

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

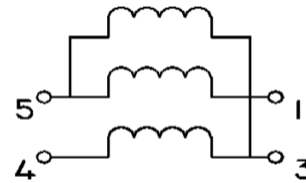
Applications

- 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 Configuration³

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_A = 25°C, Z₀ = 50 Ω, P_{IN} = 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^{1,2}

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^{4,5}

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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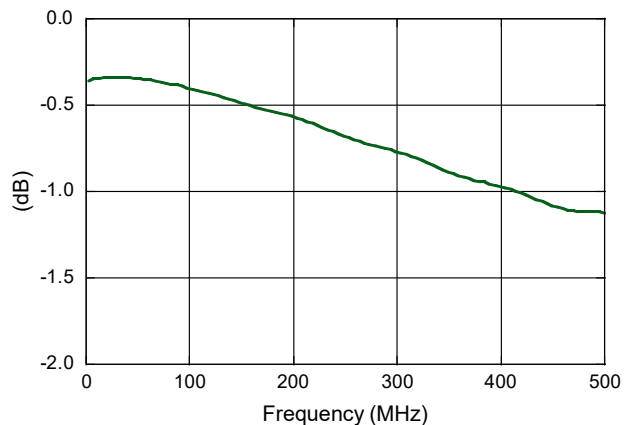


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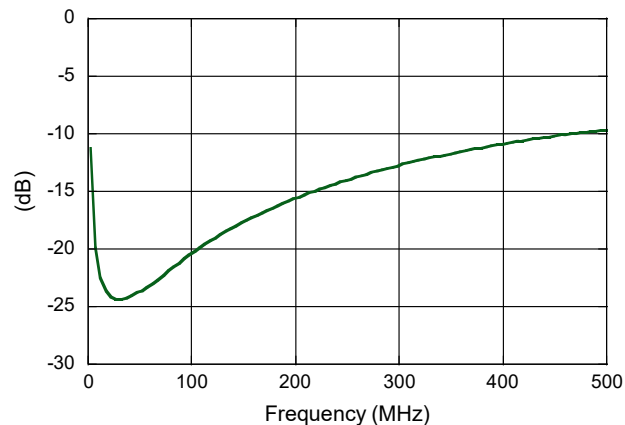
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Typical Performance Curves @ +25°C⁶

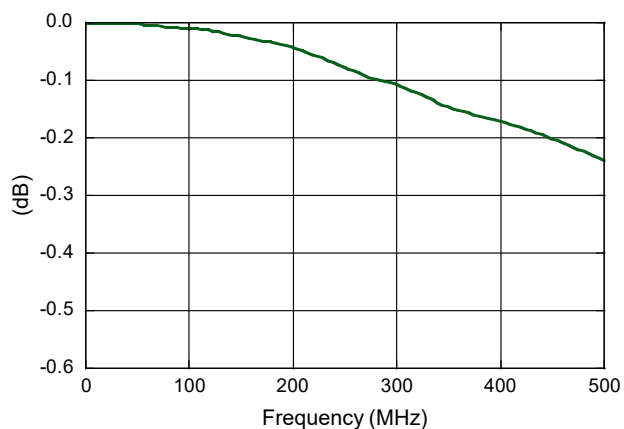
Insertion Loss



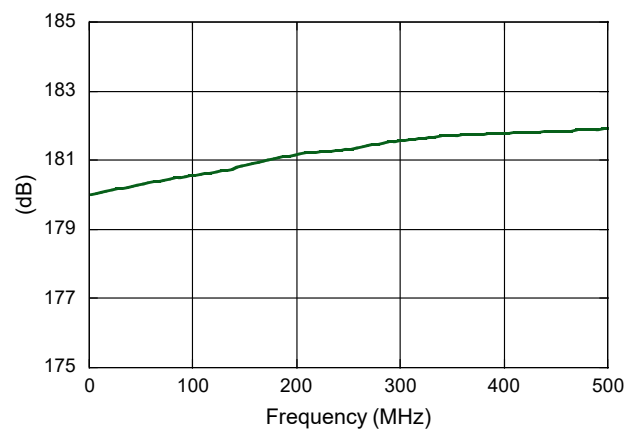
Input Return Loss



Amplitude Balance

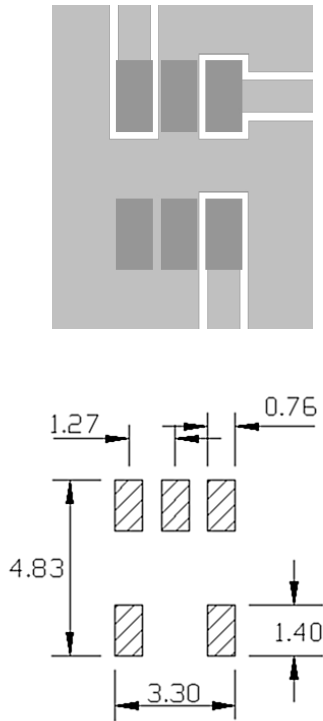


Phase Balance



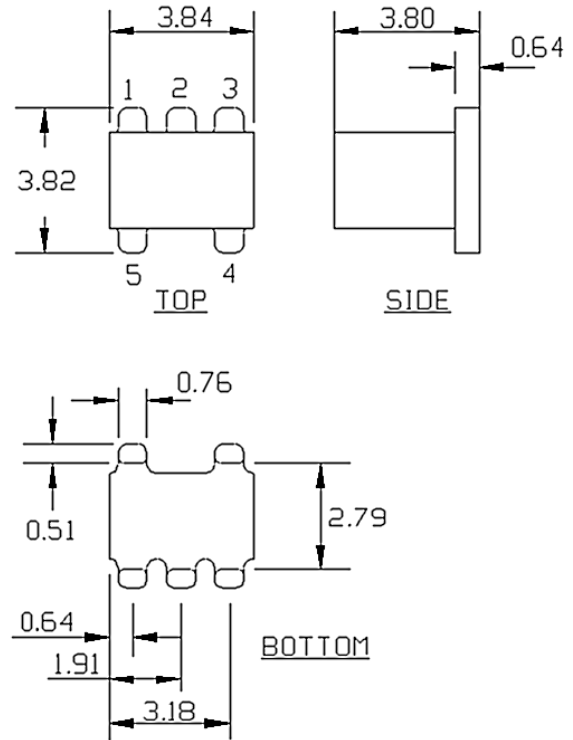
6. Full temperature plots available on request.

Recommended Board Layout⁷



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^{8,9,10,11}



8. Dimensions in mm.
9. Tolerance: ± 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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