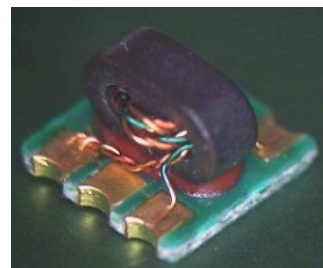


Features

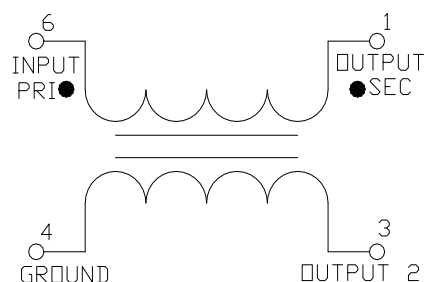
- Surface Mount
- 1:1 Impedance
- Excellent MoCA band performance
- Excellent amplitude and phase balance
- Can be used in both 50Ω and 75Ω systems
- 260°C Reflow Compatible
- RoHS* Compliant, Pb Free
- Available on Tape and Reel.



Description

MABA-007871-CT1A40 is a 1:1 RF Transmission Line step up transformer in a low cost, surface mount package. Ideally suited for MoCA band applications.

Schematic



Pin Configuration

Ordering Information¹

| Part Number | Package |
|--------------------|---------------------|
| MABA-007871-CT1A40 | 2000 piece reel |
| MABA-007871-CT1ATB | Customer Test Board |

1. Reference Application Note M513 for reel size information.

| Pin No. | Function |
|---------|--------------------------|
| 1 | Secondary Dot (Output 1) |
| 2 | Not used (Ground) |
| 3 | Secondary (Output 2) |
| 4 | Primary (Ground) |
| 6 | Primary Dot (Input) |

* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

Transformer 1:1 transmission line balun 5 to 3000 MHz

Rev. V6

Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 50 \Omega$

| Parameter | Test Conditions | Units | Min | Typ | Max |
|--------------------------------------|-----------------|-------|-----|------|-----------|
| Insertion Loss | 5 - 50 MHz | dB | — | 0.35 | 2.50 |
| | 50 - 975 MHz | | | 0.4 | 0.60 |
| | 975 - 1525 MHz | | | 0.3 | 1.00 |
| | 1525 - 2150 MHz | | | 0.65 | 2.30 |
| | 2150 - 3000 MHz | | | 2.5 | 6.00 |
| Input Return Loss | 5 - 50 MHz | dB | 12 | 28 | — |
| | 50 - 975 MHz | | 15 | 23 | |
| | 975 - 1525 MHz | | 13 | 21 | |
| | 1525 - 2150 MHz | | 6 | 12 | |
| | 2150 - 3000 MHz | | 3 | 6 | |
| Amplitude Unbalance (Nominal 0dB) | 5 - 50 MHz | dB | — | 0.45 | ± 3.8 |
| | 50 - 975 MHz | | | 0.15 | ± 0.7 |
| | 975 - 1525 MHz | | | 0.15 | ± 0.7 |
| | 1525 - 2150 MHz | | | 0.38 | ± 0.9 |
| | 2150 - 3000 MHz | | | 0.05 | 1.6 |
| Phase Unbalance (Nominal 180°) | 5 - 50 MHz | ° | — | 6.5 | ± 50 |
| | 50 - 975 MHz | | | 0.1 | ± 5 |
| | 975 - 1525 MHz | | | 0.1 | ± 4 |
| | 1525 - 2150 MHz | | | 3 | ± 12 |
| | 2150 - 3000 MHz | | | 13 | 35 |

Temperature data available on request

Absolute Maximum Ratings

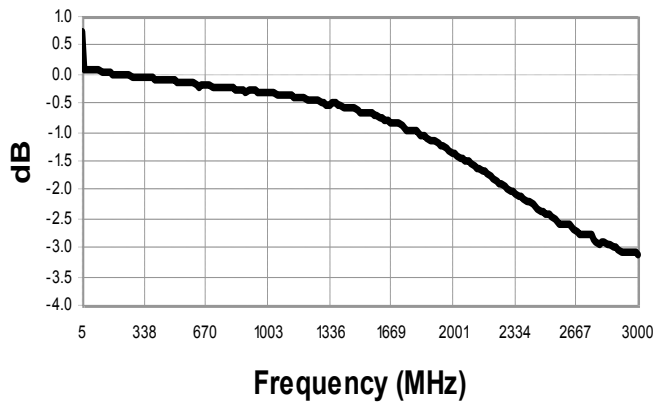
| Parameter | Absolute Maximum |
|-----------------------|------------------|
| Max Input Power | 250 mW |
| DC current | 200 mA |
| Operating Temperature | -40°C to +105°C |
| Storage Temperature | -40°C to +85°C |

Transformer 1:1 transmission line balun 5 to 3000 MHz

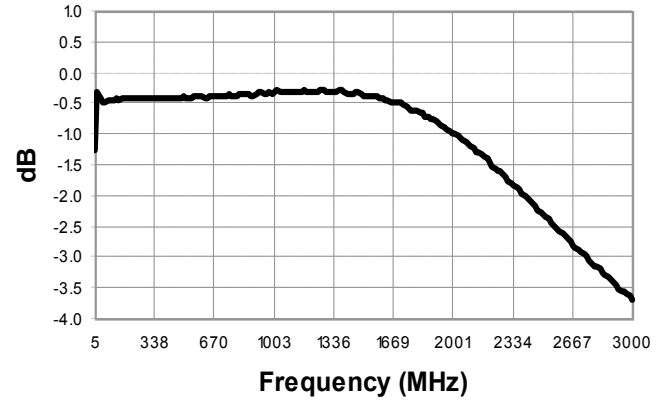
Rev. V6

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

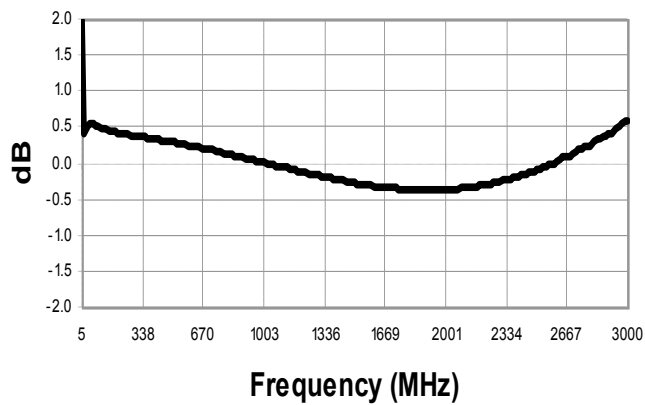
Insertion Loss 1: through pin 6 to pin 1



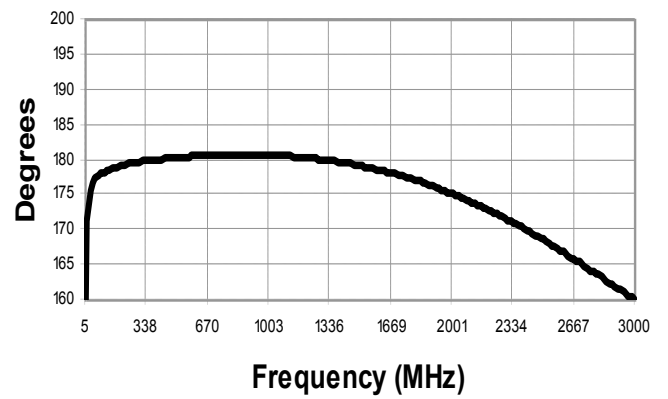
Insertion Loss 2: coupled pin 6 to pin 3



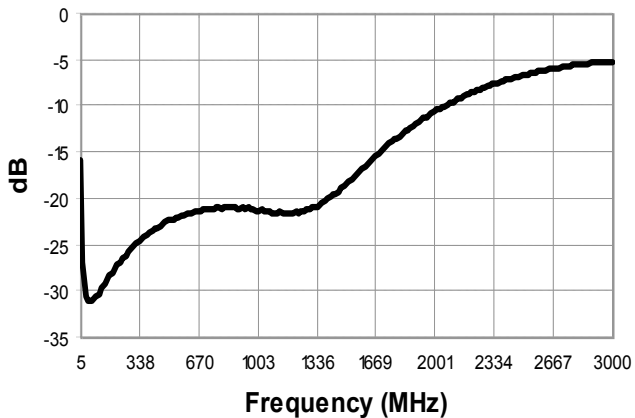
Amplitude Balance



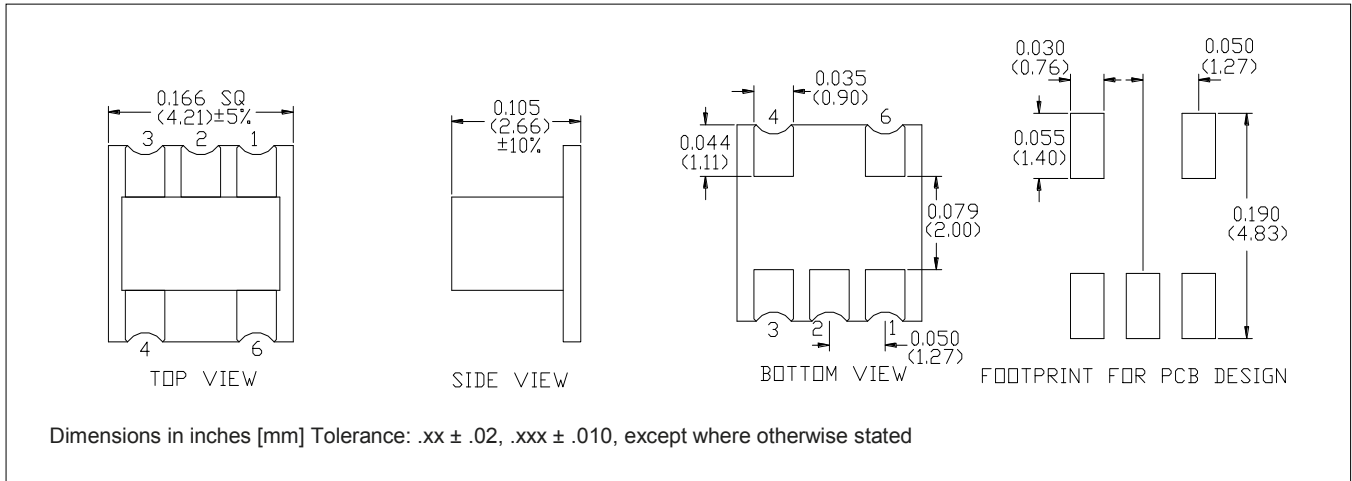
Phase Balance



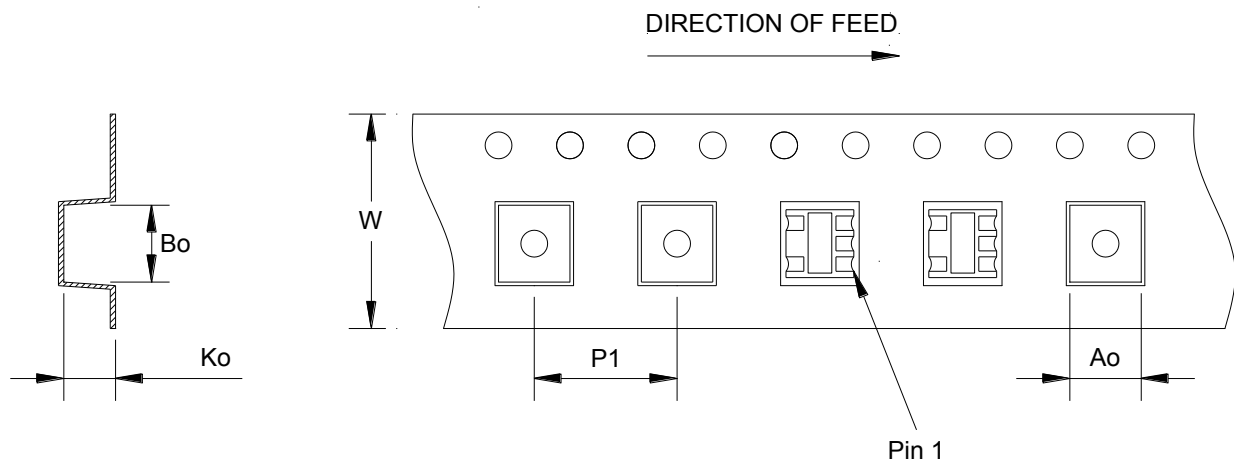
Input Return Loss



Case Style:



Tape & Reel Information



| Item | Dimension |
|------|-------------------|
| Ao | 4.50mm +/- 0.1mm |
| Bo | 4.50mm +/- 0.1mm |
| Ko | 2.73mm +/- 0.1mm |
| W | 12.00mm +/- 0.3mm |
| P1 | 8.00mm +/- 0.1mm |