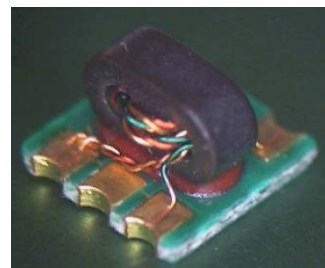


## Features

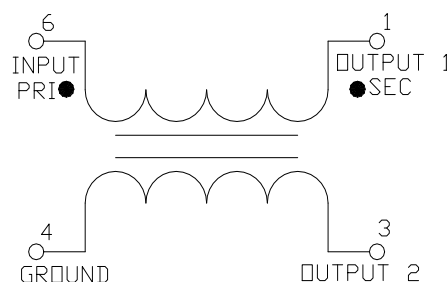
- Surface Mount
- 1:1 Impedance
- Excellent MoCA band performance
- Excellent amplitude and phase balance
- Can be used in both 50Ω and 75Ω systems
- 260°C Reflow Compatible
- RoHS\* Compliant, Pb Free
- Available on Tape and Reel.



## 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



## Ordering Information<sup>1</sup>

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 Configuration

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	$\pm 3.8$
	50 - 975 MHz			0.15	$\pm 0.7$
	975 - 1525 MHz			0.15	$\pm 0.7$
	1525 - 2150 MHz			0.38	$\pm 0.9$
	2150 - 3000 MHz			0.05	1.6
Phase Unbalance (Nominal 180°)	5 - 50 MHz	°	—	6.5	$\pm 50$
	50 - 975 MHz			0.1	$\pm 5$
	975 - 1525 MHz			0.1	$\pm 4$
	1525 - 2150 MHz			3	$\pm 12$
	2150 - 3000 MHz			13	35

Temperature data available on request

### Absolute Maximum Ratings

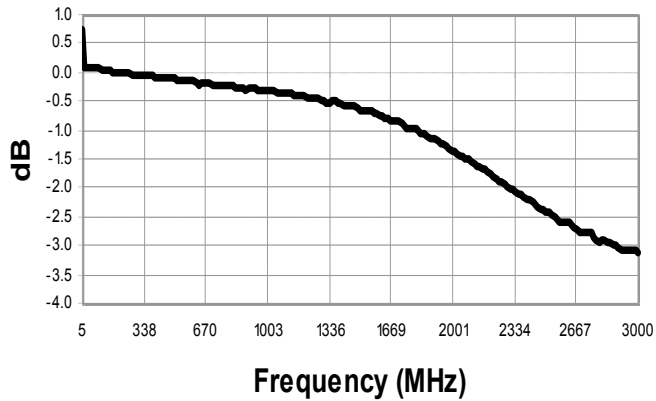
Parameter	Absolute Maximum
Max Input Power	250 mW
DC current	200 mA
Operating Temperature	-40°C to +105°C
Storage Temperature	-40°C to +85°C

**Transformer 1:1 transmission line balun  
5 to 3000 MHz**

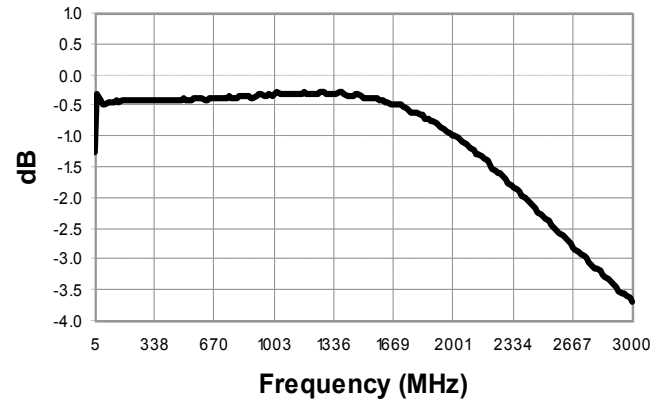
Rev. V6

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

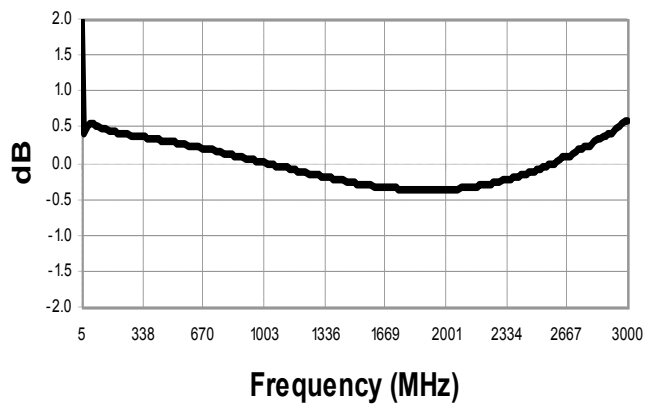
**Insertion Loss 1: through pin 6 to pin 1**



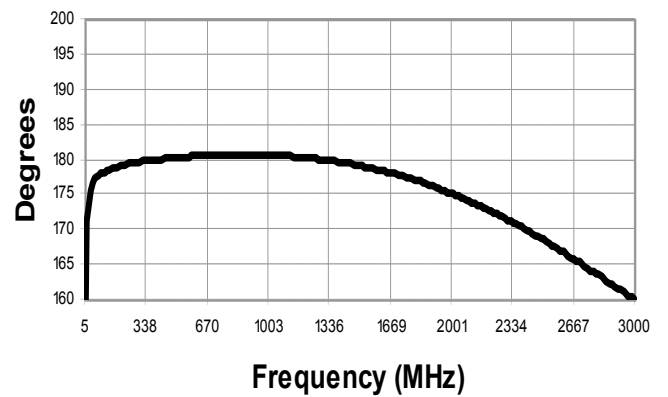
**Insertion Loss 2: coupled pin 6 to pin 3**



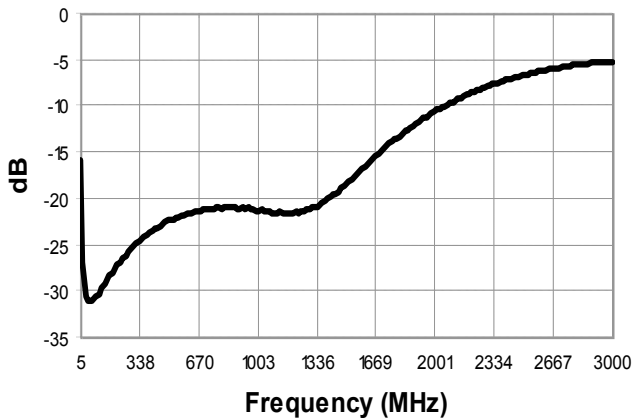
**Amplitude Balance**



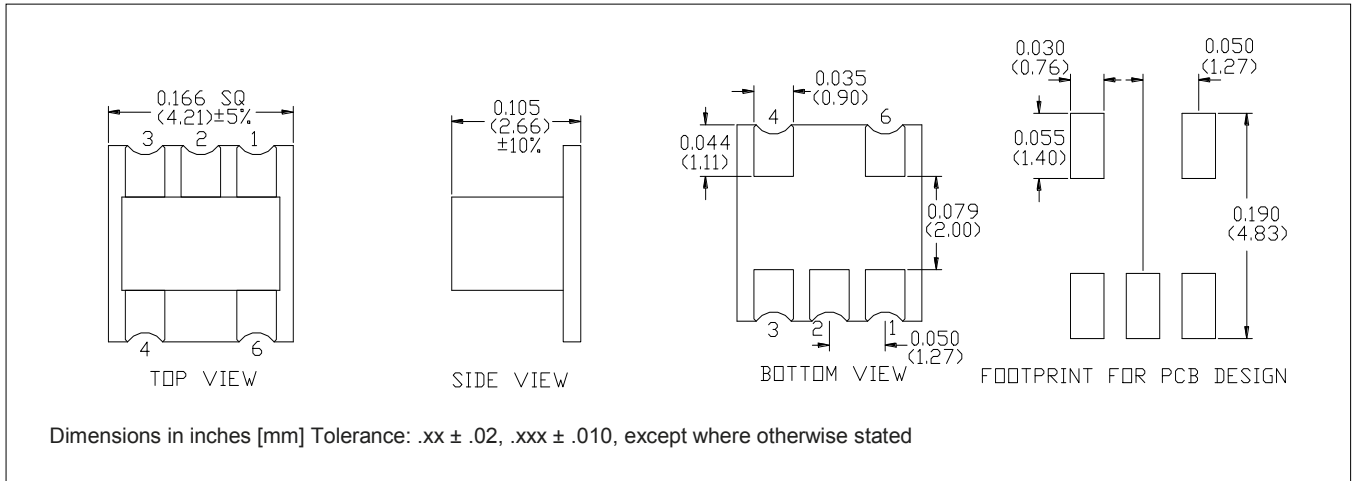
**Phase Balance**



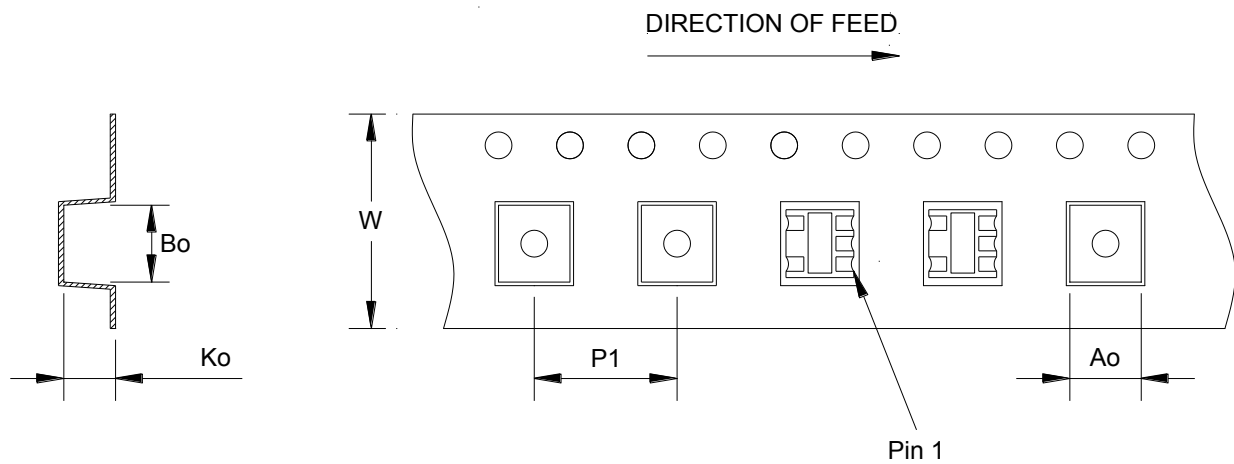
**Input Return Loss**



## 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

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