

## 1:2 Transformer Balun 20 - 4000 MHz

Rev. V1

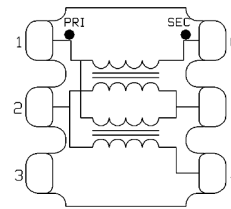
### Features

- Wide Bandwidth
- Suitable for multiple wideband applications
- Excellent RF Performance & Temperature Stability
- Surface Mount Package
- Available on Tape and Reel
- RoHS\* Compliant and Lead Free
- 260°C Reflow Compatible

### Description

The MABA-011100 is a 1:2 balun transformer in a surface mount package. Ideally suited multiple wide band applications.

### Functional Schematic



### Pin Configuration<sup>1</sup>

Pin #	Function
1	Primary Dot (Input)
2	Primary (Ground)
3	Not used
4	Secondary
5	Ground
6	Secondary Dot

1. MACOM recommends connecting unused package pins to ground.

### Electrical Specifications: Freq. = 20 - 4000 MHz, T<sub>A</sub> = +25°C, Z<sub>0</sub> = 50 Ω, P<sub>IN</sub> = 0 dBm

Parameter	Conditions	Units	Min	Typ	Max
Impedance Ratio	—	ratio	—	1:2	—
Balanced Insertion Loss	20 - 4000 MHz	dB	—	1.5	2.0
Amplitude Balance	20 - 4000 MHz	dB	—	0.5	±2.0
Phase Balance	20 - 4000 MHz	°	—	7.0	±15
Input Return Loss (Pin 1)	20 - 2000 MHz 2000 - 4000 MHz	dB	7 12	10 15	—
Output Return Loss (Pin 4-6)	20 - 4000 MHz	dB	11	14	—

### Ordering Information<sup>2,3</sup>

Part Number	Description
MABA-011100	2000 piece reel
MABA-011100-TB	Customer test board

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

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

Parameter	Absolute Maximum
Input RF Power <sup>6</sup>	1 W
DC Current	1 A
Operating Temperature	-55°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.  
6. Specified at +25C only, measured at 2GHz

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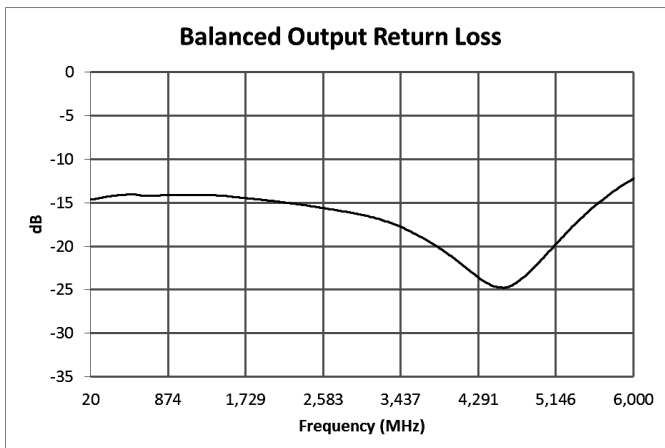
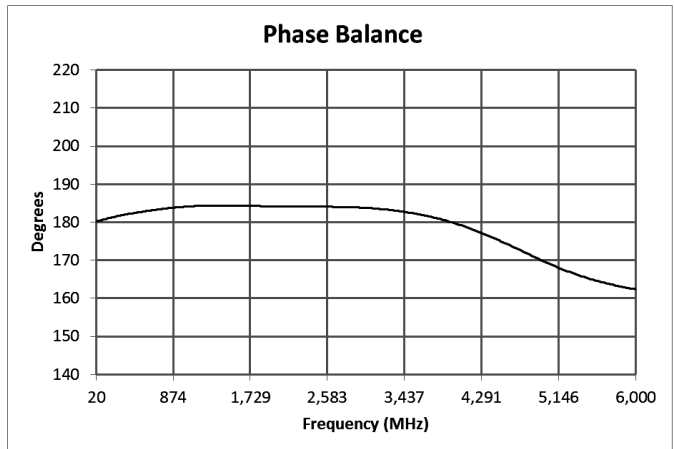
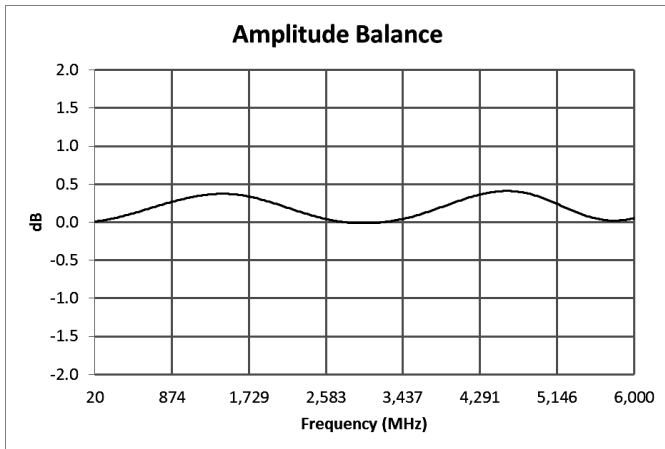
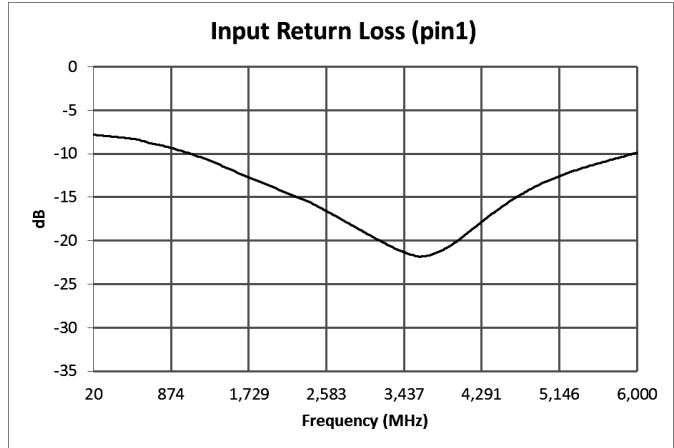
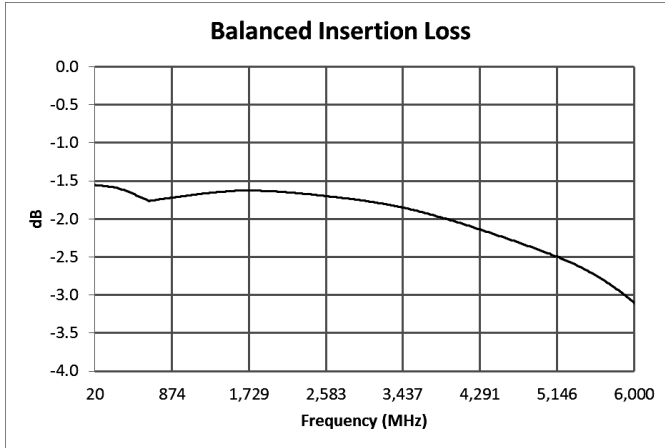
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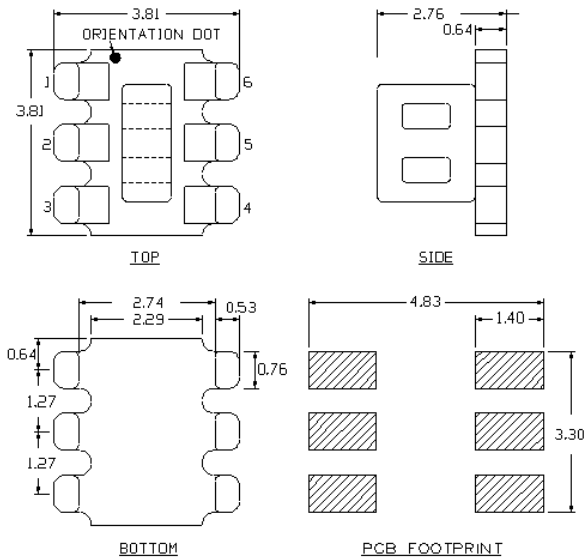
DC-0021385

## Typical Performance Curves<sup>6</sup>



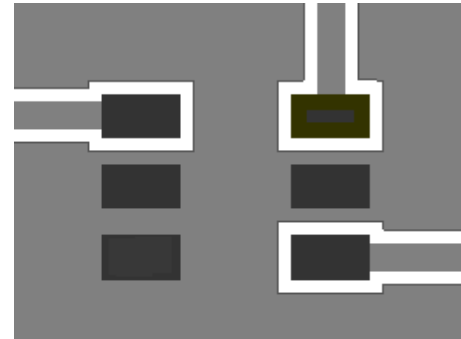
6. Temperature plots available on request.

## Outline Drawing<sup>7,8,9,10</sup>



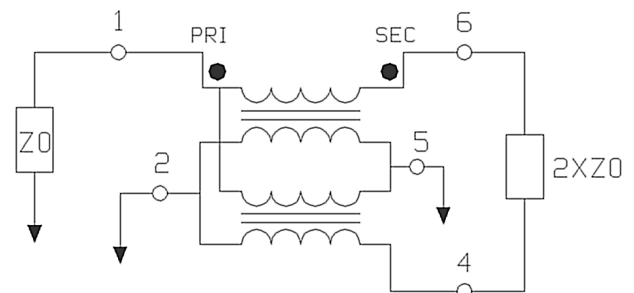
7. Dimensions in mm.
8. Tolerance:  $\pm 0.2$  mm unless otherwise noted.
9. Model number and lot code are printed on the reel.
10. Plating finish: ENIG.

## Recommended Board Layout<sup>11,12</sup>



11. Recommended PCB layout shown above uses Roger RO4350B substrate, thickness 0.254 mm.
12. Grounded coplanar wave guide trace, width 0.48 mm and Gap 0.25 mm.

## Application Schematic

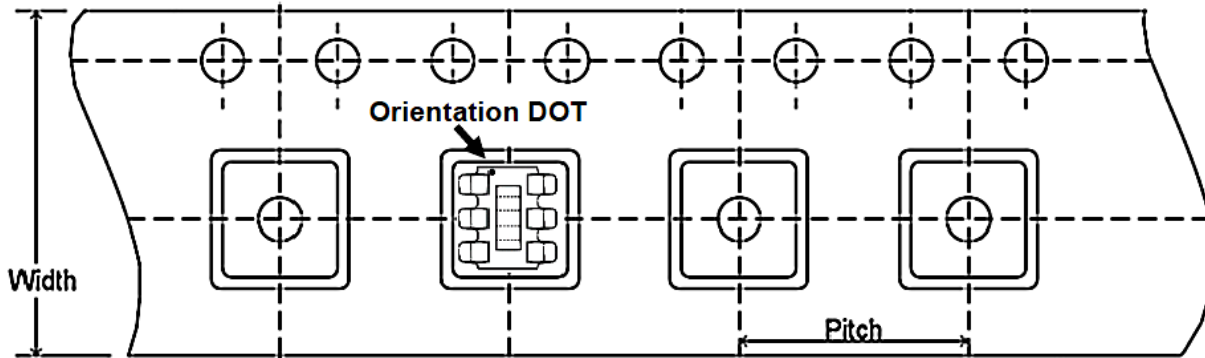


## Tape & Reel Information<sup>13</sup>

Parameter	Units	Value
Qty per Reel	-	2000
Reel Size	mm	330
Tape Width	mm	12.00
Pitch	mm	8.00
Orientation	-	F33

13. Reference Application Note ANI-019 for orientation.

## Carrier Tape Orientation



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