

# E-Series RF 1:1 Transformer

## 2 - 500 MHz



MABA-008937-TC11T5

Rev. V2

### Features

- 1:1 Impedance Ratio
- Surface Mount Package
- Tape and Reel Packaging Available
- 260°C Reflow Compatible
- RoHS\* Compliant version of the ETC1-1T-5

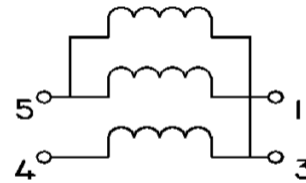
### Applications

- ISM

### Description

MABA-008937-TC11T5 is a 1:1 RF transformer available in a SM-22 surface mount package. It is designed to be utilized in both RoHS and standard reflow profiles. Typical applications include single to balanced mode conversion and impedance matching.

### Functional Schematic



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

Pin #	Function	Pin #	Function
1	Secondary	4	Primary Dot
2	Not Connected	5	Primary
3	Secondary Dot		

3. MACOM recommends connecting unused package pins to ground.

### Electrical Specifications: Freq. = 2 - 500 MHz, T<sub>A</sub> = 25°C, Z<sub>0</sub> = 50 Ω, P<sub>IN</sub> = 0 dBm

Parameter	Test Frequency (MHz)	Units	Min.	Typ.	Max.
Impedance Ratio	—	Ratio	—	1:1	—
Insertion Loss	2 - 300	dB	—	—	1.0
	2 - 500				2.0
Amplitude Balance	2 - 300	dB	—	—	0.3
	2 - 500				0.6
Phase Balance	2 - 300	°	—	—	2.0
	2 - 500				5.0

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

Part #	Description
MABA-008937-TC11T5	2000 piece reel

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

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

Parameter	Absolute Maximum
Input RF Power	250 mW
DC Current	240 mA
Operating Temperature	-40°C to +85°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.

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

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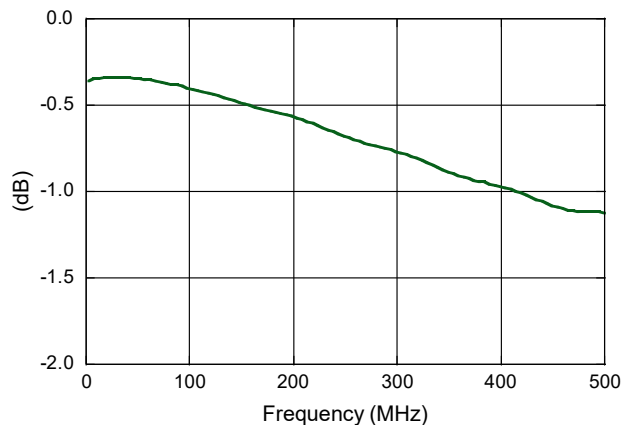


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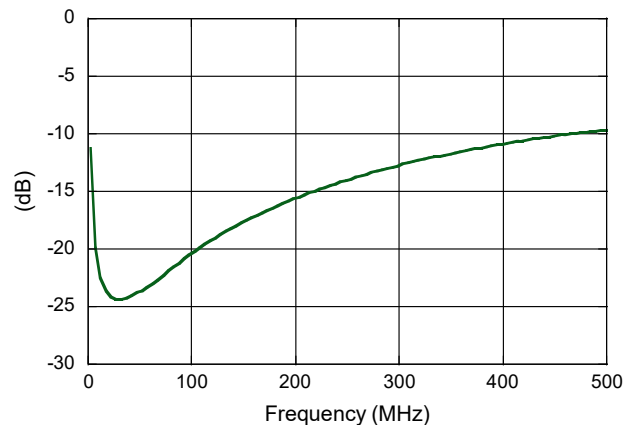
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## Typical Performance Curves @ +25°C<sup>6</sup>

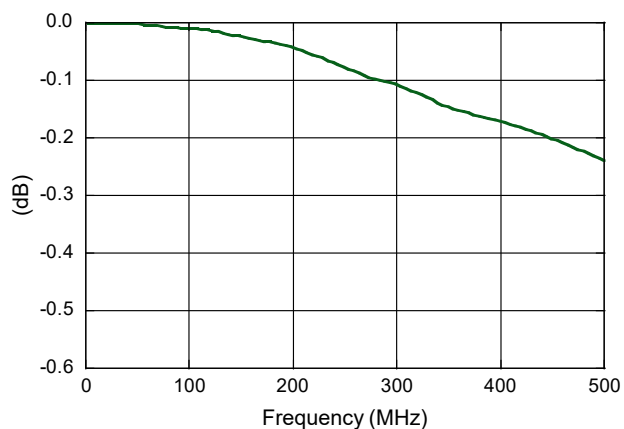
**Insertion Loss**



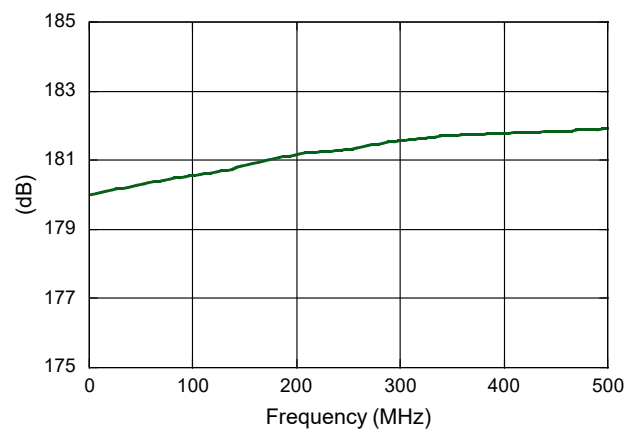
**Input Return Loss**



**Amplitude Balance**

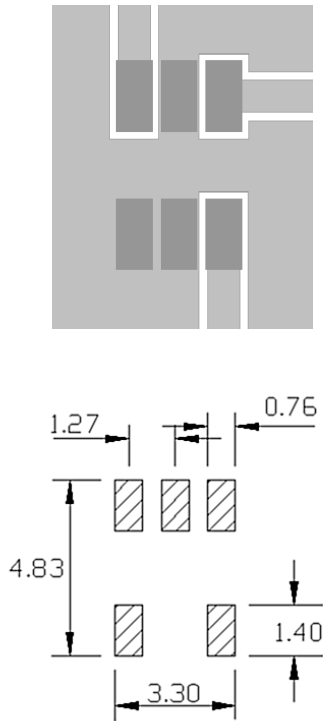


**Phase Balance**



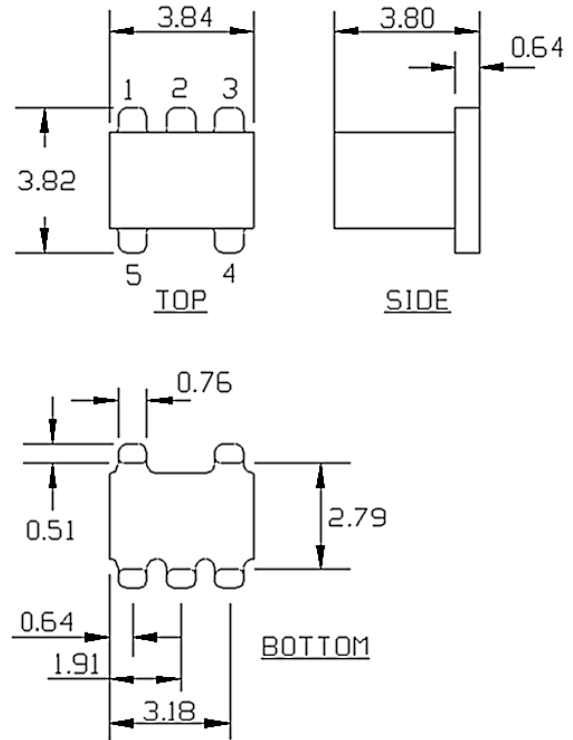
6. Full temperature plots available on request.

**Recommended Board Layout<sup>7</sup>**



7. 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.

**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. Plating finish: ENIG.

**Tape & Reel Information**

Parameter	Units	Value
Qty per reel	-	900
Reel Size	mm	330
Tape Width	mm	16.00
Pitch	mm	12.00
Orientation	-	F33
Reference Application Note ANI-019 for orientation		

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