# 1:1 Transmission Line Transformer, with Center Tap 5 - 1218 MHz



MABACT0040

Rev. V4

#### Features

- 1:1 Impedance
- Surface Mount
- Center Tape on Secondary
- Available on Tape and Reel
- 260° Reflow Compatible
- RoHS Compliant and Pb Free

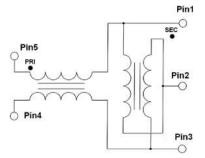
#### Applications

• High Volume CATV Broadband

#### Description

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

#### **Functional Schematic**



## Pin Configuration<sup>3</sup>

Pin #	Function	Pin #	Function
1	Secondary Dot (output 1)	4	Primary (ground)
2	Secondary center tap (ground)	5	Primary Dot (input)
3	Secondary (output 2)		

3. MACOM recommends connecting unused package pins to ground.

## Electrical Specifications: Freq. = 5 - 1218 MHz, $T_A$ = +25°C, $P_{IN}$ = 0 dBm, $Z_0$ = 75 $\Omega$

Parameter	Test Conditions	Units	Min.	Тур.	Max.
Impedance Ratio	_	Ratio		1:1	
Insertion Loss 1 (pin 5 - pin 1)	_	dB	_	1.0	1.6
Insertion Loss 2 (pin 5 - pin 3)	_	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°)	_	0	—	2.5	±10
Input Return Loss (pin 5)	_	dB	16	22	—

## Ordering Information<sup>1,2</sup>

Part Number	Package	
MABACT0040	bulk	
MABACT0040-TB	Sample Board	

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

#### Recommended Maximum Ratings<sup>4,5</sup>

Parameter	Units
Input Power	500 mW
DC Current	500 mA
Operating Temperature	-40°C to -+105°C

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

MACOM does not recommend sustained operation near these survivability limits.

\* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

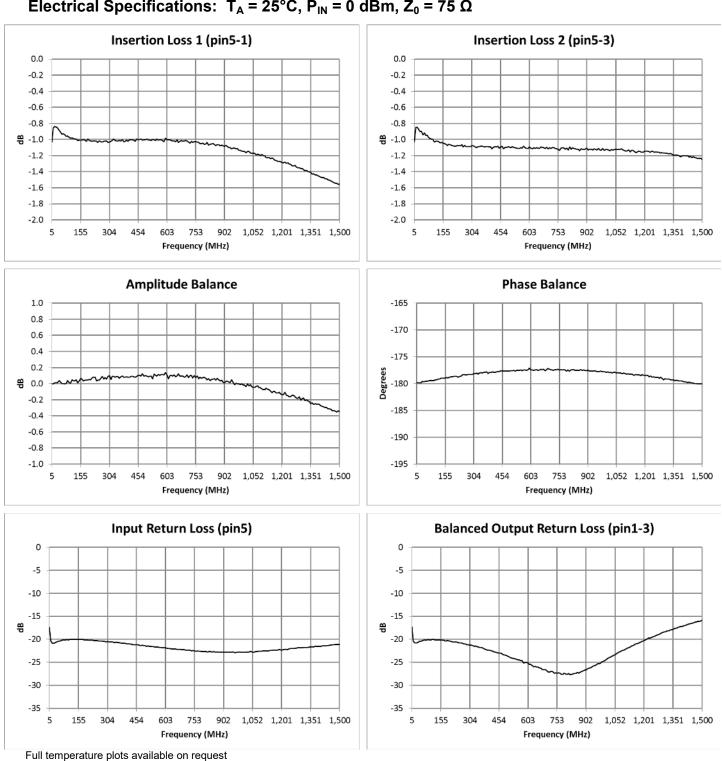
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#### Electrical Specifications: $T_A = 25^{\circ}C$ , $P_{IN} = 0$ dBm, $Z_0 = 75 \Omega$

2

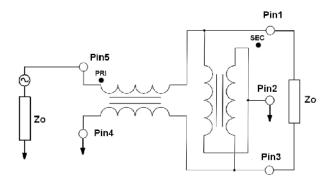
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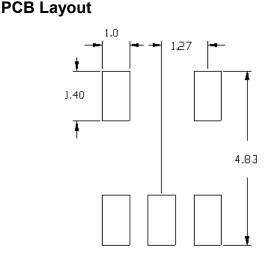
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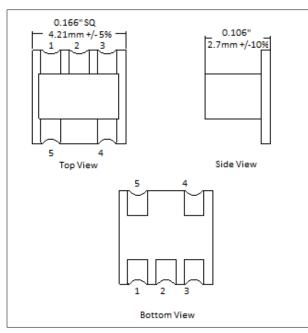
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# **Application Circuit**





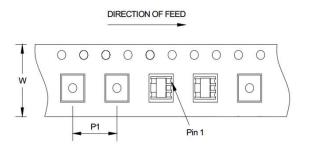
#### **Outline Drawing**



Dimensions in mm.

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

#### **Carrier Tape Orientation**



## **Tape & Reel Information**

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

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<sup>3</sup> 



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