 50 Ω & 75 Ω Systems
- Available on Tape & Reel
- 260°C Reflow Compatible
- RoHS* Compliant & Lead Free

Description

The MABA-010314-CT1370 is a 1:1 RF transmission line transformer in a surface mount package.

Ideally suited for broadband CATV applications.

Schematic



Pin Configuration

| Pin # | Function |
|-------|------------------------|
| 1 | Secondary Dot |
| 2,5 | No Connection (ground) |
| 3 | Secondary |
| 4 | Primary |
| 6 | Primary Dot |

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

| Parameter | Frequency (MHz) | Units | Min. | Typ. | Max. |
|--------------------------------------|-----------------|-------|------|-----------|-----------|
| Insertion Loss 1 (Pin 6 to Pin 1) | 4.5 - 870 | dB | — | 0.50 | 1.0 |
| | 870 - 1200 | | | 1.20 | 2.0 |
| Insertion Loss 2 (Pin 6 to Pin 3) | 4.5 - 870 | dB | — | 0.60 | 1.0 |
| | 870 - 1200 | | | 0.70 | 1.4 |
| Amplitude Balance (Nominal 0 dB) | 4.5 - 50 | dB | — | ± 0.9 | ± 1.3 |
| | 50 - 1000 | | | ± 0.4 | ± 1.0 |
| | 1000 - 1200 | | | ± 0.7 | ± 1.1 |
| Phase Balance (Nominal 180°) | 4.5 - 50 | ° | — | ± 5 | ± 15 |
| | 50 - 1200 | | | ± 6 | ± 10 |
| Input Return Loss (Pin 6) | 4.5 - 350 | dB | 20 | 28 | — |
| | 350 - 1000 | | 16 | 23 | |
| | 1000 - 1200 | | 13 | 19 | |

Ordering Information

| Part number | Description |
|--------------------|---------------------------|
| MABA-010314-CT1370 | 900 piece reel |
| MABA-010314-CT13TB | customer evaluation board |

Recommended Maximum Ratings

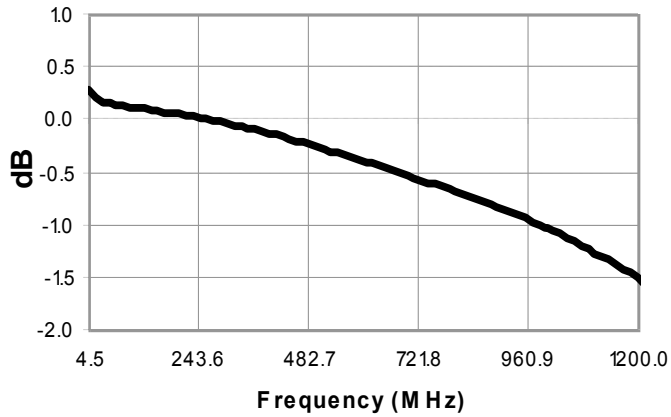
| Parameter | Value |
|----------------------------|-----------------|
| Input Power | 250 mW |
| DC Current, (tested @ 5 V) | 200 mA |
| Operating Temperature | -40°C to +85°C |
| Storage Temperature | -55°C to +125°C |

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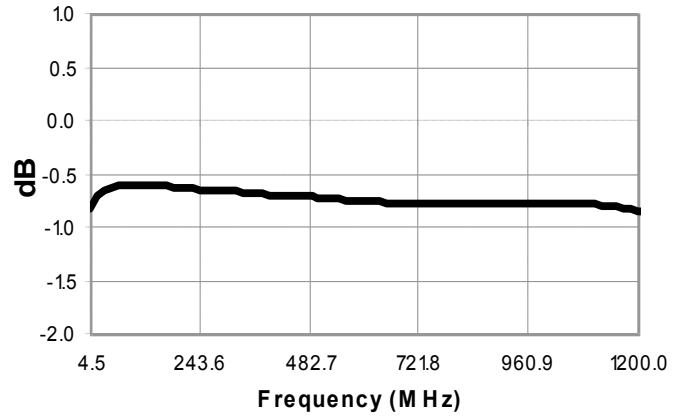
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Typical Performance Curves: $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{IN} = 0 \text{ dBm}$

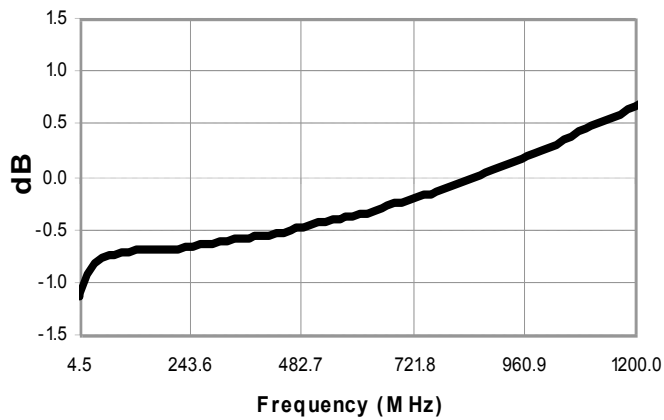
Insertion Loss 1: (Pin 6 to 1)



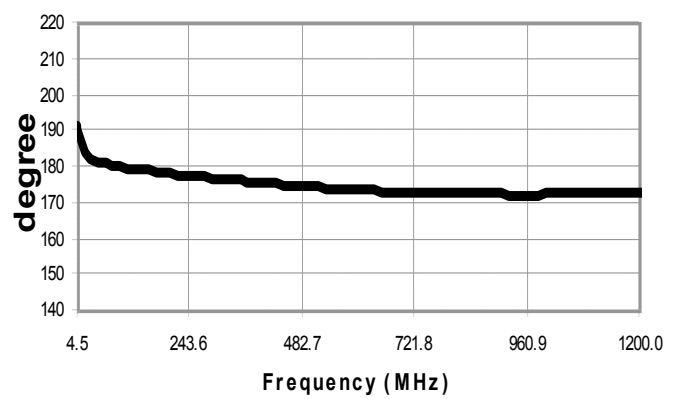
Insertion Loss 2: (Pin 6 to 3)



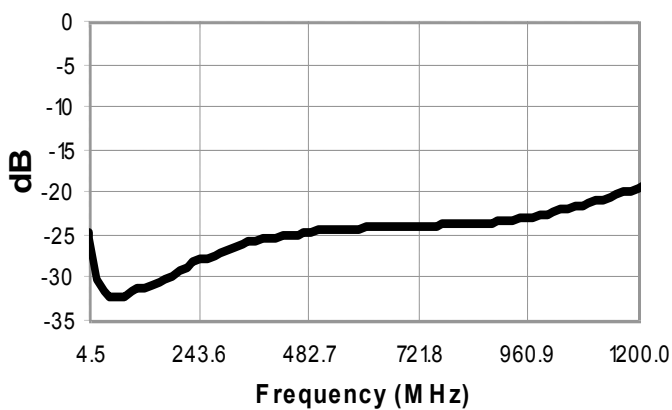
Amplitude Balance



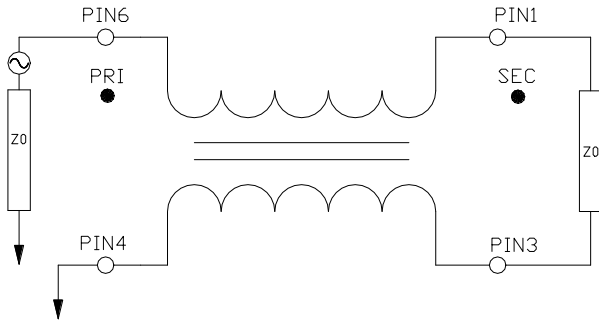
Phase Balance



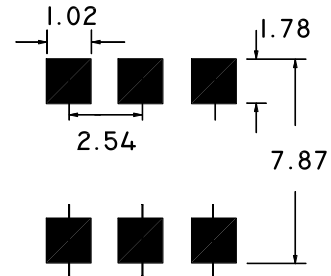
Return Loss: Input (Pin 6)



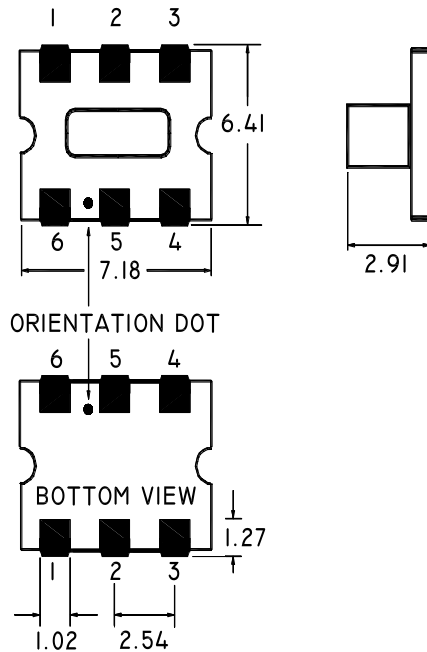
Application Circuit



Recommended Footprint



Outline Drawing (SM-55)



Tape & Reel Information

| Parameter | Units | Value |
|--|-------|-------|
| Qty per reel | - | 900 |
| Reel Size | mm | 330 |
| Tape Width | mm | 16 |
| Pitch | mm | 12 |
| Ao | mm | 6.7 |
| Bo | mm | 7.4 |
| Ko | mm | 3.1 |
| Orientation | - | F-15 |
| Reference Application Note ANI-019 for orientation | | |

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

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