

1:1 Transformer Balun 5 - 8000 MHz

Rev. V1

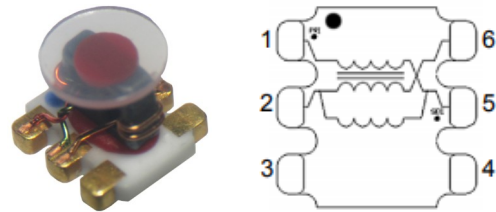
Features

- 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)

1. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 5 - 8000 MHz, T_A = +25°C, Z₀ = 50 Ω, P_{IN} = 0 dBm

Parameter	Conditions	Units	Min	Typ	Max
Impedance Ratio	—	ratio	—	1:1	—
Balanced Insertion Loss	5 - 500 MHz	dB	—	1.6	1.9
	500 - 1000 MHz			1.4	1.6
	1000 - 6000 MHz			1.3	1.7
	6000 - 8000 MHz			1.7	2.6
Amplitude Balance	5 - 3000 MHz	dB	—	-0.3	±0.8
	3000 - 8000 MHz			1.0	±3.1
Phase Balance	5 - 500 MHz	°	—	-3.0	±8.0
	500 - 8000 MHz			-15	±20
Input Return Loss (Pin 1)	5 - 500 MHz	dB	13	17	—
	500 - 3000 MHz		10	15	
	3000 - 7000 MHz		6	15	
	7000 - 8000 MHz		5	10	
Output Return Loss (Pin 5-6)	5 - 5500 MHz	dB	9	14	—
	5500 - 8000 MHz		5	13	

Ordering Information^{2,3}

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

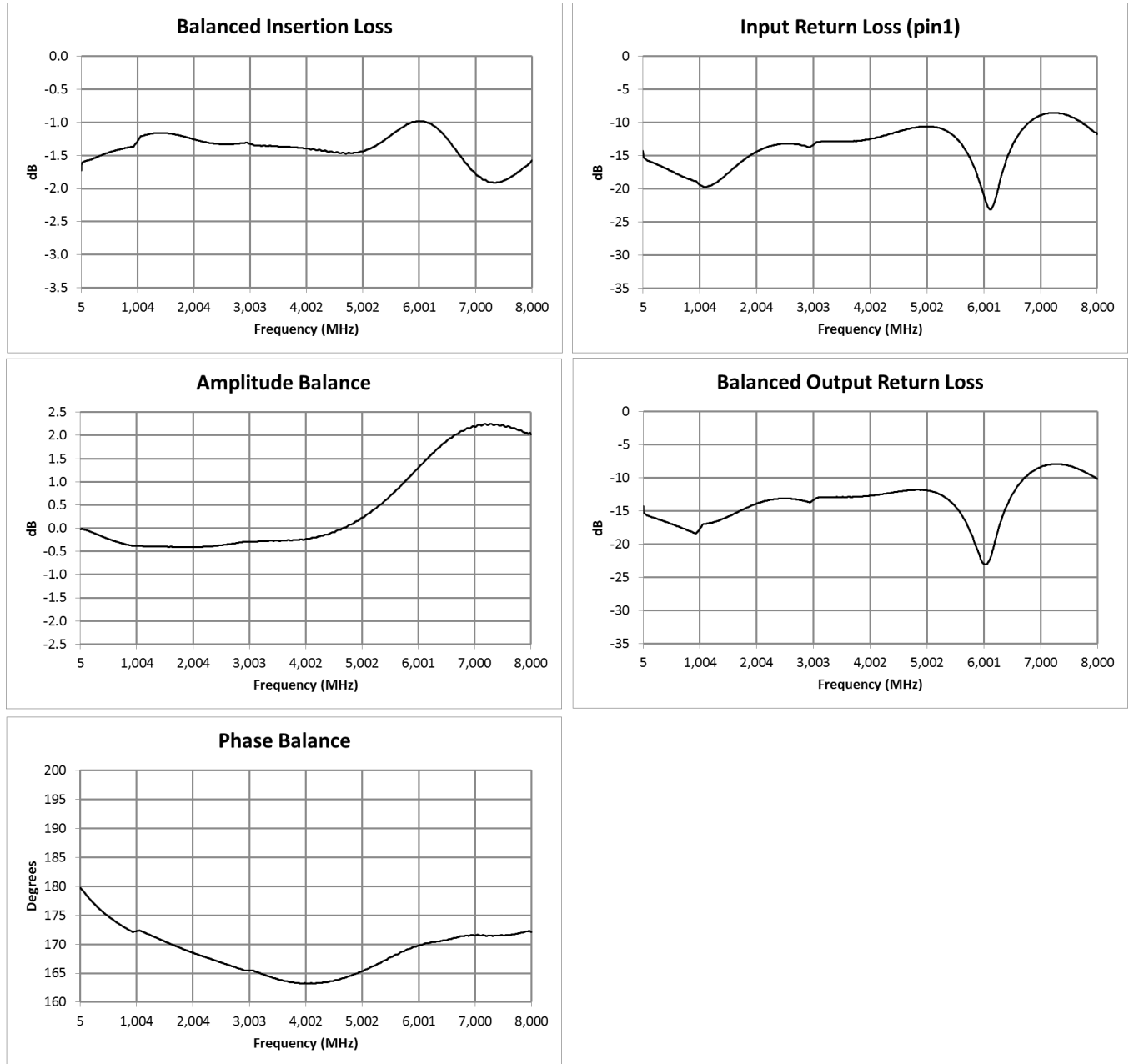
2. Reference Application Note M513 for reel size information.
3. All sample boards include 5 loose parts.

Absolute Maximum Ratings^{4,5}

Parameter	Absolute Maximum
Input RF Power	1 W
DC Current	1 A
Operating Temperature	-40°C to +85°C

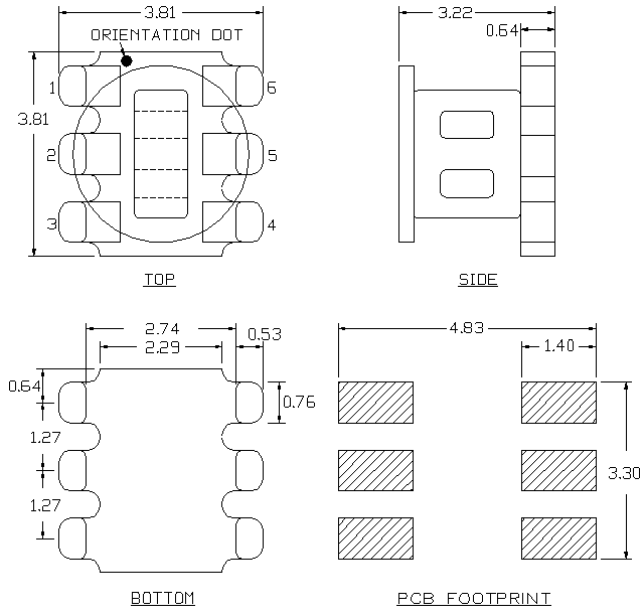
4. Exceeding any one or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.

Typical Performance Curves⁶



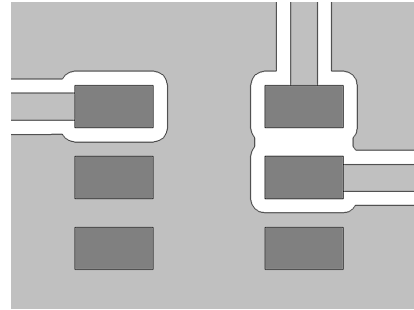
6. Temperature plots available on request.

Outline Drawing^{7,8,9,10}



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

Recommended Board Layout^{11,12}



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.

Tape & Reel Information¹³

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.

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