



# THE DATASHEET OF MABACT0040



# 1:1 Transmission Line Transformer, with Center Tap

## 5 - 1218 MHz



MABACT0040

Rev. V4

### Features

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

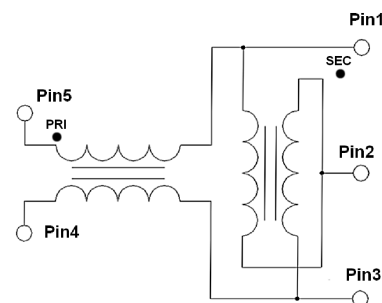
### Applications

- 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<sub>A</sub> = +25°C, P<sub>IN</sub> = 0 dBm, Z<sub>0</sub> = 75 Ω

Parameter	Test Conditions	Units	Min.	Typ.	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	dB	—	0.1	±0.5
	1000 - 1218 MHz	dB	—	0.07	±0.7
Phase Balance (ref value 180°)	—	°	—	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.
5. MACOM does not recommend sustained operation near these survivability limits.

<sup>1</sup> \* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

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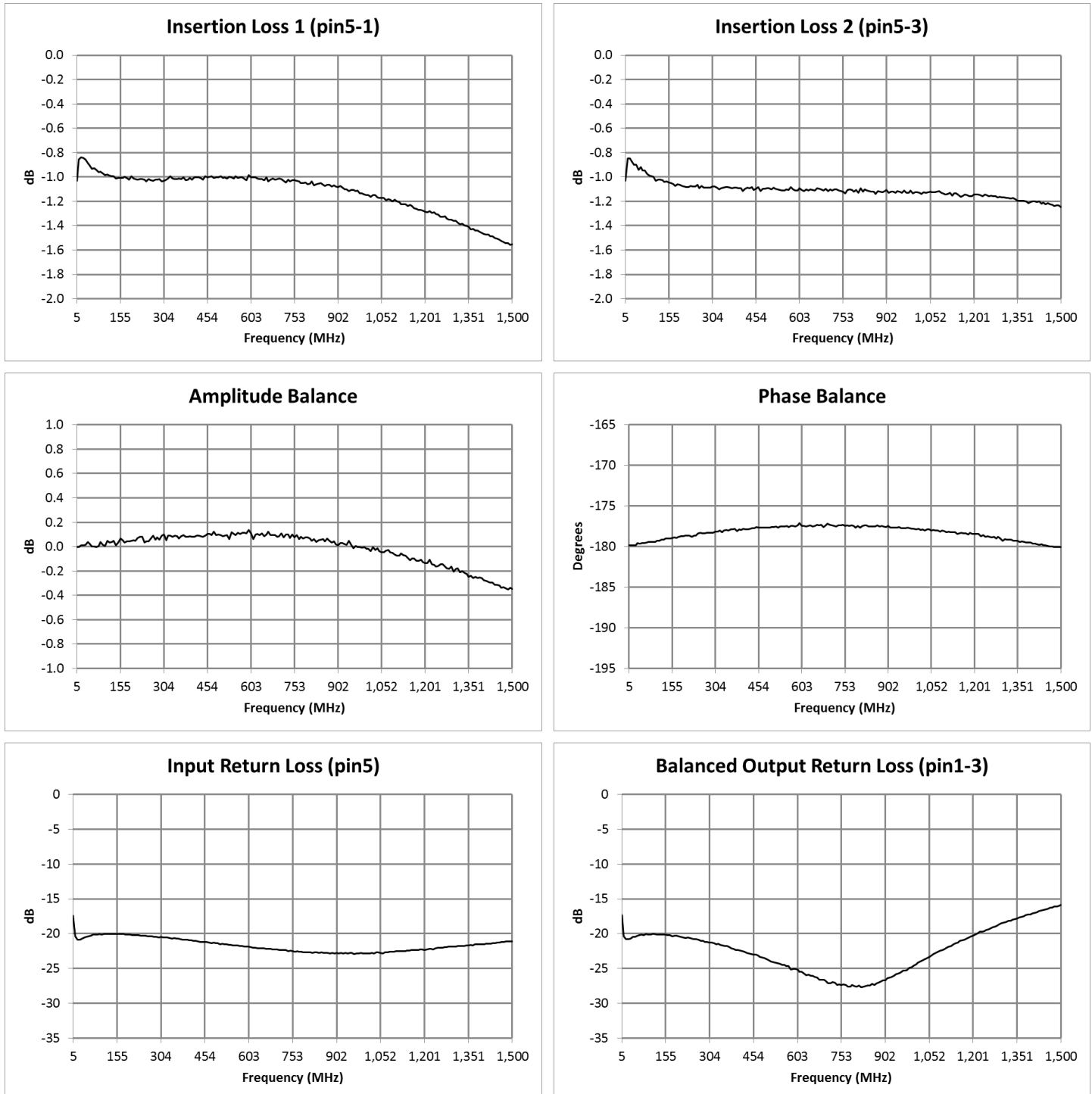
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Electrical Specifications:  $T_A = 25^\circ\text{C}$ ,  $P_{IN} = 0 \text{ dBm}$ ,  $Z_0 = 75 \Omega$



Full temperature plots available on request

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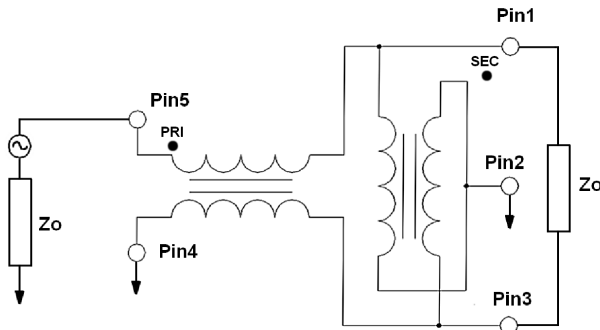
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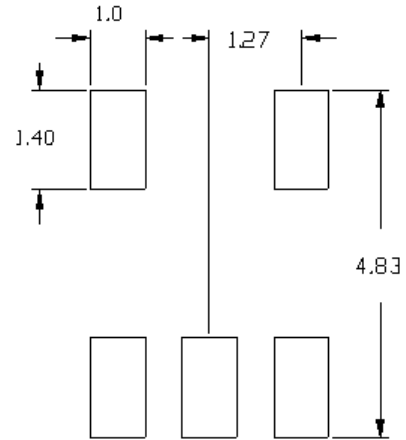
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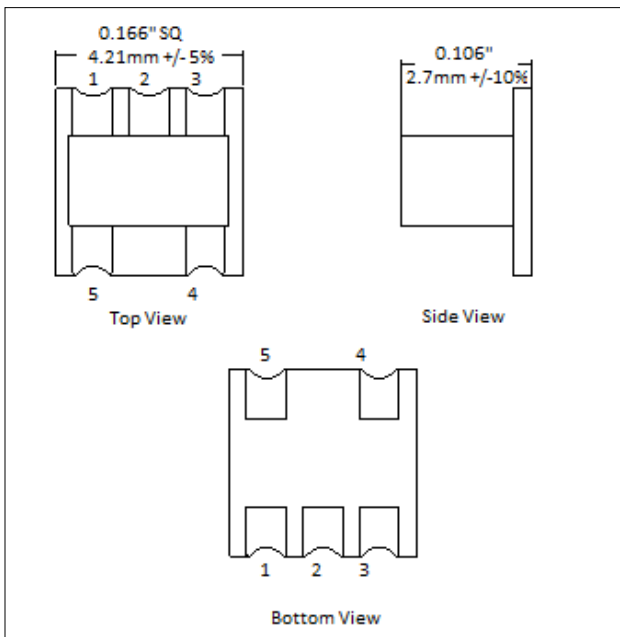
### Application Circuit



### PCB Layout

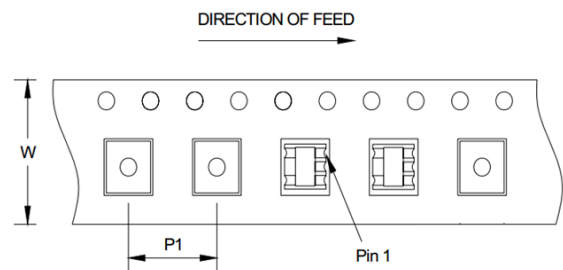


### Outline Drawing



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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