

1:4 Transmission Line Balun Transformer 5 - 1200 MHz

Rev. V5

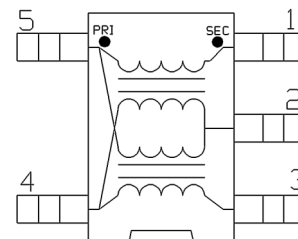
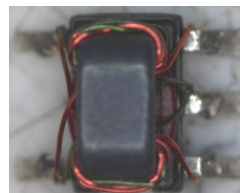
Features

- 1:4 Impedance Ratio
- Surface Mount Package
- Excellent Temperature Stability
- Excellent Amplitude & Phase Balance
- Can be used in both 50 Ω & 75 Ω Systems
- 260°C Reflow Compatible
- RoHS* Compliant & Lead Free
- Available on Tape & Reel

Description

The MABA-010129-CT4A40 is a 1:4 RF transmission line transformer in a surface mount package. Ideally suited for broadband CATV applications.

Schematic



Pin Configuration

Pin #	Function
1	Secondary Dot
2	Secondary Centre Tap
3	Secondary
4	Primary
5	Primary Dot

Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 50 \Omega$, $P_{IN} = 0 \text{ dBm}$

Parameter	Frequency Test Condition (MHz)	Units	Min.	Typ.	Max.
Insertion Loss 1 (Pin 4 to Pin 1)	5 - 50	dB	—	0.5	0.7
	50 - 879			0.7	1.5
	879 - 1200			1.2	2.0
Insertion Loss 2 (Pin 4 to Pin 3)	5 - 50	dB	—	0.5	0.7
	50 - 879			0.6	1.2
	879 - 1200			0.8	1.6
Amplitude Balance (Nominal 0 dB)	5 - 500	dB	—	0.05	± 0.6
	500 - 1200			0.23	± 2.1
Phase Balance (Nominal 180°)	5 - 500	°	—	1.4	± 6
	500 - 1000			2.8	± 8
	1000 - 1200			0.2	± 22
Input Return Loss (Pin 4)	5 - 50	dB	20	25	—
	50 - 500		15	23	
	500 - 1200		11	16	

Ordering Information^{1,2}

Part #	Description
MABA-010129-CT4A40	2000 piece reel
MABA-010129-CT4ATB	Customer test board

1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

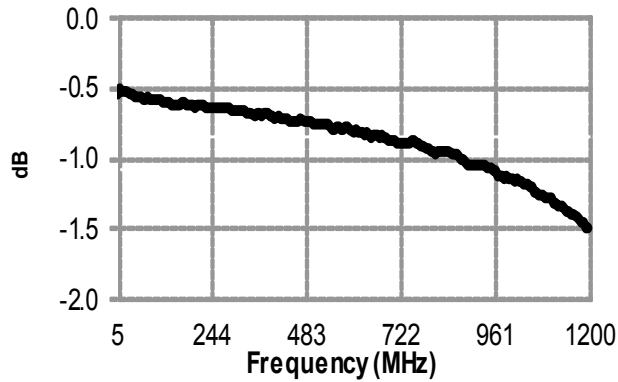
Recommended Maximum Ratings³

Parameter	Value
Input power	>28 dBm (631 mW)
DC Current, (tested @ 5 V)	>600 mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C

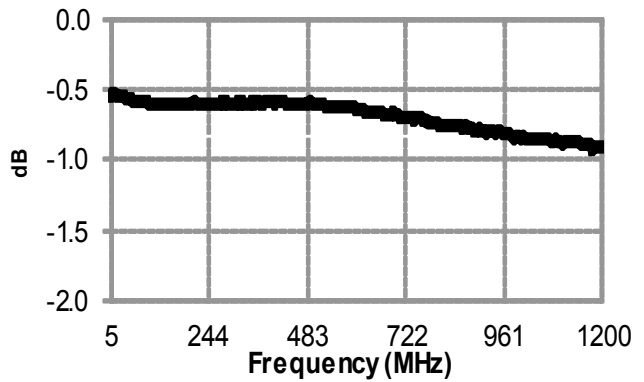
3. Exceeding any one or combination of these limits may cause permanent damage to this device.

Typical Performance Curves: $T_A = 25^\circ\text{C}$, $Z_0 = 50 \Omega$, $P_{IN} = 0 \text{ dBm}^4$

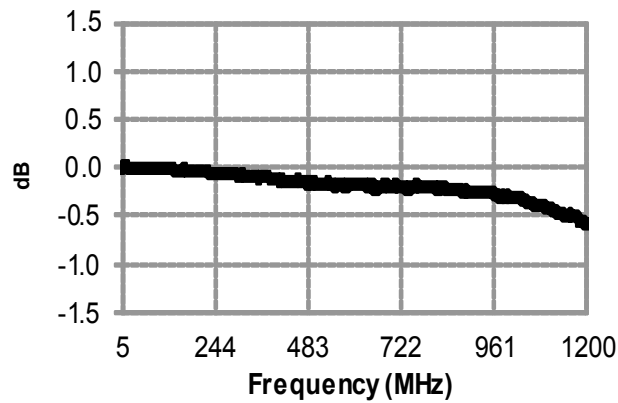
Insertion Loss 1: (Pin 4 to 1)



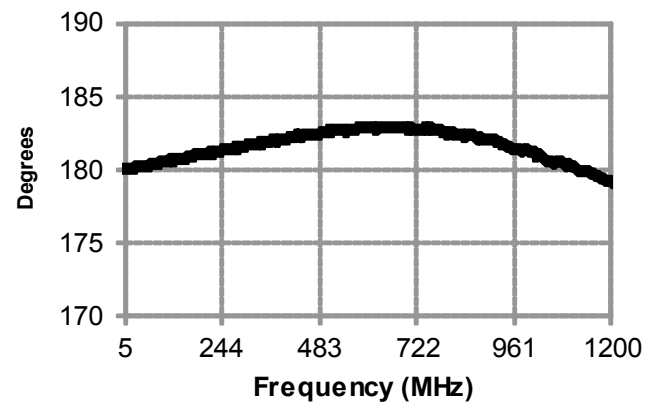
Insertion Loss 2: (Pin 4 to 3)



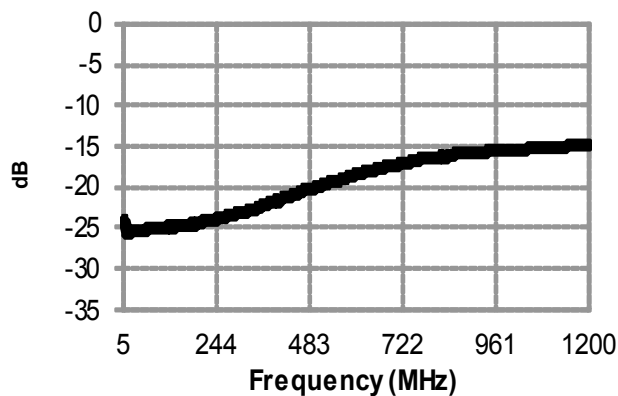
Amplitude Balance



Phase Balance



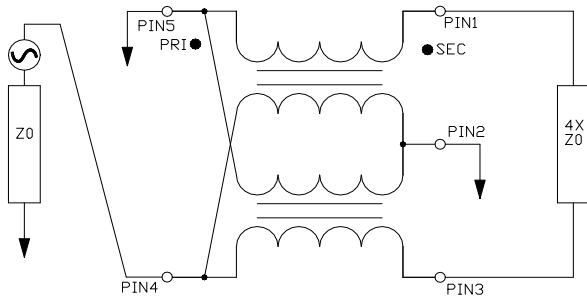
Return Loss: Input (Pin 4)



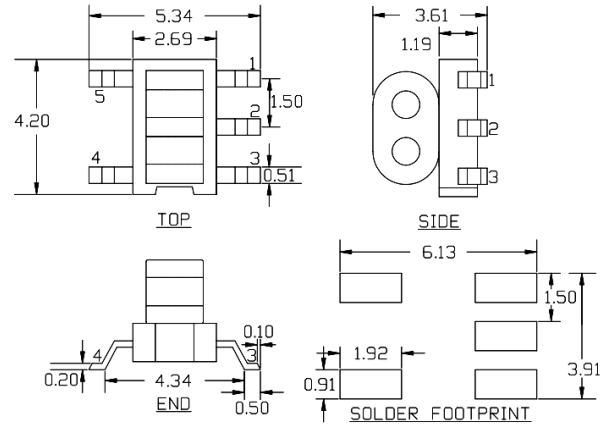
2 4. Temperature plots available on request.

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 for additional data sheets and product information.

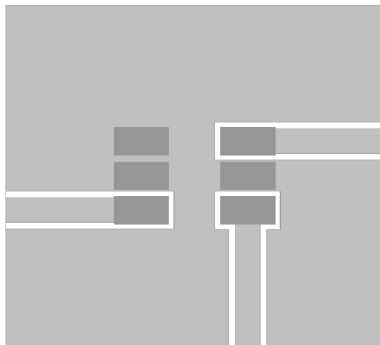
Application Circuit



Outline Drawing^{6,7,8,9}



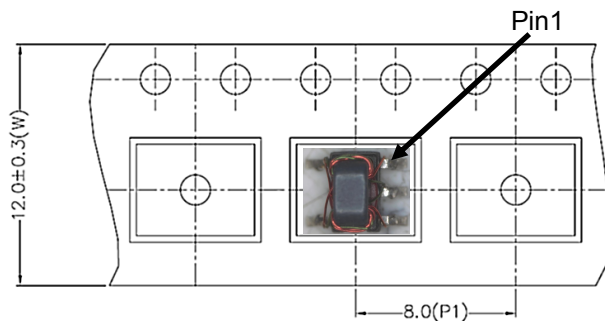
Recommended Board Layout⁵



5. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

- 6. Dimensions in mm
- 7. Tolerance: ± 0.2 mm unless otherwise noted.
- 8. Model number and lot code are printed on the reel.
- 9. Finish: Pin material CuSn6.

Reel Orientation



Tape & Reel Information

Item	Dimension
W	12.0 mm, +/-0.3 mm
P1	8.0 mm, +/-0.1 mm

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.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Audio Transformers](#) / [Signal Transformers](#) category:

Click to view products by [MACOM](#) manufacturer:

Other Similar products are found below :

[CX2041NLT](#) [MGPWT-00449-P](#) [PE-64961](#) [H1302FNLT](#) [H5008FNL](#) [H5012FNL](#) [H5020FNLT](#) [H5077NLT](#) [H5084FNLT](#)
[B78476A9558A003](#) [1812WBT2-4](#) [1879479-1](#) [HX2260FNL](#) [HX5014FNL](#) [EX2024FNL](#) [FL1066](#) [T1137NLT](#) [T3012NL](#) [PE-65812FNL](#) [PE-65848FNLT](#) [H1174FNL](#) [H1302FNL](#) [H5015FNL](#) [H5019EFNL](#) [H5062FNLT](#) [CX2047LNL](#) [MGPWT-00059-P](#) [MGPWT-00266-P](#) [MGPWT-00278-P](#) [MGPWT-00431-P](#) [TTC-100](#) [TTC-143-H](#) [TTC-5032-1](#) [BX1194WNLT](#) [HX1234NLT](#) [HX5008FNLT](#) [HX5019FNL](#) [HX5084NL](#) [3-1879385-5](#) [TX1263NLT](#) [4-1879391-0](#) [T1142NL](#) [HX6101FNL](#) [HX5084FNL](#) [HX1148NL](#) [HX5020FNLT](#) [HX5014FNLT](#) [T1124NL](#)
[1879732-1](#) [2-1879391-5](#)