

## 1.33:1 Transmission Line Balun Transformer 5 - 1000 MHz

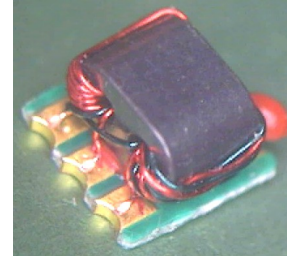
Rev. V2

### Features

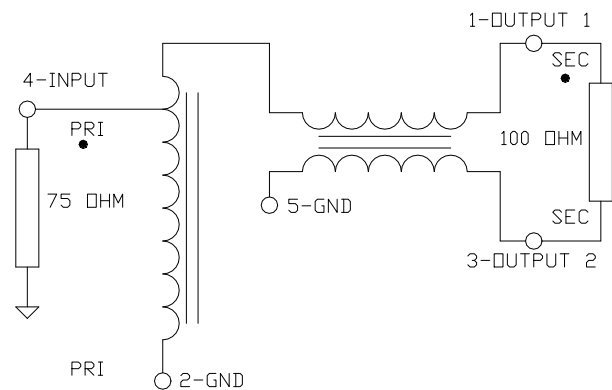
- Surface Mount
- 1.33:1 Impedance
- 75  $\Omega$  single ended to 100  $\Omega$  Balance
- RoHS Compliant and Pb Free
- Available on Tape and Reel

### Description

MABA-009092-CT1A40 is a 1.33:1 RF Transmission Line Transformer in a low cost surface mount package. Ideally suited for high volume CATV/ Broadband applications.



### Functional Schematic



### Ordering Information<sup>1,2</sup>

Part Number	Package
MABA-009092-CT1A40	2000
MABA-009092-CT1ATB	Customer Test Board

### Pin Configuration<sup>3</sup>

Pin No.	Function
1	Secondary Dot (output 1)
2	Primary (ground)
3	Secondary (output 2)
4	Primary Dot (Input)
5	(ground)

## 1.33:1 Transmission Line Balun Transformer 5 - 1000 MHz

Rev. V2

Electrical Specifications: Freq. = 5 - 1000 MHz,  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75 \Omega$

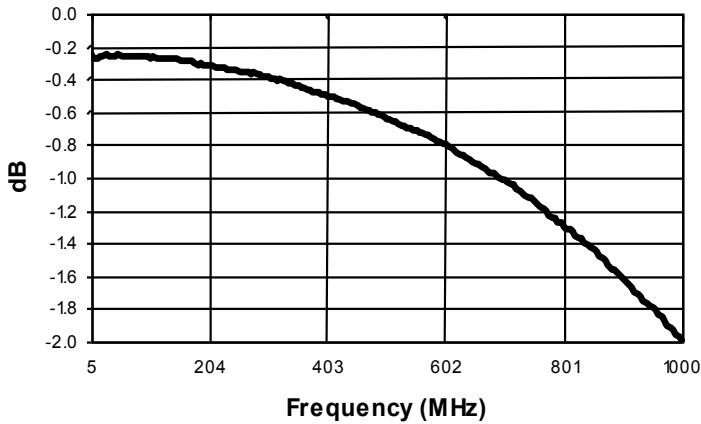
Parameter	Test Conditions	Units	Min.	Typ.	Max.
Insertion Loss 1 (Pin 4 to Pin 1)	5 - 50 MHz	dB	—	0.3	0.4
	50 - 870 MHz			0.6	1.8
	870 - 1000 MHz			1.75	2.4
Insertion Loss 2 (Pin 4 to Pin 3)	5 - 50 MHz	dB	—	0.94	1.4
	50 - 870 MHz			0.7	1.2
	870 - 1000 MHz			1.0	1.5
Amplitude Balance	5 - 50 MHz	dB	—	0.7	$\pm 1.3$
	50 - 870 MHz			0.13	$\pm 1.0$
	870 - 1000 MHz			0.74	$\pm 1.4$
Phase Balance	5 - 50 MHz	°	—	4	$\pm 16$
	50 - 1000 MHz			5	$\pm 9$
Input Return Loss (Pin 4)	5 - 50 MHz	dB	13	23	—
	50 - 400 MHz		17	27	
	400 - 870 MHz		9	17	
	870 - 1000 MHz		8	12	

### Absolute Maximum Ratings

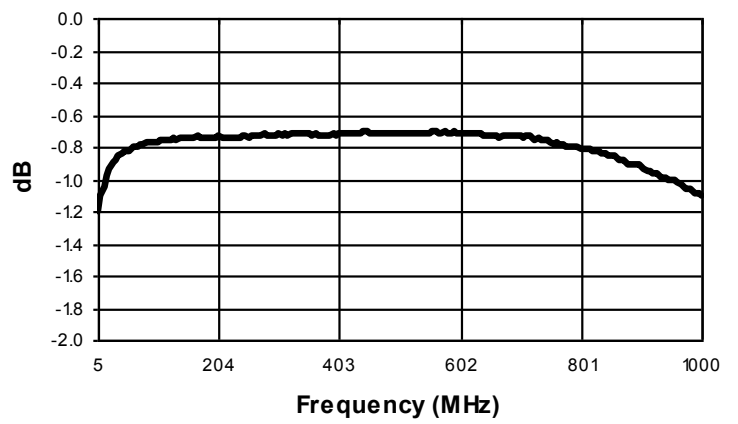
Parameter	Absolute Maximum
RF Power	250 mW
DC Current	30 mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C

## Typical Performance Curves

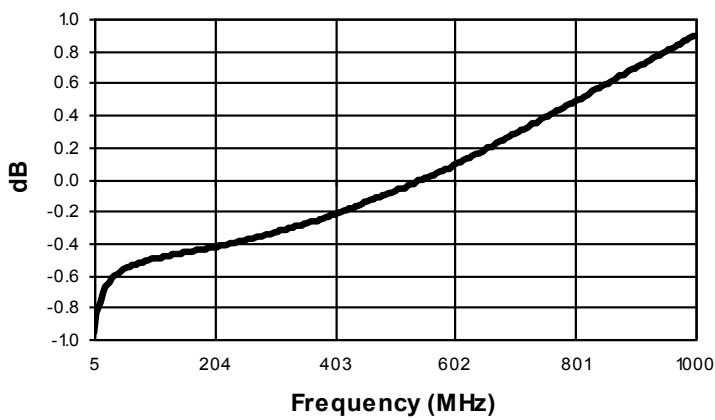
**Insertion Loss 1 (Pin4 - Pin1)**



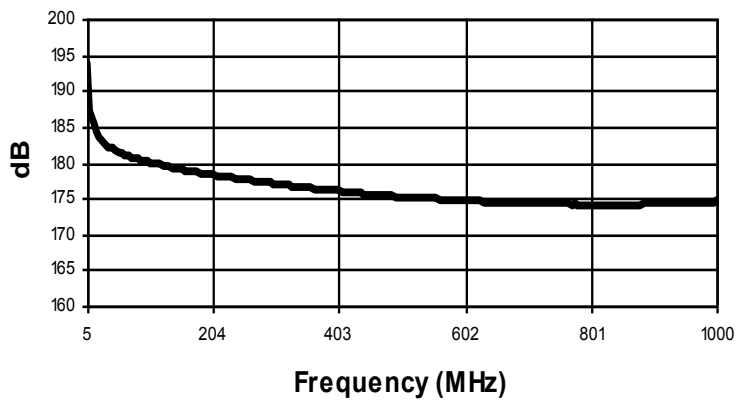
**Insertion Loss 2 (Pin4 - Pin3)**



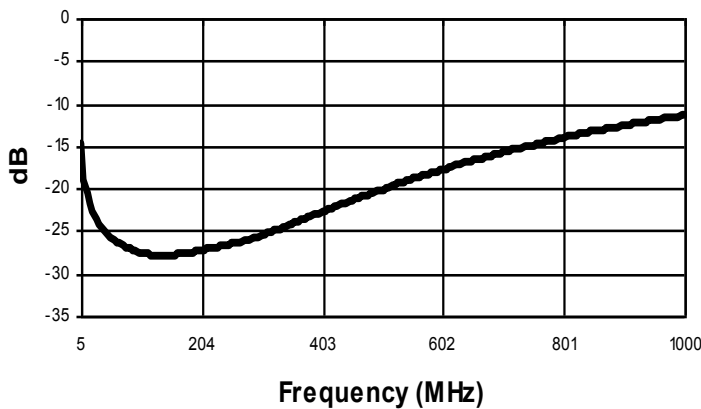
**Amplitude Balance**



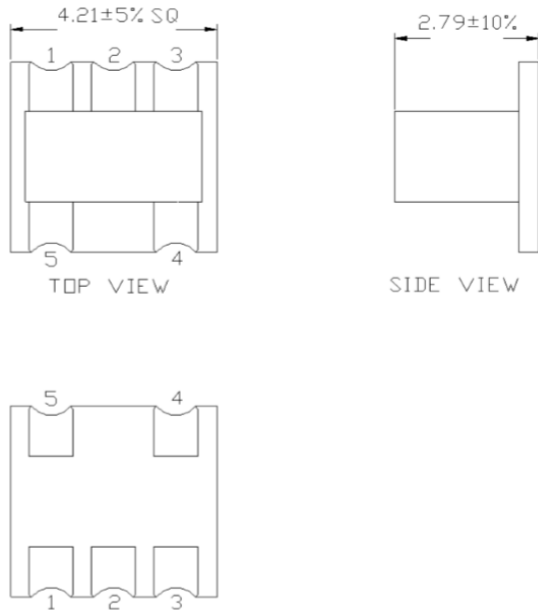
**Phase Balance**



**Return Loss: Input (Pin4)**

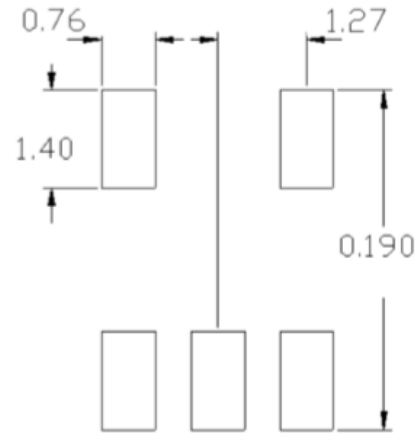


## Outline Drawing



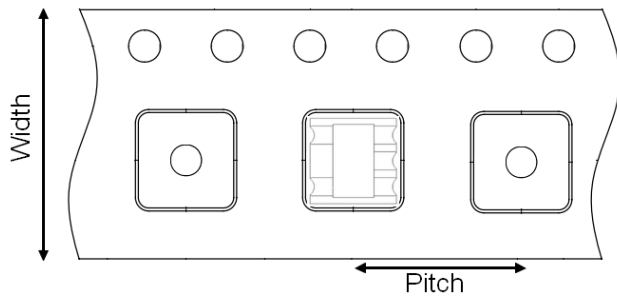
1. Dimensions in mm.
2. Tolerance:  $\pm 0.2\text{mm}$  unless otherwise noted.
3. Model number and lot code printed on reel.
4. Plating finish: ENIG on both sides, 0.05 to 0.1  $\mu\text{m}$  gold over 3 to 6  $\mu\text{m}$  nickel

## PCB Layout



Dimensions are millimetres  $\pm 0.38$  unless otherwise specified.

## Carrier Tape Orientation



## Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	2000
Reel Size	mm	330
Tape Width	mm	12.00
Pitch	mm	8.00
Orientation	-	F31
Reference Application Note ANI-019 for orientation		

MACOM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with MACOM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.