

Transformer, 1:2 Transmission Line Balun 5 - 1200 MHz

Rev. V5

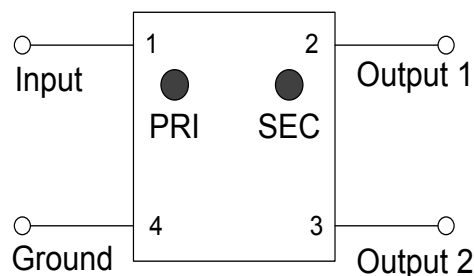
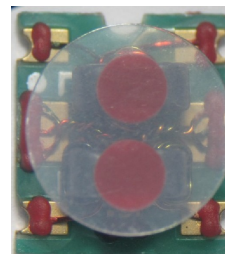
Features

- 1:2 Impedance Ratio
- Transmission Line Transformer
- Surface Mount
- Available on Tape and Reel
- 260°C Reflow Compatible
- RoHS Compliant and Pb Free
- Excellent Temperature Stability
- Can be used on 50 Ω and 75 Ω systems

Description

The MABA-007681-CT2010 is a 1:2 RF transmission line transformer in a low cost surface mount package. Ideally suited for high volume CATV/ Broadband application.

Schematic



Ordering Information

Part Number	Description
MABA-007681-CT2010	Tape & Reel
MABA-007681-CT20TB	Customer Evaluation Board

Pin Configuration

Pin No.	Function
1	Input (PRI dot)
2	Output 1 (SEC dot)
3	Output 2 (SEC)
4	Ground (PRI)

Electrical Specifications: Freq. = 5 - 12 MHz, $T_A = 25^\circ\text{C}$, $P_{IN} = 0 \text{ dBm}$, $Z_0 = 75 \Omega$

Parameter	Conditions	Units	Min.	Typ.	Max.
Impedance Ratio	—	Ratio	—	1:2	—
Insertion Loss 1 (pin 1 to pin 2)	5 - 50 MHz 50 - 1000 MHz 1000 - 1200 MHz	dB	—	0.35 0.60 0.60	0.50 1.10 1.40
Insertion Loss 2 (pin 1 to pin 3)	5 - 50 MHz 50 - 1000 MHz 1000 - 1200 MHz	dB	—	0.5 0.9 1.8	0.70 1.50 2.20
Amplitude Balance	5 - 50 MHz 50 - 1000 MHz 1000 - 1200 MHz	dB	—	± 0.10 ± 0.30 ± 0.60	± 0.40 ± 1.50 ± 1.80
Phase Balance	5 - 50 MHz 50 - 1200 MHz	$^\circ$	—	± 0.2 ± 3.0	± 1.50 ± 7.00
Input Return Loss (pin 1)	5 - 50 MHz 50 - 1000 MHz 1000 - 1200 MHz	dB	22 14 8	25 22 17	—

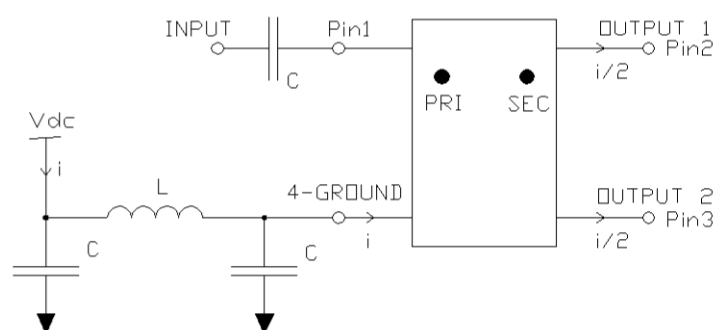
Transformer, 1:2 Transmission Line Balun 5 - 1200 MHz

Rev. V5

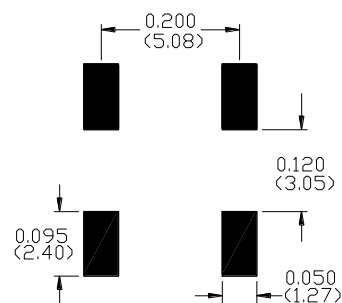
Absolute Maximum Ratings

Parameter	Units
Input Power	250 mW
DC Current	600 mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +125°C

Recommended DC Bias Circuit



Recommended Footprint



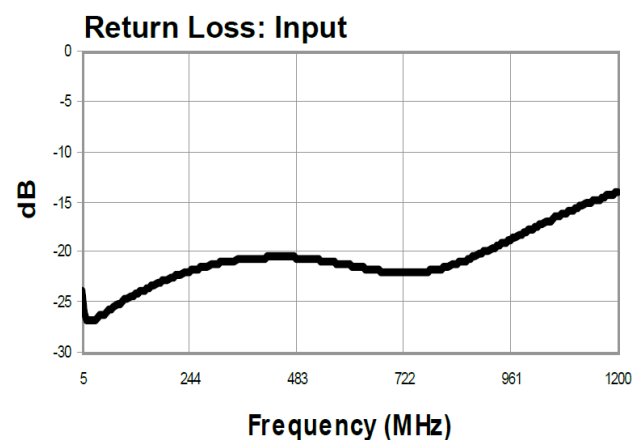
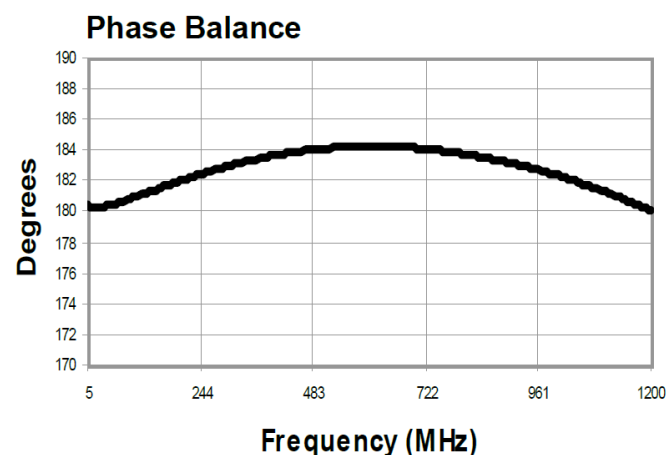
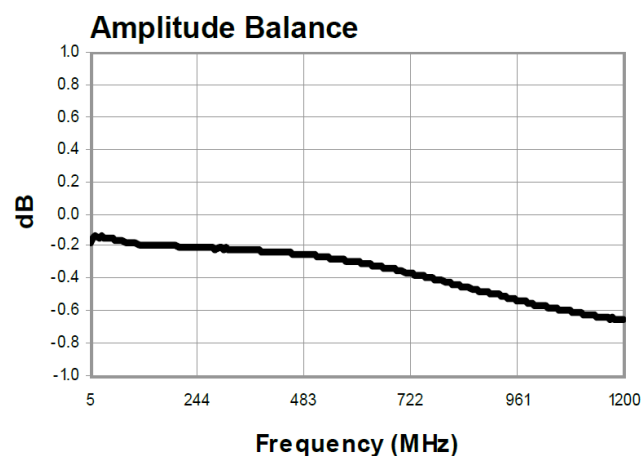
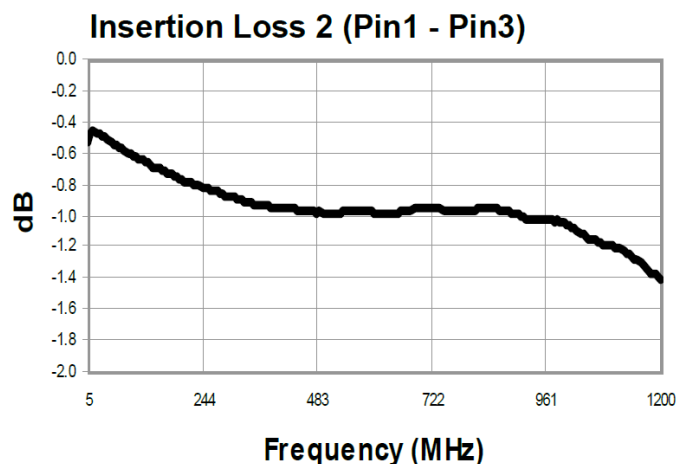
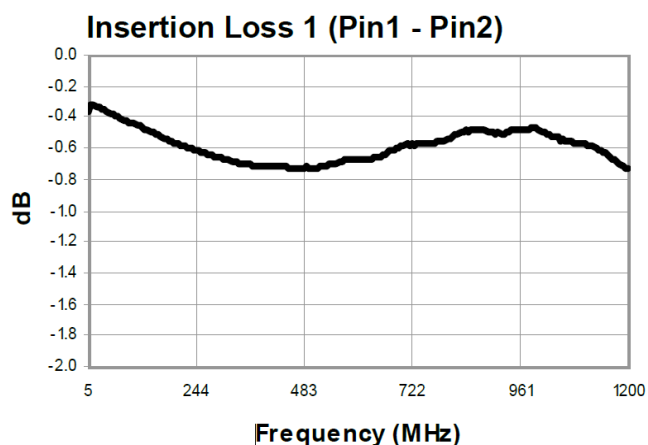
Parts List

Designator	5 - 50 MHz	50 - 1200 MHz
C = capacitor	100 nF	10 nF
L = inductor	10 μ H	1 μ H

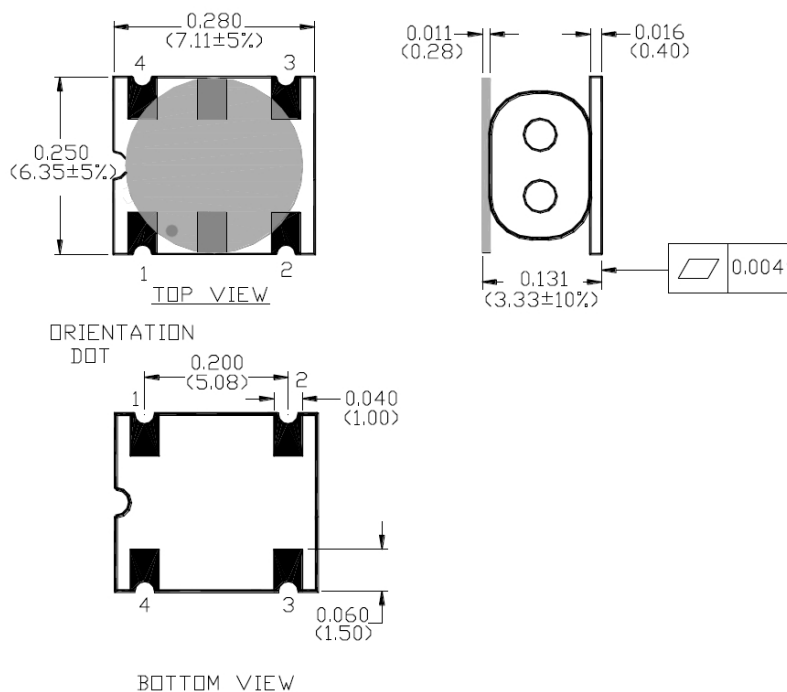
Transformer, 1:2 Transmission Line Balun 5 - 1200 MHz

Rev. V5

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



Outline Drawing



1. Dimensions in mm.
2. Tolerance: ± 0.2 mm unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Plating finish: ENIG on both sides, 0.05 to 0.1 μ m gold over 3 to 6 μ m nickel.

Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	900
Reel Size	mm	330
Tape Width	mm	16.00
Pitch	mm	12.00
Ao	mm	6.70
Bo	mm	7.50
Ko	mm	3.60
Orientation	-	F33
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.