

1:1 Transmission Line with Tap Transformer 50 - 1200 MHz

Rev. V6

Features

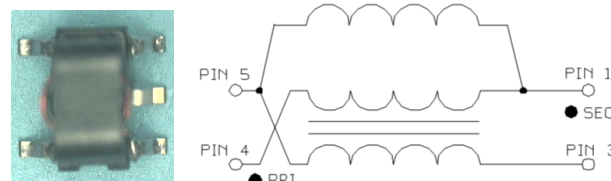
- Surface Mount
- 1:1 Impedance Ratio
- Available on Tape & Reel
- RoHS* Compliant
- 260°C Reflow Compatible

Description

The MABAES0029 is a 1:1 transmission line transformer with tap in a low cost surface mount package.

Ideally suited for CATV Broadband applications.

Functional Schematic



Pin Configuration

Pin #	Function
1	Output Thru Leg
2	No Connection
3	Output Coupled Leg
4	Input
5	Ground

Electrical Specifications: Freq. = 50 - 1200 MHz, $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{in} = 0 \text{ dBm}$

Parameter	Conditions	Units	Min.	Typ.	Max.
Impedance Ratio	—	ratio	—	1:1	—
Insertion Loss (Pin4 - Pin3)	50 - 600 MHz 600 - 1200 MHz	dB	—	0.8 1.2	1.0 1.5
Insertion Loss (Pin4 - Pin1)	50 - 600 MHz 600 - 1200 MHz	dB	—	0.8 1.2	1.0 1.5
Amplitude Balance	50 - 600 MHz 600 - 1200 MHz	dB	—	0.1 0.4	0.2 0.8
Phase Balance	50 - 600 MHz 600 - 1200 MHz	deg.	—	1.0 4.0	3.0 10.0

Ordering Information

Part Number	Description
MABAES0029	2000 piece reel

Absolute Maximum Ratings

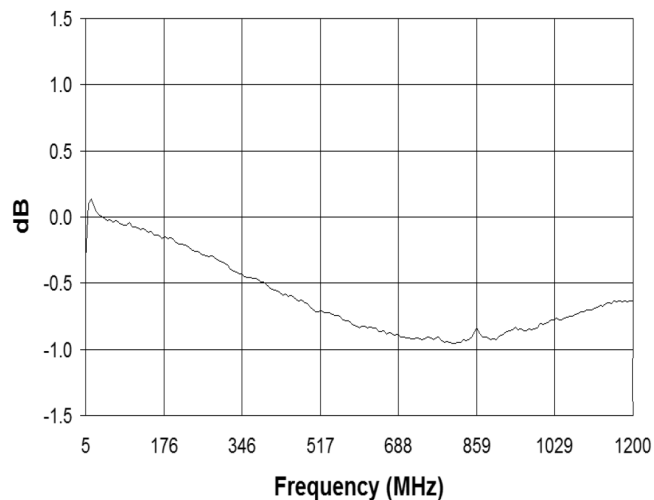
Parameter	Absolute Maximum
RF Input Power	0.5 W
DC Current	500 mA
Operating Temperature	-40°C to +85°C

1:1 Transmission Line with Tap Transformer 50 - 1200 MHz

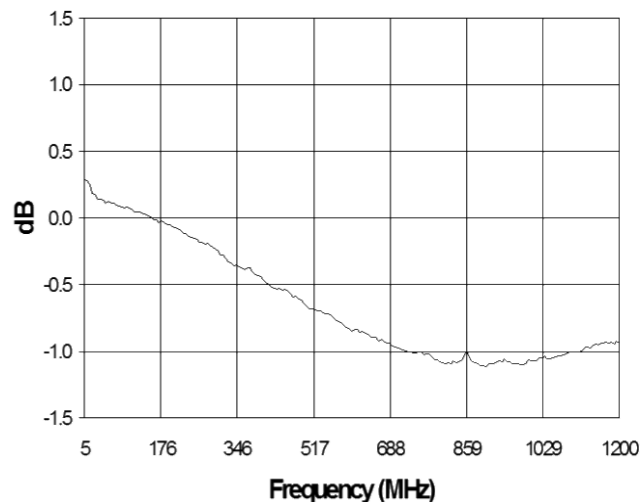
Rev. V6

Typical Performance Curves

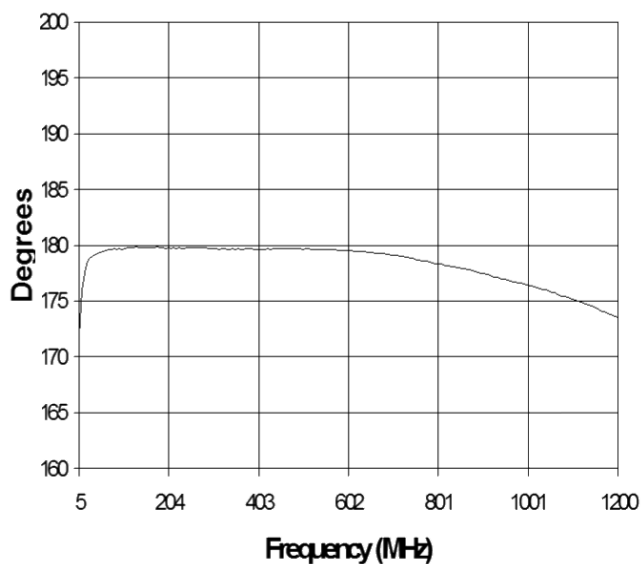
Insertion Loss (Pin 4-1)



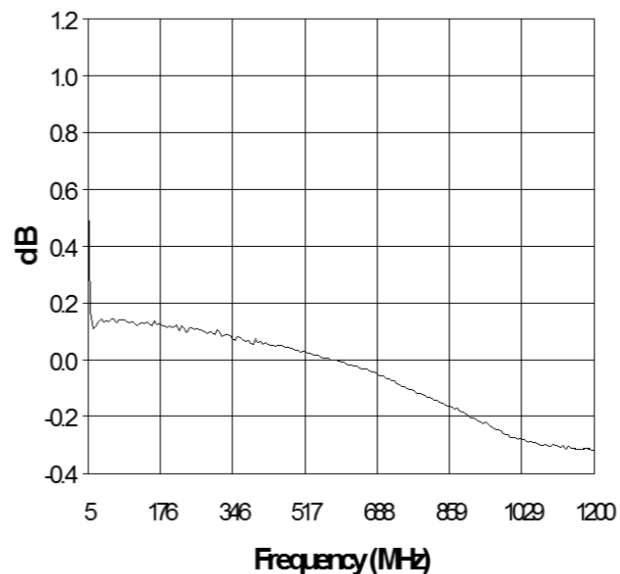
Insertion Loss (Pin 4-3)



Phase Balance



Amplitude Balance

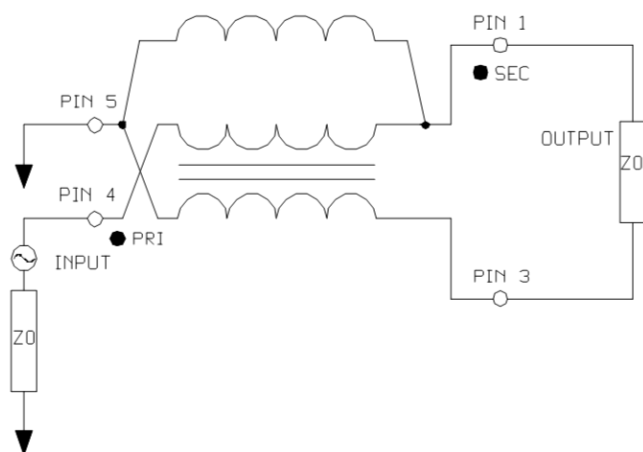


Electrical Specifications: $Z_0 = 75\Omega$, $T_A = 25^\circ\text{C}$, $P_{in} = 0\text{dBm}$

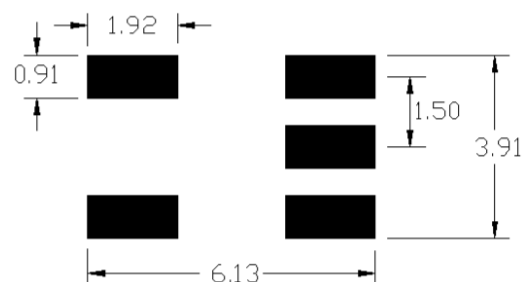
1:1 Transmission Line with Tap Transformer 50 - 1200 MHz

Rev. V6

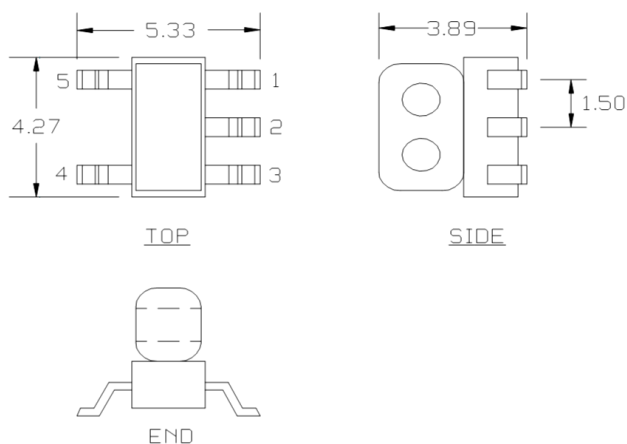
Application Circuit



PCB Layout



Lead-Free Outline Drawing



Dimensions in mm.
Tolerance: ± 0.2 mm unless otherwise noted.
Model number and lot code are printed on the reel.
Lead plating: SAC-305.

Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	2000
Reel size	mm	330
Tape width (W)	mm	16.00
Pitch (P ₁)	mm	8.00
A ₀	mm	5.8
B ₀	mm	7.0
K ₀	mm	5.0
Orientation	-	F26
Reference Application note ANI-019 for orientation		

1:1 Transmission Line with Tap Transformer 50 - 1200 MHz

Rev. V6

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.