

1:3 Transformer 5 - 1200 MHz

V2

Features

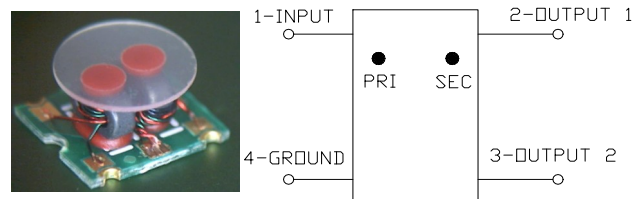
- Surface Mount
- 1:3 Impedance
- Available on Tape and Reel
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible
- Excellent Temperature Stability
- Can be used on 50 Ω & 75 Ω Systems

Description

The MABA-010441-CT38A0 is a 1:3 transformer assembled in a surface mount package.

Ideally suited for CATV Broadband.

Functional Schematic



Pin Configuration

| Pin No. | Function |
|---------|--------------------------|
| 1 | Primary Dot (input) |
| 2 | Secondary Dot (output 1) |
| 3 | Secondary (output 2) |
| 4 | Primary (ground) |

Electrical Specifications: Freq. = 5 - 1200 MHz, $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{in} = 0 \text{ dBm}$

| Parameter | Conditions | Units | Min. | Typ. | Max. |
|-------------------------------------|--|---------|----------------|----------------------|--|
| Impedance Ratio | — | — | — | 1:3 | — |
| Insertion Loss 1 (Pin 1 - Pin 2) | 5 - 50 MHz 50 - 1000 MHz 1000 - 1200 MHz | dB | — | 0.75 1.10 1.75 | 1.20 1.90 2.25 |
| Insertion Loss 2 (Pin 1 - Pin 3) | 5 - 50 MHz 50 - 1000 MHz 1000 - 1200 MHz | dB | — | 0.70 1.10 1.75 | 1.30 2.20 2.50 |
| Amplitude Unbalance | 5 - 50 MHz 50 - 1000 MHz 1000 - 1200 MHz | dB | — | 0.02 0.05 0.15 | ± 0.70 ± 0.70 ± 0.80 |
| Phase Balance | 5 - 50 MHz 50 - 1200 MHz | degrees | — | 0.6 6.6 | ± 5 ± 10 |
| Input Return Loss | 5 - 50 MHz 50 - 1000 MHz 1000 - 1200 MHz | dB | 19 15 15 | 21 21 24 | — |

Ordering Information¹

| Part Number | Description |
|-----------------------|----------------|
| MABA-010441-CT38A0 | 900 piece reel |
| MABA-010441-CT38A0-TB | sample board |

1. All sample boards include 5 loose parts.

Absolute Maximum Ratings

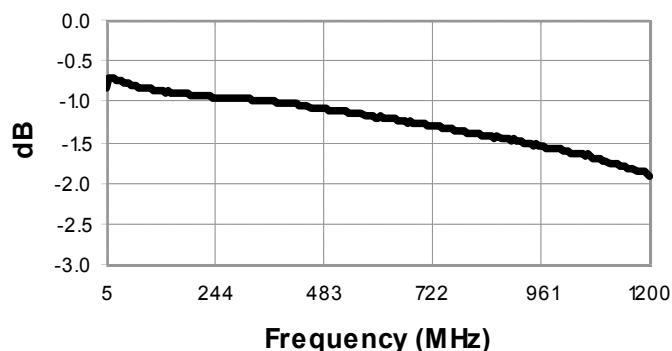
| Parameter | Absolute Maximum |
|-----------------------|---|
| Input Power | 250 mW |
| DC Current | 200 mA |
| Operating Temperature | -40°C to $+85^\circ\text{C}$ |
| Storage Temperature | -55°C to $+125^\circ\text{C}$ |

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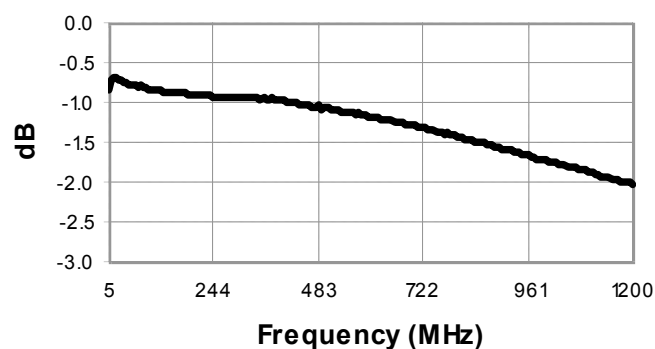
V2

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

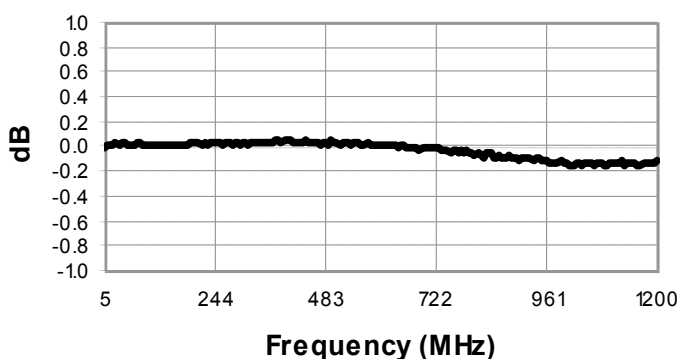
Insertion Loss: Pin1—Pin2



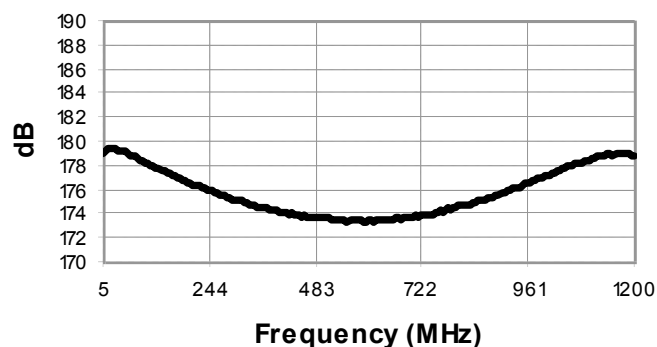
Insertion Loss: Pin1—Pin3



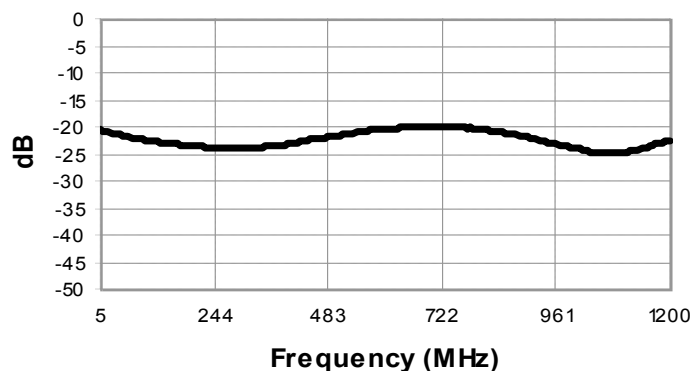
Amplitude Balance



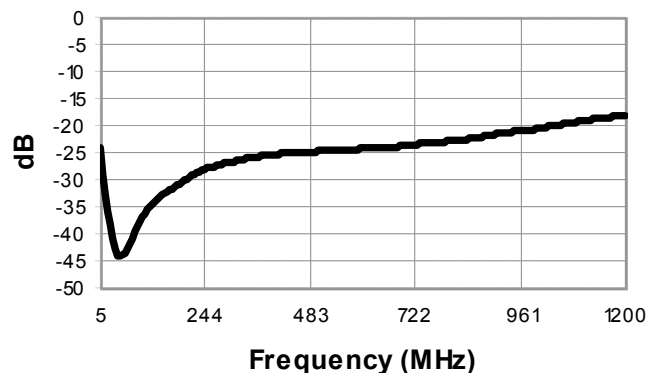
Phase Balance



Return Loss: Input



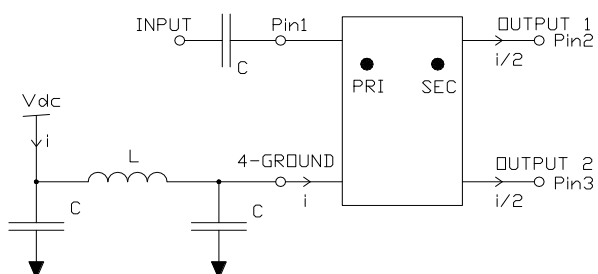
Return Loss: Output



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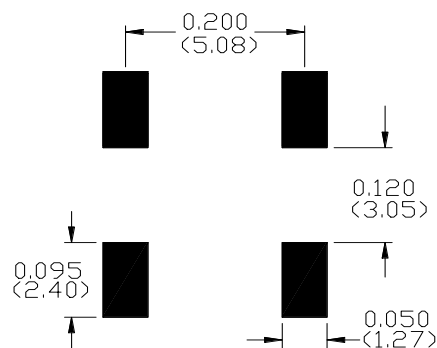
V2

Recommended DC Bias Circuit

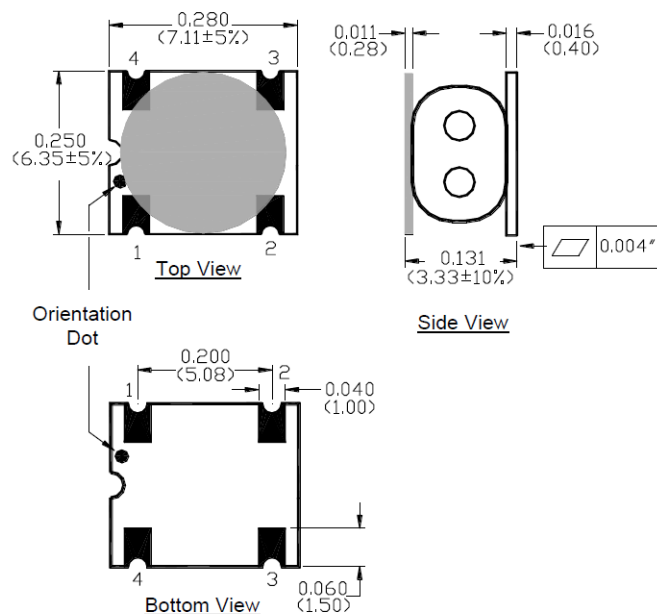


| Cap/Ind | 5 - 50 MHz | 50 - 1200 MHz |
|---------|------------|---------------|
| C | 100 nF | 10 nF |
| L | 10 μ H | 1 μ H |

Recommended Board Layout



Outline Drawing



Tape & Reel Information

| Parameter | Units | Value |
|----------------|-------|-------|
| Qty per reel | - | 900 |
| Reel size | mm | 330 |
| Tape width | mm | 16.00 |
| Pitch | mm | 12.00 |
| A ₀ | mm | 6.70 |
| B ₀ | mm | 7.50 |
| K ₀ | mm | 3.60 |
| Orientation | - | F27 |

Dimensions in mm.
Tolerance: \pm 0.2 mm unless otherwise noted.
Model number and lot code are printed on the reel.
Finish: ENIG

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