

1:1 Transmission Line Transformer, with center tap 5 – 1218 MHz

Rev. V3

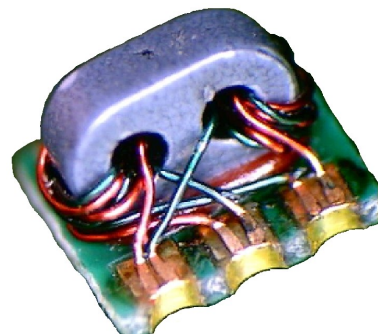
Features

- 1:1 impedance
- Surface mount
- Center tap on secondary
- Available on tape and reel
- 260° reflow compatible
- RoHS compliant and Pb free
-

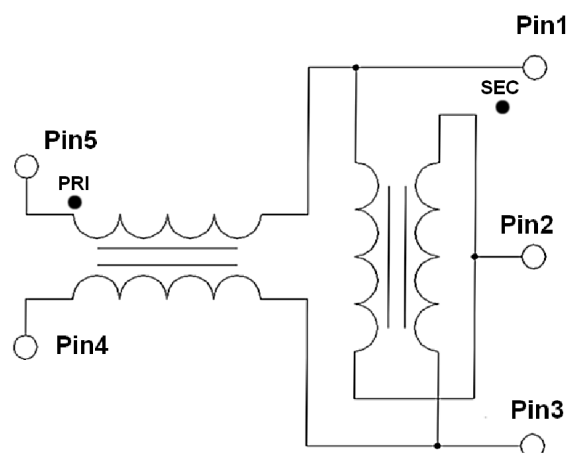
Description

MABACT0040 is a 1:1 transmission line transformer in a low cost surface mount package. Excellent return loss.

Ideally suited for high volume CATV Broadband applications.



Functional Schematic



Ordering Information

Part Number	Package
MABACT0040	Tape & Reel
MABACT0040-TB	Customer Test Board

Pin Configuration

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

* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

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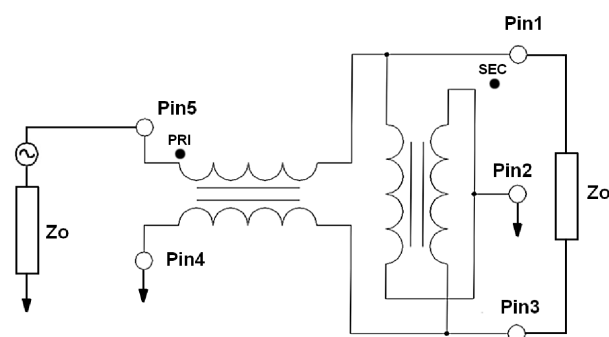
Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 75\ \Omega$, $P_{in} = 0\ \text{dBm}$

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Frequency Range	—	MHz	5	—	1218
Impedance	—	Ω	—	75	—
Impedance Ratio	—	Ratio	—	1:1	—
Insertion Loss 1 (Pin5 - Pin1)	5 - 1218 MHz	dB	—	1.0	1.6
Insertion Loss 2 (Pin5 - Pin3)	5 - 1218 MHz	dB	—	1.1	1.6
Amplitude Balance	5 - 1000 MHz 1000 - 1218 MHz	dB dB	—	0.1 0.07	± 0.5 ± 0.7
Phase Balance (ref value 180°)	5 - 1218 MHz	$^\circ$	—	2.5	± 10
Input Return Loss (Pin5)	5 - 1218 MHz	dB	16	22	—

Recommended Maximum Ratings

Parameter	Maximum Rating
Input Power	500 mW
DC Current	500 mA
Operating Temperature	-40°C to $+105^\circ\text{C}$

Application Schematic

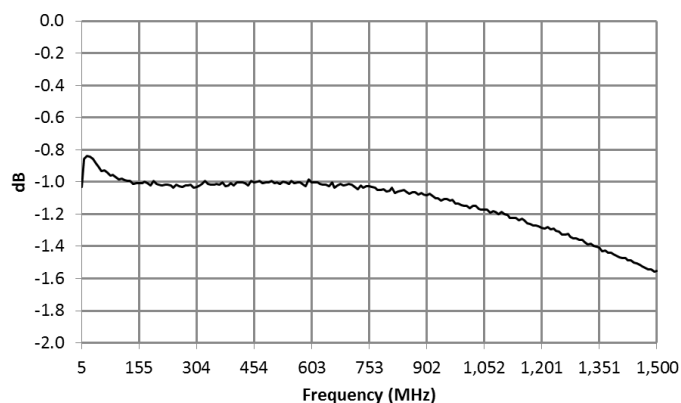


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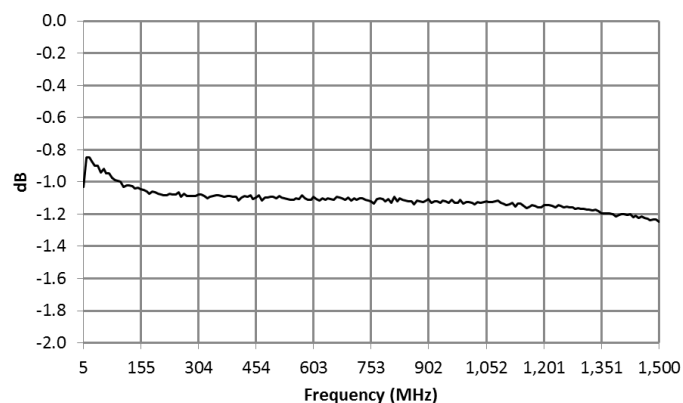
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Typical Performance Curves: $T_A = 25^\circ\text{C}$, $Z_0 = 75\ \Omega$, $P_{in} = 0\ \text{dBm}$

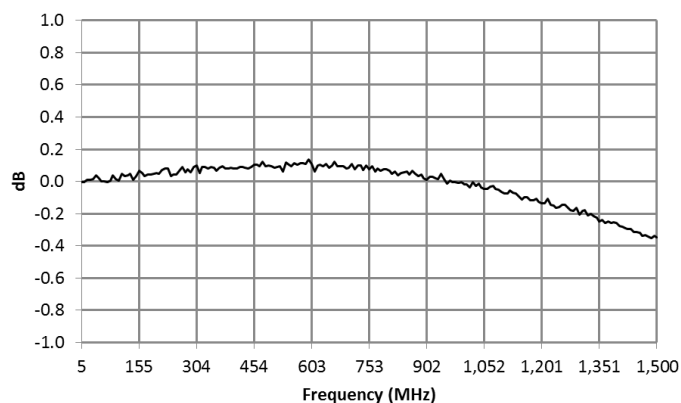
Insertion Loss 1 (pin5-1)



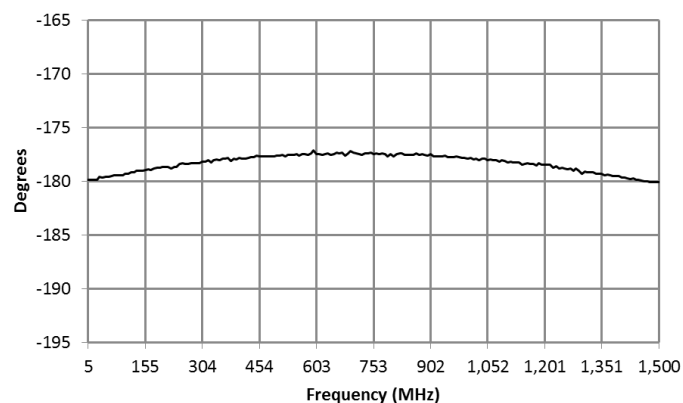
Insertion Loss 2 (pin5-3)



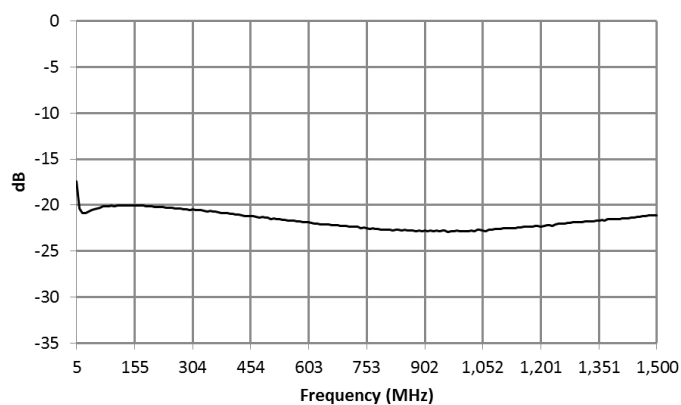
Amplitude Balance



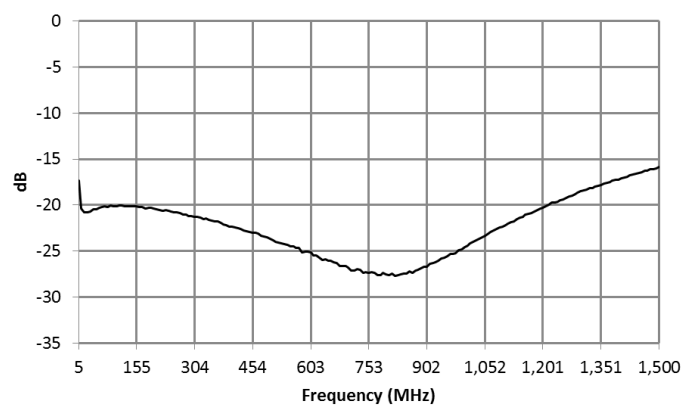
Phase Balance



Input Return Loss (pin5)



Balanced Output Return Loss (pin1-3)

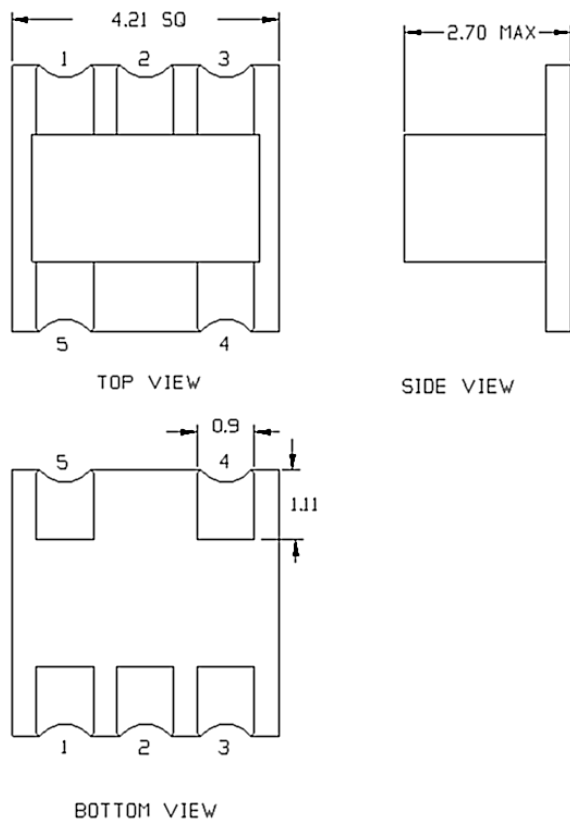


Full temperature plots available on request.

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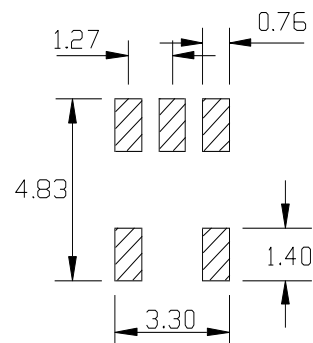
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Outline Drawing



1. Dimensions in mm.
2. Tolerance: $\pm 0.2\text{mm}$ unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Finish: Electroless nickel immersion gold (ENIG)

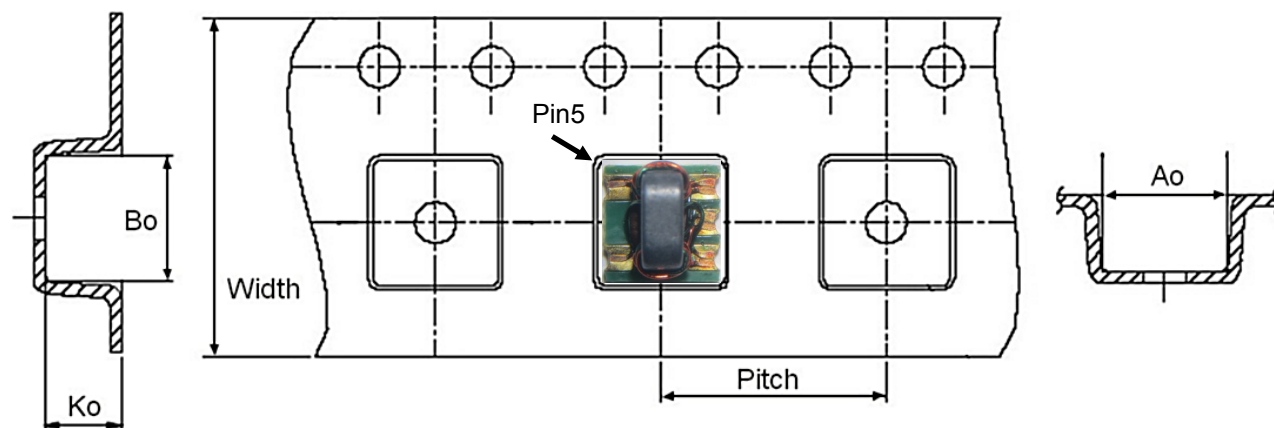
Footprint



Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	2000
Reel Size	mm	330
Tape Width	mm	12.00
Pitch	mm	8.00
Ao	mm	4.5
Bo	mm	4.5
Ko	mm	2.73
Orientation	-	F31
Reference Application Note ANI-019 for orientation		

Carrier Tape Orientation



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