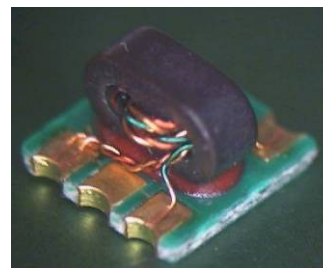


Transformer 1:1 transmission line balun 5 to 3000 MHz

Rev. V6

Features

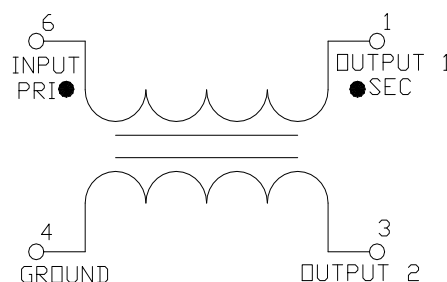
- Surface Mount
- 1:1 Impedance
- Excellent MoCA band performance
- Excellent amplitude and phase balance
- Can be used in both 50Ω and 75Ω systems
- 260°C Reflow Compatible
- RoHS* Compliant, Pb Free
- Available on Tape and Reel.



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

Temperature data available on request

Absolute Maximum Ratings

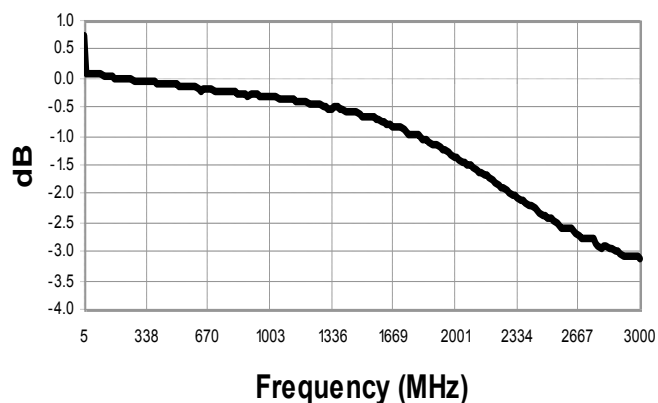
Parameter	Absolute Maximum
Max Input Power	250 mW
DC current	200 mA
Operating Temperature	-40°C to +105°C
Storage Temperature	-40°C to +85°C

Transformer 1:1 transmission line balun 5 to 3000 MHz

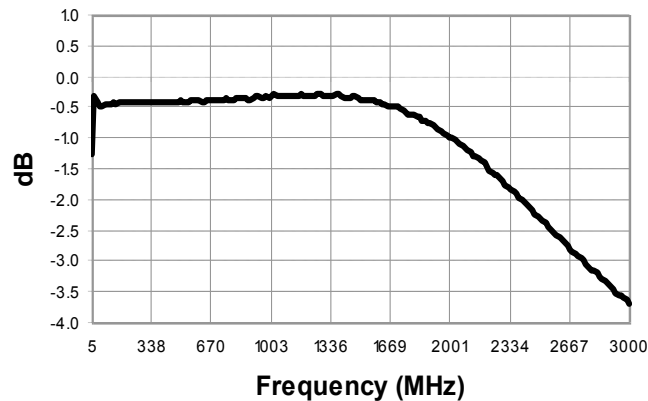
Rev. V6

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

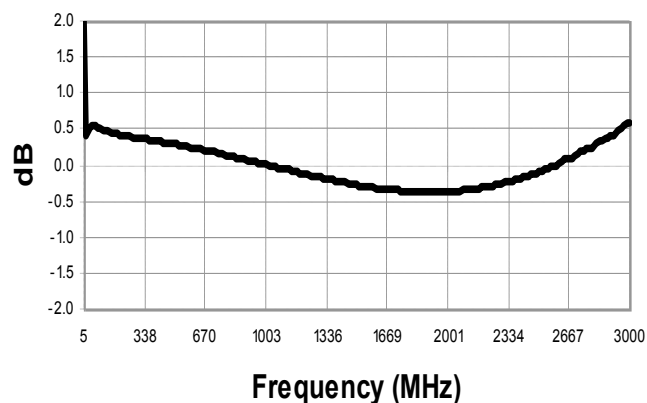
Insertion Loss 1: through pin 6 to pin 1



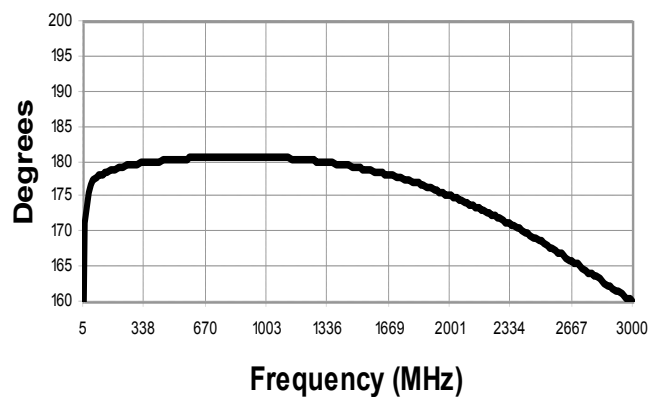
Insertion Loss 2: coupled pin 6 to pin 3



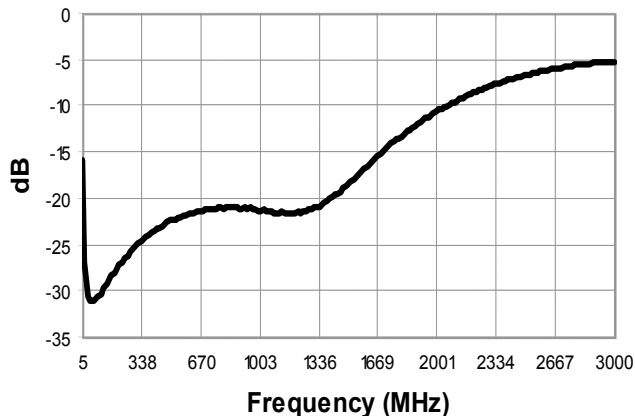
Amplitude Balance



Phase Balance



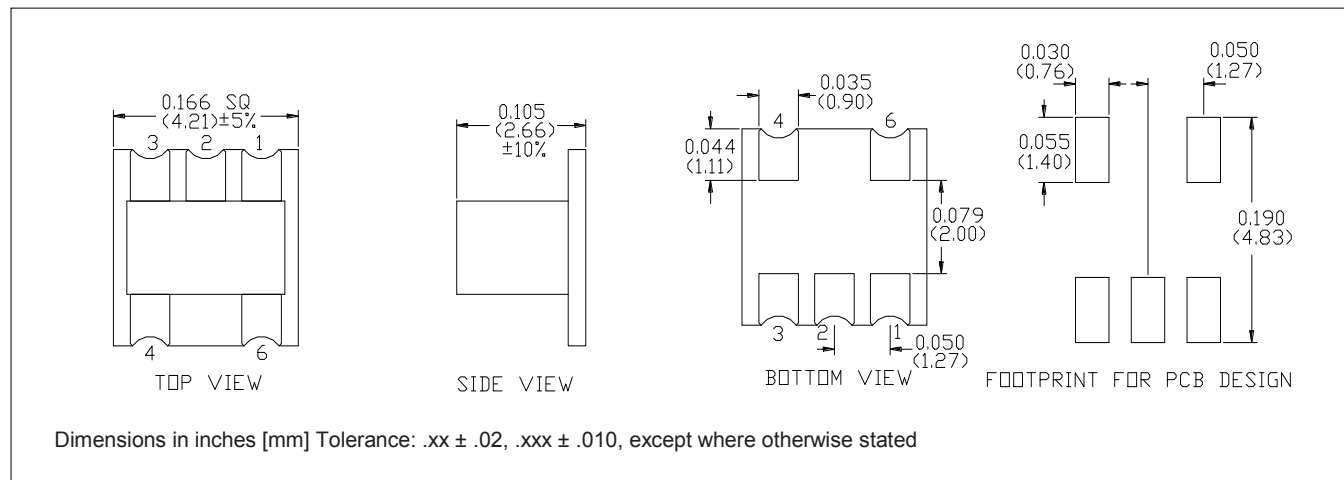
Input Return Loss



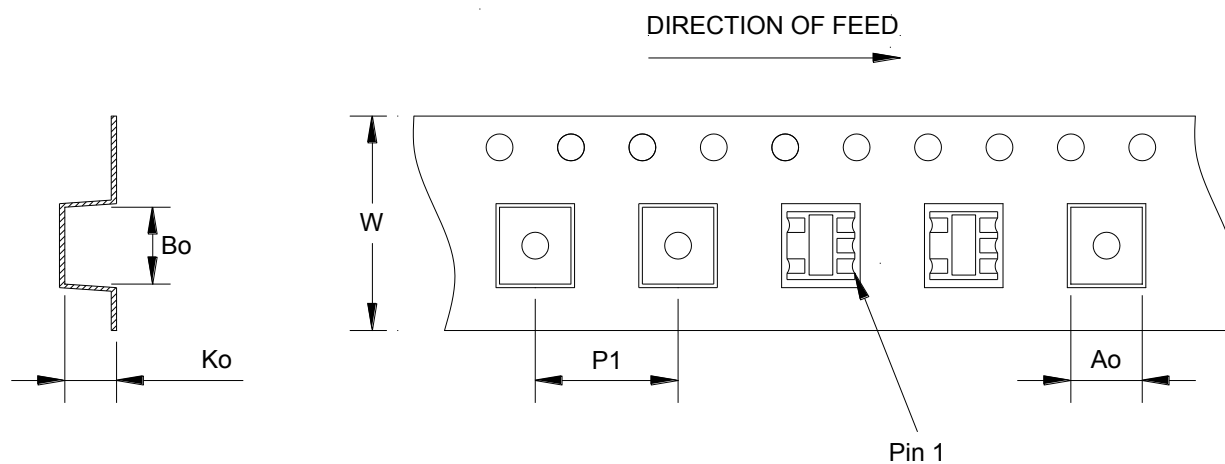
Transformer 1:1 transmission line balun 5 to 3000 MHz

Rev. V6

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

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