

## 1:3 Transformer 5 - 1200 MHz

V2

### Features

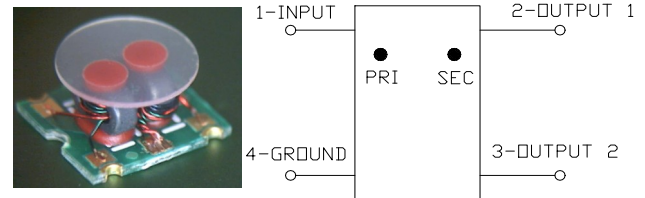
- Surface Mount
- 1:3 Impedance
- Available on Tape and Reel
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible
- Excellent Temperature Stability
- Can be used on 50 Ω & 75 Ω Systems

### Description

The MABA-010441-CT38A0 is a 1:3 transformer assembled in a surface mount package.

Ideally suited for CATV Broadband.

### Functional Schematic



### Pin Configuration

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

### Electrical Specifications: Freq. = 5 - 1200 MHz, T<sub>A</sub> = 25°C, Z<sub>0</sub> = 75 Ω, P<sub>in</sub> = 0 dBm

Parameter	Conditions	Units	Min.	Typ.	Max.
Impedance Ratio	—	—	—	1:3	—
Insertion Loss 1 (Pin 1 - Pin 2)	5 - 50 MHz	dB	—	0.75	1.20
	50 - 1000 MHz			1.10	1.90
	1000 - 1200 MHz			1.75	2.25
Insertion Loss 2 (Pin 1 - Pin 3)	5 - 50 MHz	dB	—	0.70	1.30
	50 - 1000 MHz			1.10	2.20
	1000 - 1200 MHz			1.75	2.50
Amplitude Unbalance	5 - 50 MHz	dB	—	0.02	±0.70
	50 - 1000 MHz			0.05	±0.70
	1000 - 1200 MHz			0.15	±0.80
Phase Balance	5 - 50 MHz	degrees	—	0.6	±5
	50 - 1200 MHz			6.6	±10
Input Return Loss	5 - 50 MHz	dB	19	21	—
	50 - 1000 MHz		15	21	
	1000 - 1200 MHz		15	24	

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

Part Number	Description
MABA-010441-CT38A0	900 piece reel
MABA-010441-CT38A0-TB	sample board

1. All sample boards include 5 loose parts.

### Absolute Maximum Ratings

Parameter	Absolute Maximum
Input Power	250 mW
DC Current	200 mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +125°C

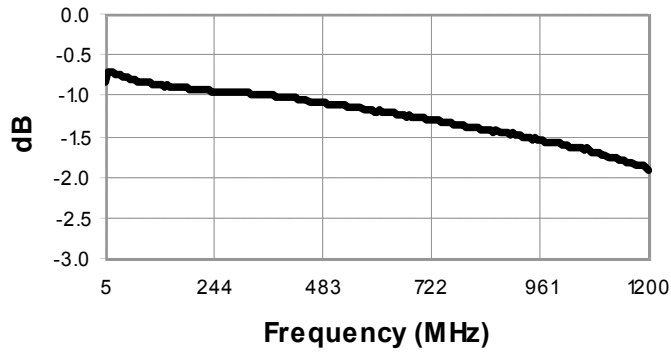
MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

**1:3 Transformer**  
**5 - 1200 MHz**

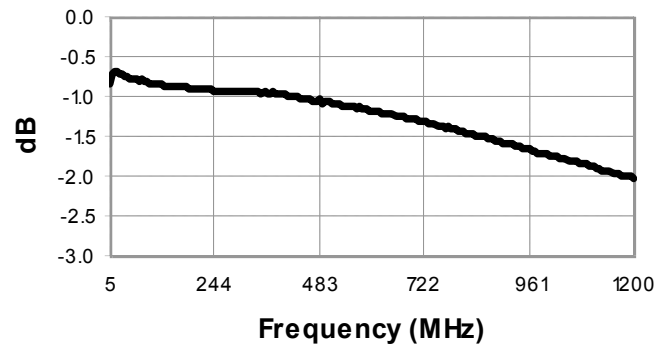
V2

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

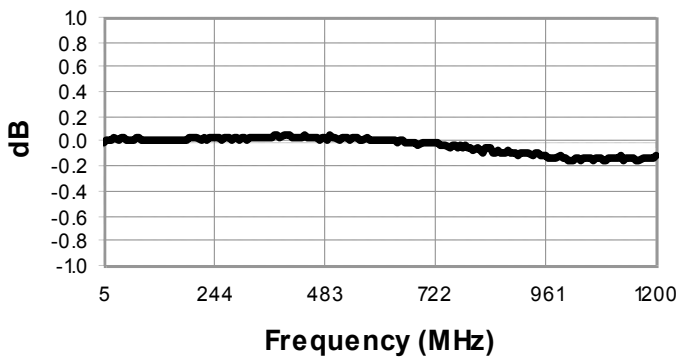
**Insertion Loss: Pin1—Pin2**



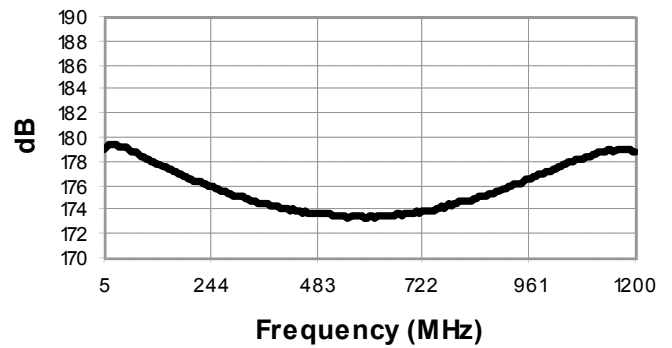
**Insertion Loss: Pin1—Pin3**



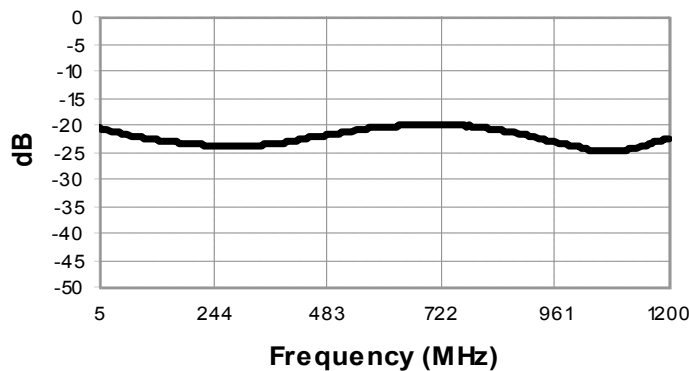
**Amplitude Balance**



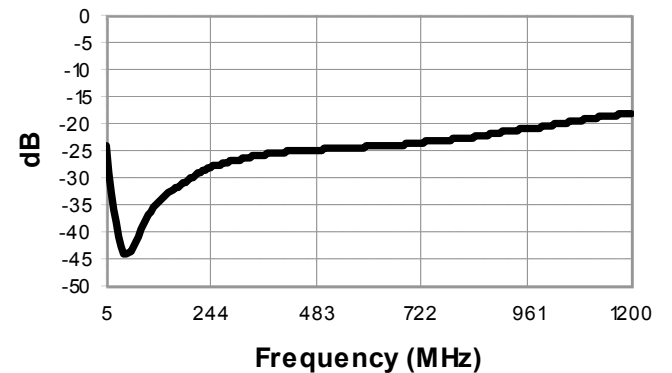
**Phase Balance**



**Return Loss: Input**



**Return Loss: Output**



2 Full temperature plots available on request

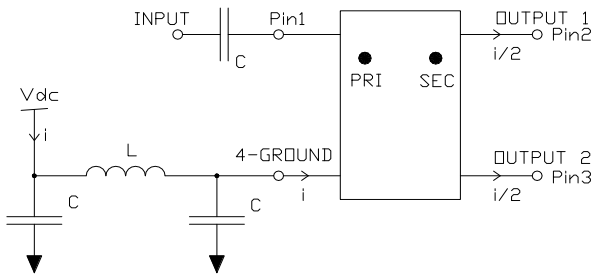
MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

For further information and support please visit:  
<https://www.macom.com/support>

## 1:3 Transformer 5 - 1200 MHz

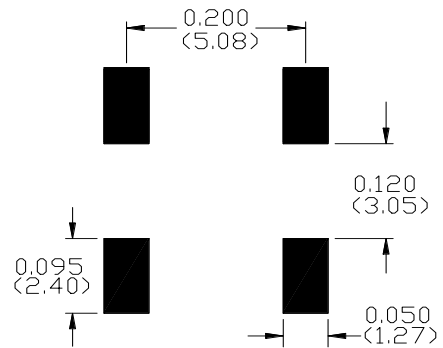
V2

### Recommended DC Bias Circuit

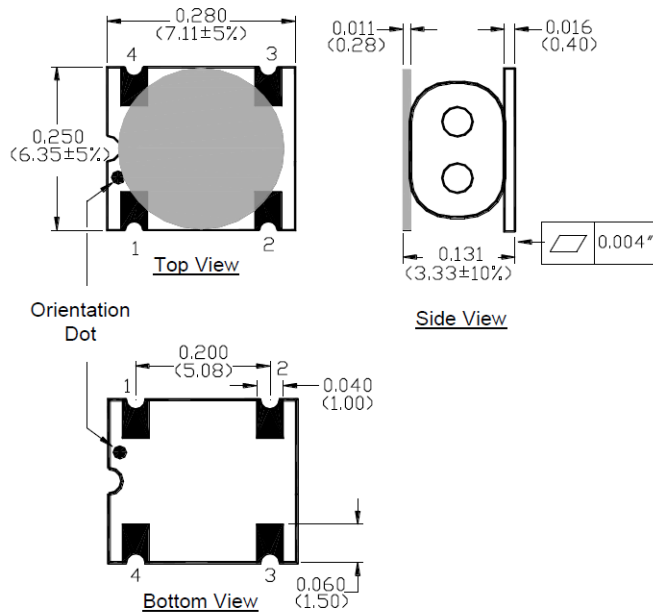


Cap/Ind	5 - 50 MHz	50 - 1200 MHz
C	100 nF	10 nF
L	10 $\mu$ H	1 $\mu$ H

### Recommended Board Layout



### Outline Drawing



### Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	900
Reel size	mm	330
Tape width	mm	16.00
Pitch	mm	12.00
A <sub>0</sub>	mm	6.70
B <sub>0</sub>	mm	7.50
K <sub>0</sub>	mm	3.60
Orientation	-	F27

Dimensions in mm.  
Tolerance:  $\pm 0.2$  mm unless otherwise noted.  
Model number and lot code are printed on the reel.  
Finish: ENIG

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.