

1:1 Transmission Line Balun 5 - 3000 MHz



MABA-011115

Rev. V1

Features

- 50 Ω Unbalanced/ 50 Ω Balanced
- Wide Bandwidth
- Excellent RF Performance & Temperature Stability from -55°C to $+105^{\circ}\text{C}$
- MIL-STD-202 Screening Available

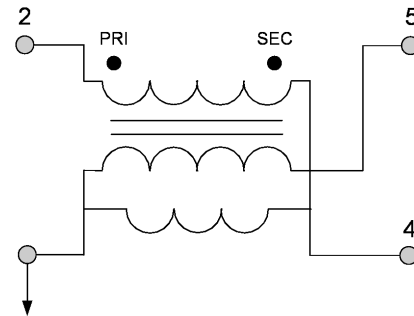
Applications

- Aerospace & Defense
- ISM

Description

The MABA-011115 is a 1:1 balun transformer ideally suited multiple wide band applications.

Functional Schematic



Pin Configuration²

Pin #	Function	Pin #	Function
1, 3, 6	Not used	4	Output 2
2	Input	5	Output 1

2. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 5 - 3000 MHz, $T_A = +25^{\circ}\text{C}$, $Z_0 = 50 \Omega$, $P_{IN} = 0 \text{ dBm}$

Parameter	Conditions	Units	Min.	Typ.	Max.
Impedance Ratio	-	ratio	—	1:1	—
Insertion Loss (pin 2 - pin 4)	5 - 2000 MHz	dB	—	0.8	1.2
	2000 - 3000 MHz			2.4	3.5
Insertion Loss (pin 2 - pin 5)	5 - 2000 MHz	dB	—	0.7	1.1
	2000 - 3000 MHz			2.0	2.9
Balanced Insertion Loss	5 - 2000 MHz	dB	—	0.7	1.1
	2000 - 3000 MHz			2.0	3.2
Amplitude Balance	5 - 2000 MHz	dB	—	0.2	± 1.0
	2000 - 3000 MHz			0.9	± 1.5
Phase Balance	5 - 3000 MHz	$^{\circ}$	—	4.0	± 10
Input Return Loss (pin 2)	5 - 2000 MHz	dB	12	18	—
	2000 - 3000 MHz		5	9	
Output Return Loss (pin 4-5)	5 - 2000 MHz	dB	12	18	—
	2000 - 3000 MHz		5	9	

Ordering Information¹

Part Number	Description
MABA-011115	Bulk
MABA-011115-TB	Customer test board

1. All sample boards include 1 loose part.

Absolute Maximum Ratings^{3,4}

Parameter	Absolute Maximum
Input RF Power ⁵	2 W
DC Current	1 A
Operating Temperature	-55°C to $+105^{\circ}\text{C}$

- 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.
- Specified at $+25^{\circ}\text{C}$ only and measured at 900 MHz & 1200 MHz.

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

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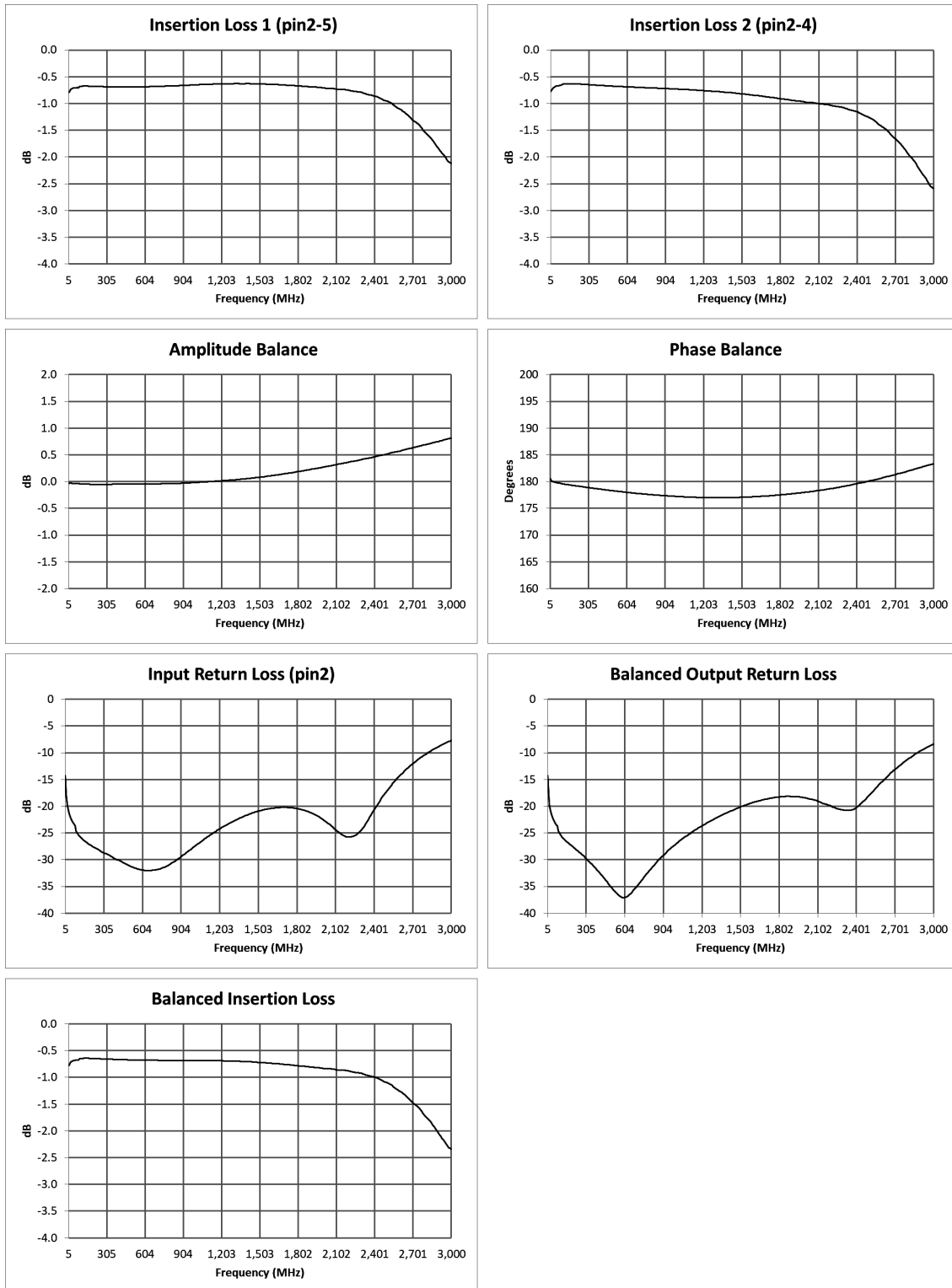
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Typical Performance Curves⁶



6. Temperature plots available on request.

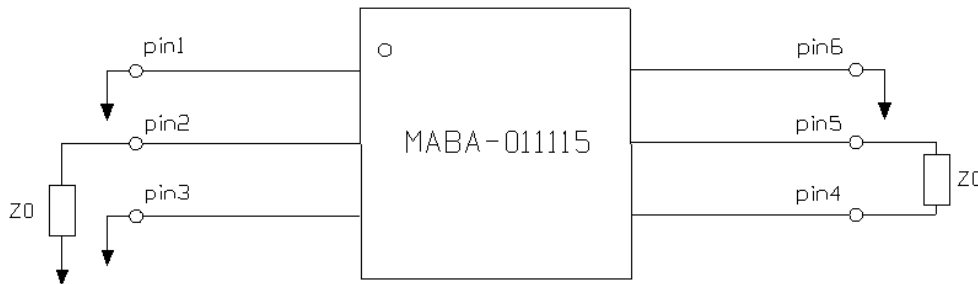
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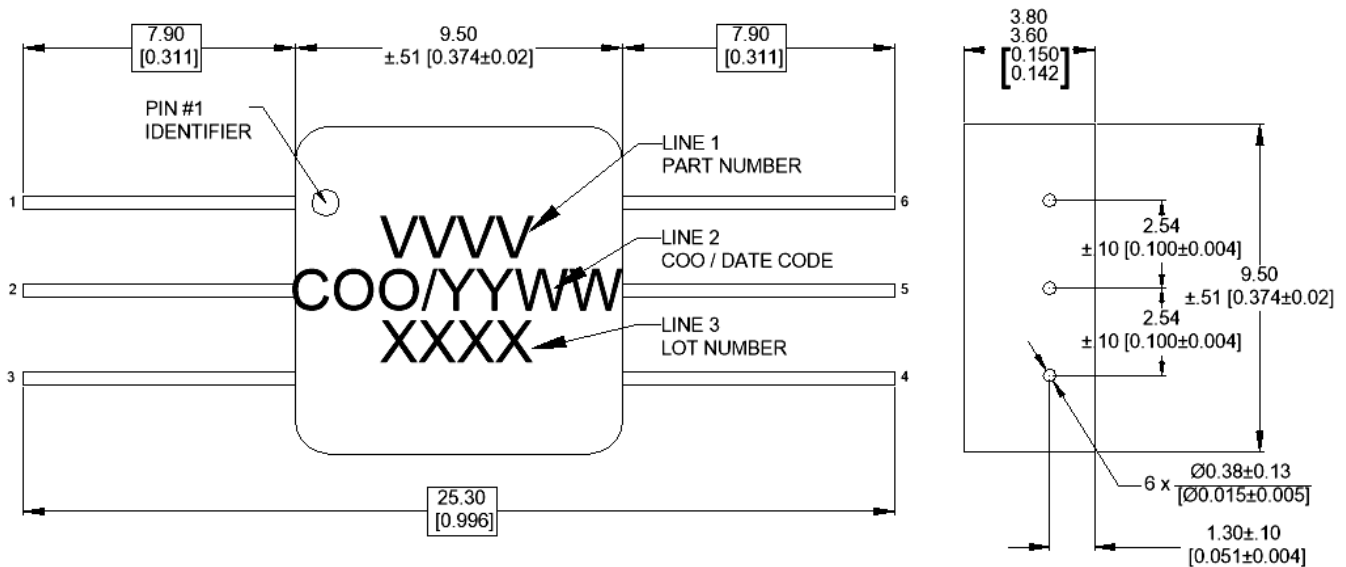
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Application Circuit



Outline Drawing ^{8,9,10,11,12}



8. Dimensions in mm.
9. Tolerance: ± 0.25 mm unless otherwise noted.
10. Model number and lot code are printed on the tray
11. Weight (approx.): 2 Grams
12. Brown coloured bead at pin3

1:1 Transmission Line Balun

5 - 3000 MHz



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