

1:1 Transmission Line Transformer 40 - 200 MHz

Rev. V2

Features

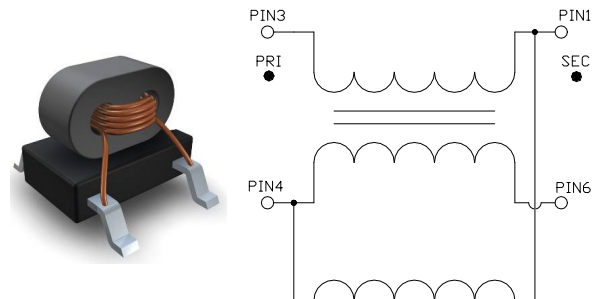
- 1:1 Impedance Ratio
- Surface Mount Package
- Excellent Temperature Stability
- Can Be Used on 50 Ω & 75 Ω Systems
- Suitable for all CATV, Broadband and FTTx Applications
- RoHS Compliant & Lead Free
- 260°C Reflow Compatible
- Available on Tape & Reel

Description

The MABA-010400-CT18A0 is a 1:1 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 (output 1) |
| 2,5 | Not Connected |
| 3 | Primary Dot (Input) |
| 4 | Primary (Ground) |
| 6 | Secondary (Output 2) |

Electrical Specifications: Freq. = 40 - 200 MHz, $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{IN} = 0 \text{ dBm}$

| Parameter | Frequency (MHz) | Units | Min. | Typ. | Max. |
|--------------------------------|-----------------|----------|------|------|-----------|
| Impedance Ratio | — | dB | — | 1:1 | — |
| Insertion Loss 1: (Pin 3-1) | 40 - 120 | dB | — | 0.4 | 0.5 |
| | 120 - 200 | | | 0.5 | 0.6 |
| Insertion Loss 1: (Pin 3-6) | 40 - 200 | dB | — | 0.4 | 0.5 |
| Amplitude Balance | 40 - 200 | dB | — | 0.1 | ± 0.2 |
| Phase Balance | 40 - 200 | $^\circ$ | — | 0.5 | ± 2.0 |
| Input Return Loss (Pin 3) | 40 - 200 | dB | 20 | 23 | — |

Ordering Information

| Part number | Description |
|--------------------|---------------------------|
| MABA-010400-CT18A0 | 2000 piece reel |
| MABA-010400-CT18TB | customer evaluation board |

Recommended Maximum Ratings

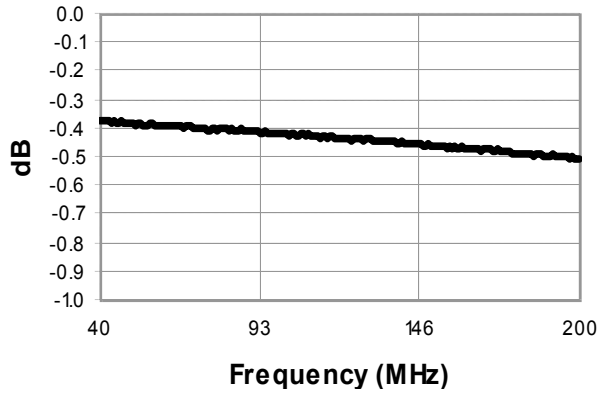
| Parameter | Value |
|-----------------------|-----------------|
| Input Power | 250 mW |
| DC Current | 200 mA |
| Operating Temperature | -40°C to +85°C |
| Storage Temperature | -55°C to +125°C |

1:1 Transmission Line Transformer 40 - 200 MHz

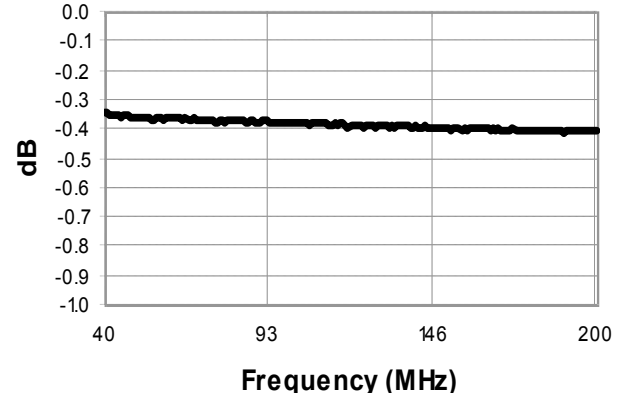
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Typical Performance Curves: $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{IN} = 0 \text{ dBm}$

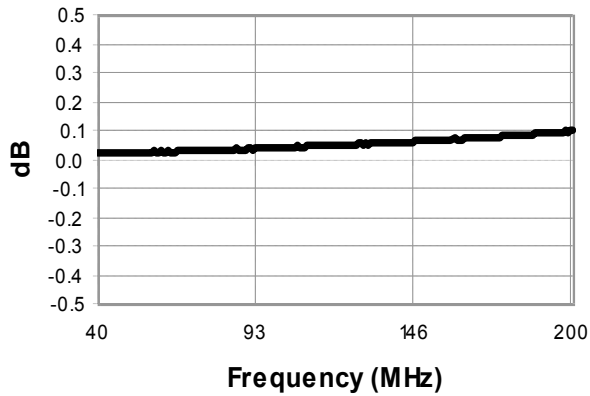
Insertion Loss 1: (Pin 3 to 1)



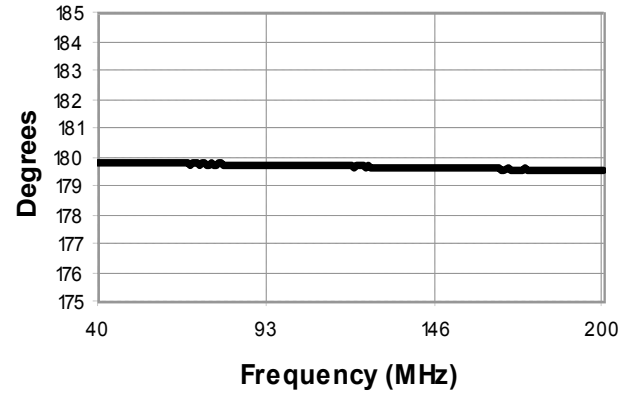
Insertion Loss 2: (Pin 3 to 6)



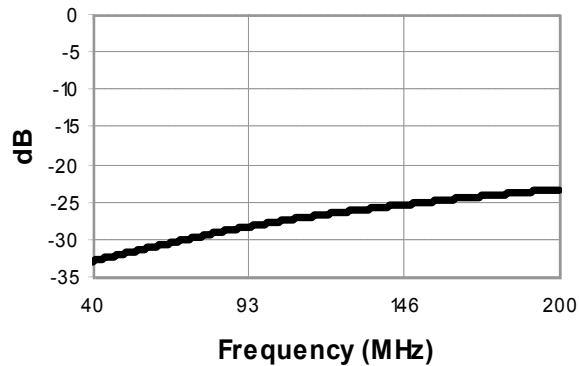
Amplitude Balance



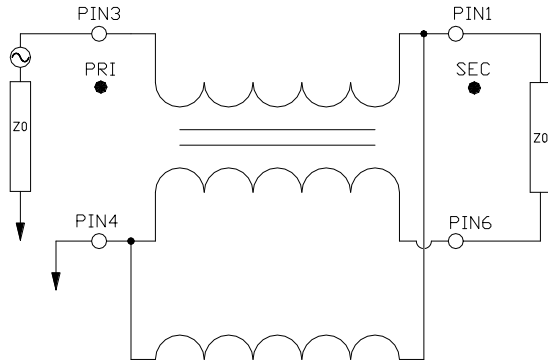
Phase Balance



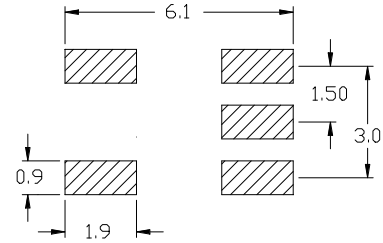
Return Loss: Input (Pin 3)



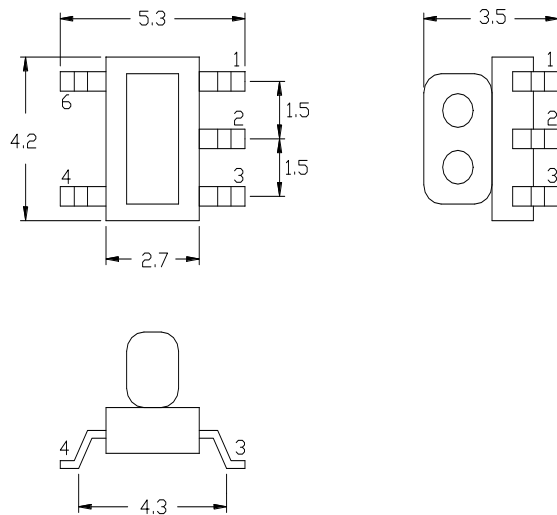
Application Circuit



PCB Layout



Outline Drawing



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 | 5.6 |
| Bo | mm | 4.5 |
| Ko | mm | 4.0 |
| Orientation | - | F26 |
| Reference Application Note ANI-019 for orientation | | |

1. Dimensions in mm.
2. Tolerance: ± 0.2 mm unless otherwise noted.
3. Model number and lot code printed on reel.
4. Pin material CuSn6.

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