

## 1:1 Transmission Line Transformer 4.5 - 1200 MHz

Rev. V2

### Features

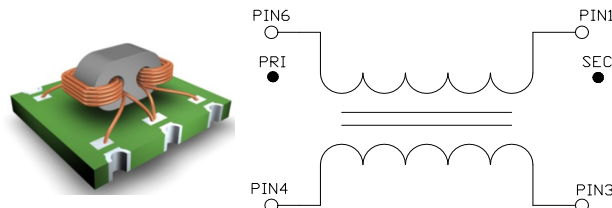
- 1:1 Impedance Ratio
- Surface Mount Package
- Excellent Temperature Stability
- Excellent Amplitude & Phase Balance
- Can Be Used In Both 50  $\Omega$  & 75  $\Omega$  Systems
- Available on Tape & Reel
- 260°C Reflow Compatible
- RoHS\* Compliant & Lead Free

### Description

The MABA-010314-CT1370 is a 1:1 RF transmission line transformer in a surface mount package.

Ideally suited for broadband CATV applications.

### Schematic



### Pin Configuration

Pin #	Function
1	Secondary Dot
2,5	No Connection (ground)
3	Secondary
4	Primary
6	Primary Dot

### Electrical Specifications: $T_A = 25^\circ\text{C}$ , $Z_0 = 75 \Omega$ , $P_{IN} = 0 \text{ dBm}$

Parameter	Frequency (MHz)	Units	Min.	Typ.	Max.
Insertion Loss 1 (Pin 6 to Pin 1)	4.5 - 870	dB	—	0.50	1.0
	870 - 1200			1.20	2.0
Insertion Loss 2 (Pin 6 to Pin 3)	4.5 - 870	dB	—	0.60	1.0
	870 - 1200			0.70	1.4
Amplitude Balance (Nominal 0 dB)	4.5 - 50	dB	—	$\pm 0.9$	$\pm 1.3$
	50 - 1000			$\pm 0.4$	$\pm 1.0$
	1000 - 1200			$\pm 0.7$	$\pm 1.1$
Phase Balance (Nominal 180°)	4.5 - 50	°	—	$\pm 5$	$\pm 15$
	50 - 1200			$\pm 6$	$\pm 10$
Input Return Loss (Pin 6)	4.5 - 350	dB	20	28	—
	350 - 1000		16	23	
	1000 - 1200		13	19	

### Ordering Information

Part number	Description
MABA-010314-CT1370	900 piece reel
MABA-010314-CT13TB	customer evaluation board

### Recommended Maximum Ratings

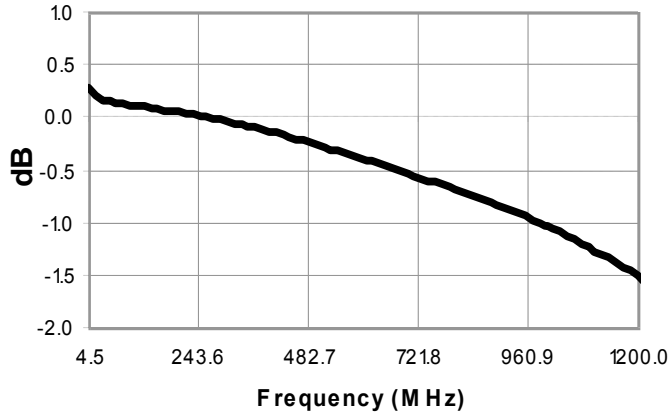
Parameter	Value
Input Power	250 mW
DC Current, (tested @ 5 V)	200 mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +125°C

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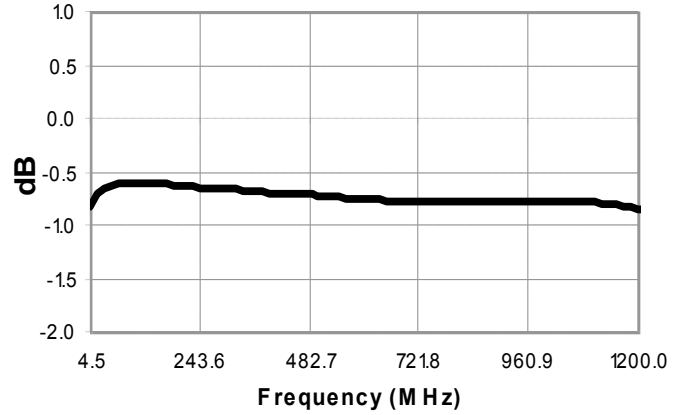
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Typical Performance Curves:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75 \Omega$ ,  $P_{IN} = 0 \text{ dBm}$

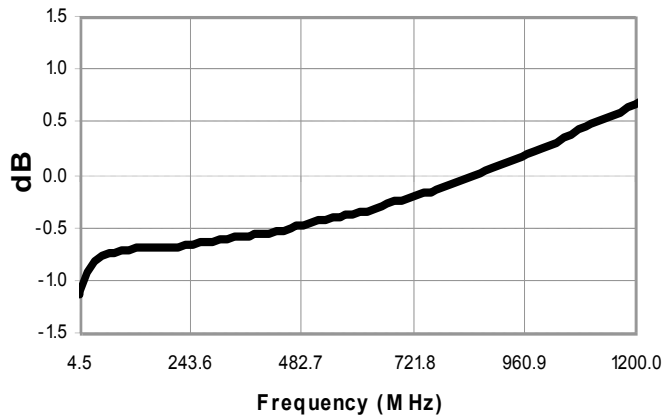
**Insertion Loss 1: (Pin 6 to 1)**



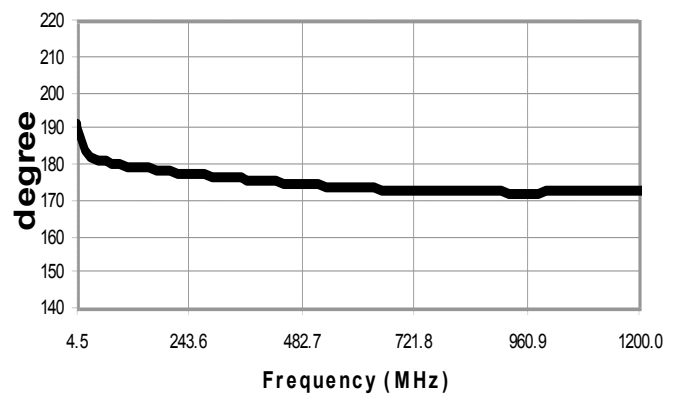
**Insertion Loss 2: (Pin 6 to 3)**



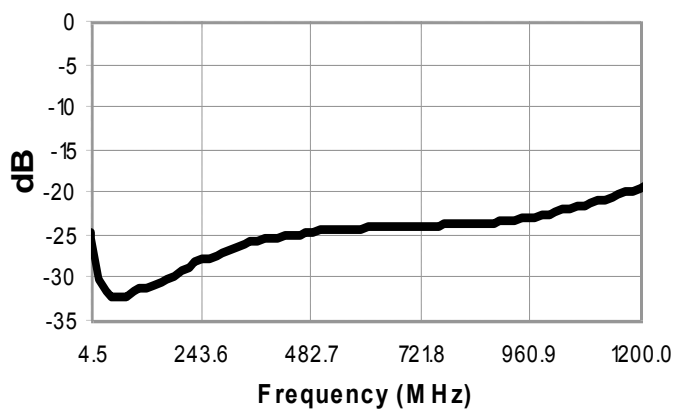
**Amplitude Balance**



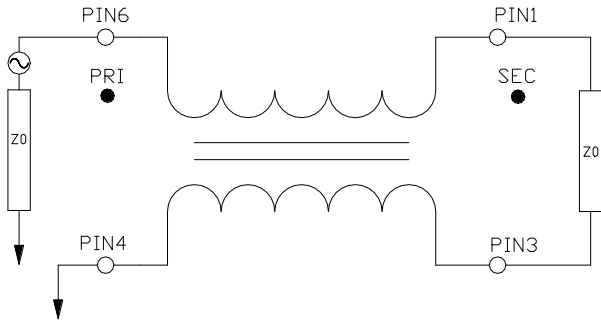
**Phase Balance**



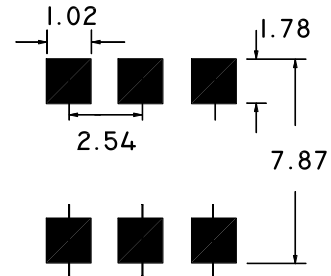
**Return Loss: Input (Pin 6)**



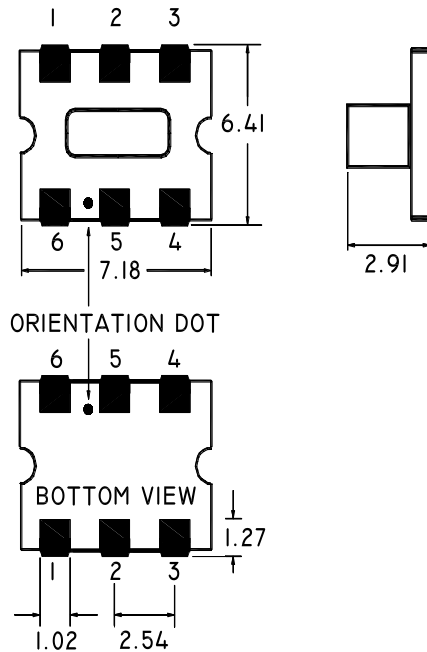
## Application Circuit



## Recommended Footprint



## Outline Drawing (SM-55)



## Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	900
Reel Size	mm	330
Tape Width	mm	16
Pitch	mm	12
Ao	mm	6.7
Bo	mm	7.4
Ko	mm	3.1
Orientation	-	F-15
Reference Application Note ANI-019 for orientation		

Dimensions in mm.  
 Tolerance:  $\pm 0.2$  mm unless otherwise noted.  
 Model number and lot code printed on reel.  
 Finish: Electroless nickel immersion gold

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