

1:1 Transformer Balun

5 - 8000 MHz Rev. V2

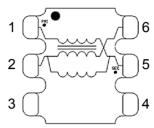
Features

- Wide Bandwidth
- Suitable for all Telecommunication Bands
- 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-011082 is a 1:1 balun transformer in a low cost surface mount package. Ideally suited for 2G, 3G, 4G, LTE, WiFi, WiMax, wide band amplifiers, mixers & modulators

Functional Schematic



Pin Configuration¹

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

MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 5 - 8000 MHz, $T_A = +25$ °C, $Z_0 = 50 \Omega$, $P_{IN} = 0 \text{ dBm}$

Parameter	Test Conditions Frequency (MHz)	Units	Min	Тур	Max
Impedance Ratio	_	ratio	_	1:1	_
Balanced Insertion Loss	5 - 500 500 - 1000 1000 - 6000 6000 - 8000	dB	_	1.6 1.4 1.3 1.7	1.9 1.6 1.7 2.6
Amplitude Balance	5 - 3000 3000 - 8000	dB	_	-0.3 1.0	±0.8 ±3.1
Phase Balance	5 - 500 500 - 8000	0	_	-3 -15	±8 ±20
Input Return Loss (Pin 1)	5 - 500 500 - 3000 3000 - 7000 7000 - 8000	dB	13 10 6 5	17 15 15 10	_
Output Return Loss (Pin 5-6)	5 - 5500 5500 - 8000	dB	9 5	14 13	_

Ordering Information^{2,3}

Part Number	Description
MABA-011082	2000 piece reel
MABA-011082-TB	Customer test board

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

Absolute Maximum Ratings^{4,5}

Parameter	Absolute Maximum
Input RF Power ⁶	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.
- MACOM does not recommend sustained operation near these survivability limits.
- 6. Specified at +25C only.

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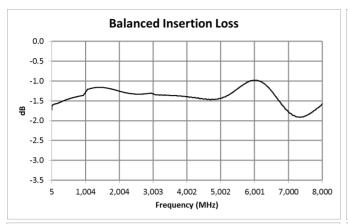


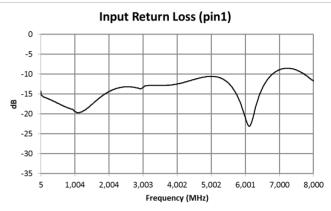
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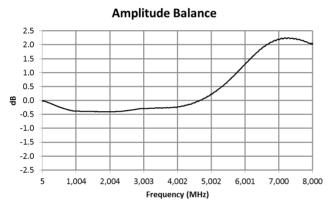
5 - 8000 MHz

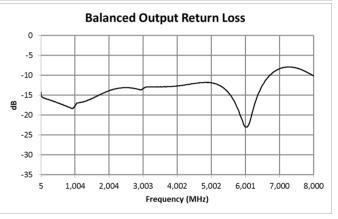
Rev. V2

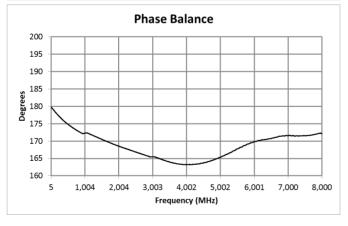
Typical Performance Curves⁷











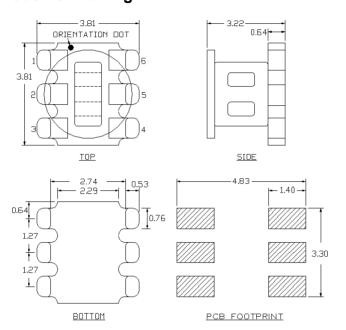
7. Temperature plots available on request.



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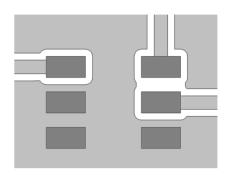
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Outline Drawing^{8,9,10,11}



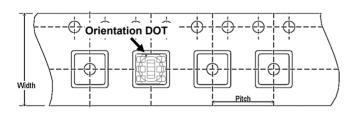
- 8. Dimensions in mm.
- 9. Tolerance: ±0.2 mm unless otherwise noted.
- 10. Model number and lot code are printed on the reel.
- 11. Plating finish: ENIG.

Recommended Board Layout 12,13



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

Carrier Tape Orientation



Tape & Reel Information¹⁴

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

14. Reference Application Note ANI-019 for orientation.

MABA-011082



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