

## Auto Transformer 1:1.77 40 - 1215 MHz

Rev. V1

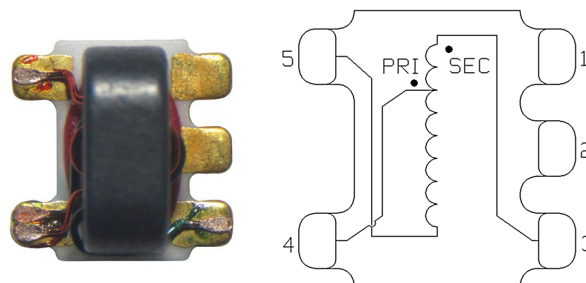
### Features

- 1:1.77 Impedance
- Surface Mount Package
- Excellent Temperature Stability
- Available on Tape and Reel
- 260° Reflow Compatible
- RoHS Compliant and Pb Free
- Suitable for all CATV, Broadband and FTTX applications

### Description

The MABA-011103 is a 1:1.77 auto transformer. This transformer is ideally suited for CATV broadband applications.

### Functional Schematic



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

Pin #	Function
1, 2	Not Connected (ground)
3	Secondary Dot
4	Primary Dot
5	Ground

3. MACOM recommends connecting unused package pins to ground.

### Electrical Specifications: Freq = 40 - 1215 MHz, T<sub>A</sub> = 25°C, Z<sub>0</sub> = 75 Ω, P<sub>IN</sub> = 0 dBm

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Impedance Ratio	-	-	—	1:1.77	—
Insertion Loss (Pin 4 - Pin 3)	40 - 150 MHz 150 - 750 MHz 750 - 1215 MHz	dB	—	2.4 2.8 2.6	3.0 3.1 3.0
Input Return Loss (Pin 4)	40 - 1215 MHz	dB	—	9	8
Output Return Loss (Pin 3)	40 - 1215 MHz	dB	13	16	—

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

Part Number	Package
MABA-011103	Tape & Reel
MABA-011103-TB	Customer Sample Board

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

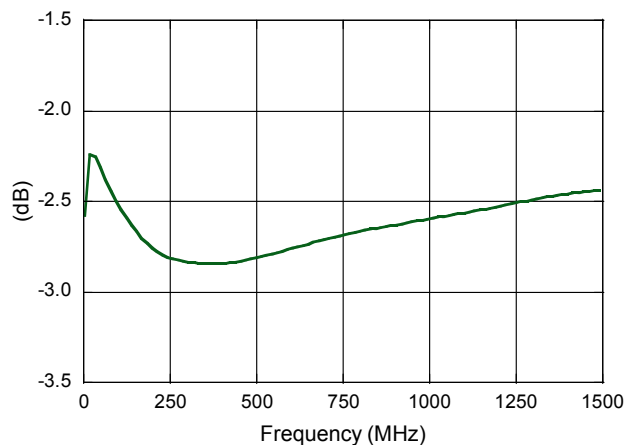
### Recommended Maximum Ratings<sup>4,5</sup>

Parameter	Rating
Input Power <sup>6</sup>	2 W
DC Current	200 mA
Operating Temperature	-40°C to +85°C

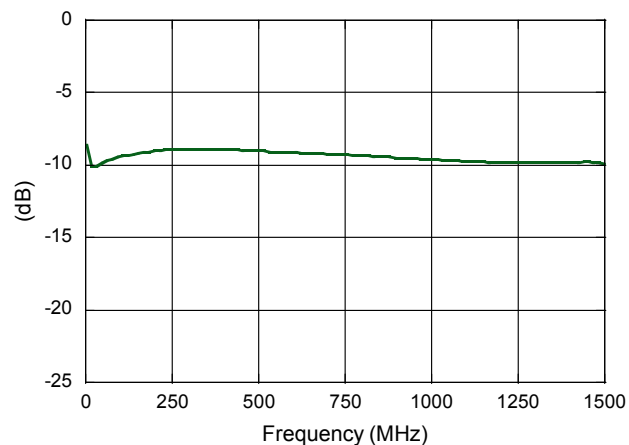
4. Exceeding anyone or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.
6. Specified at +25°C only.

**Typical Performance Curves<sup>7</sup>:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75\ \Omega$ ,  $P_{IN} = 0\ \text{dBm}$**

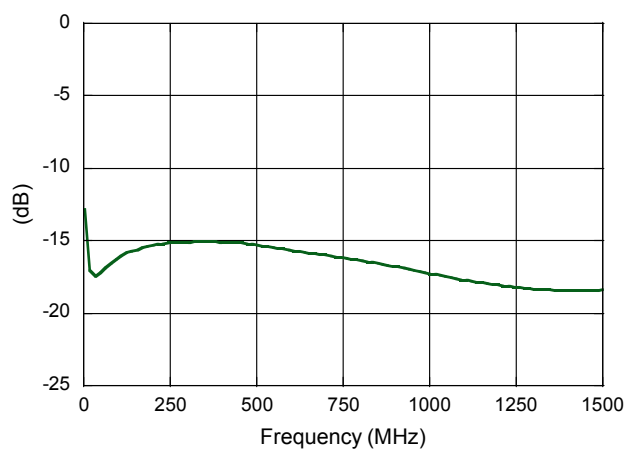
**Insertion Loss (pin 3)**



**Input Return Loss (pin 4)**

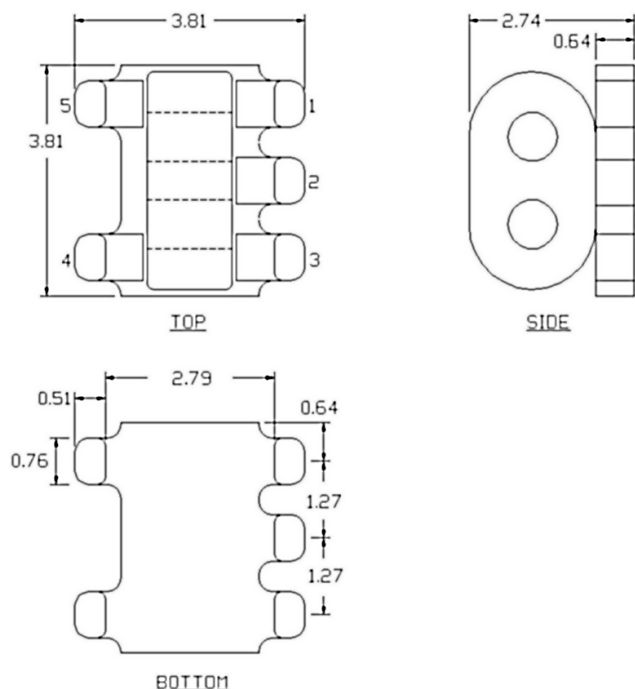


**Output Return Loss (pin 3)**



7. Full temperature plots available on request.

## Outline Drawing<sup>8,9,10,11</sup>

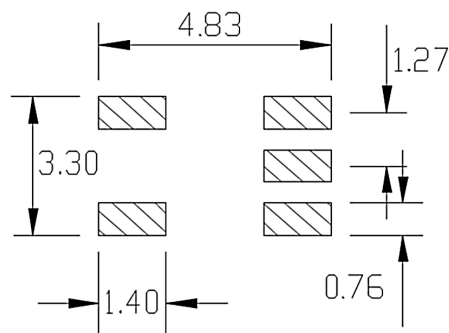


8. Dimensions in mm.  
9. Tolerance:  $\pm 0.2$  mm unless otherwise noted.  
10. Model number and lot code are printed on the reel.  
11. Finish: Electroless nickel immersion gold (ENIG).

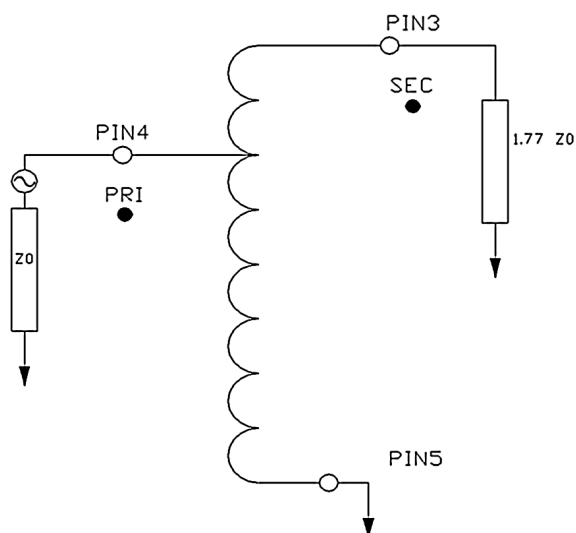
## PCB Layout<sup>12</sup>



12. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.



## Application Schematic



## Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	2000
Reel Size	mm	330
Tape Width	mm	12.00
Pitch	mm	8.00
Orientation	-	F5
Reference Application Note ANI-019 for orientation		

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