

1:2 Transmission Line Balun 5 - 3000 MHz



MABA-011116

Rev. V1

Features

- 50 Ω Unbalanced/ 100 Ω Balanced
- Wide Bandwidth
- Excellent RF Performance & Temperature Stability from – 55°C to +105°C
- MIL-STD-202 Screening Available

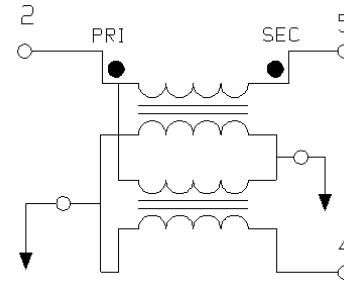
Applications

- Aerospace & Defense
- ISM

Description

The MABA-011116 is a 1:2 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°C, Z₀ = 50 Ω, P_{IN} = 0 dBm

Parameter	Conditions	Units	Min.	Typ.	Max.
Impedance Ratio	-	ratio	—	1:2	—
Insertion Loss (pin 2 - pin 4)	5 - 2000 MHz	dB	—	1.7	2.0
	2000 - 3000 MHz			1.9	2.4
Insertion Loss (pin 2 - pin 5)	5 - 3000 MHz	dB	—	1.5	2.1
Balanced Insertion Loss	5 - 50 MHz	dB	—	1.6	2.0
	50 - 3000 MHz			1.4	1.8
Amplitude Balance	5 - 2000 MHz	dB	—	0.8	±1.5
	2000 - 3000 MHz			1.1	±2.0
Phase Balance	5 - 2000 MHz	°	—	13	±20
	2000 - 3000 MHz			21	±32
Input Return Loss (pin 2)	5 - 50 MHz	dB	6.5	7.5	—
	50 - 2000 MHz		7.0	10.0	
	2000 - 3000 MHz		8.0	14.0	
Output Return Loss (pin 4-5)	5 - 3000 MHz	dB	10	14	—

Ordering Information¹

Part Number	Description
MABA-011116	Bulk
MABA-011116-TB	Customer test board

1. All sample boards include 1 loose part.

Absolute Maximum Ratings^{3,4}

Parameter	Absolute Maximum
Input RF Power ⁵	1 W
DC Current	1 A
Operating Temperature	-55°C to +105°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°C only and measured at 900 MHz & 2500 MHz.

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

1

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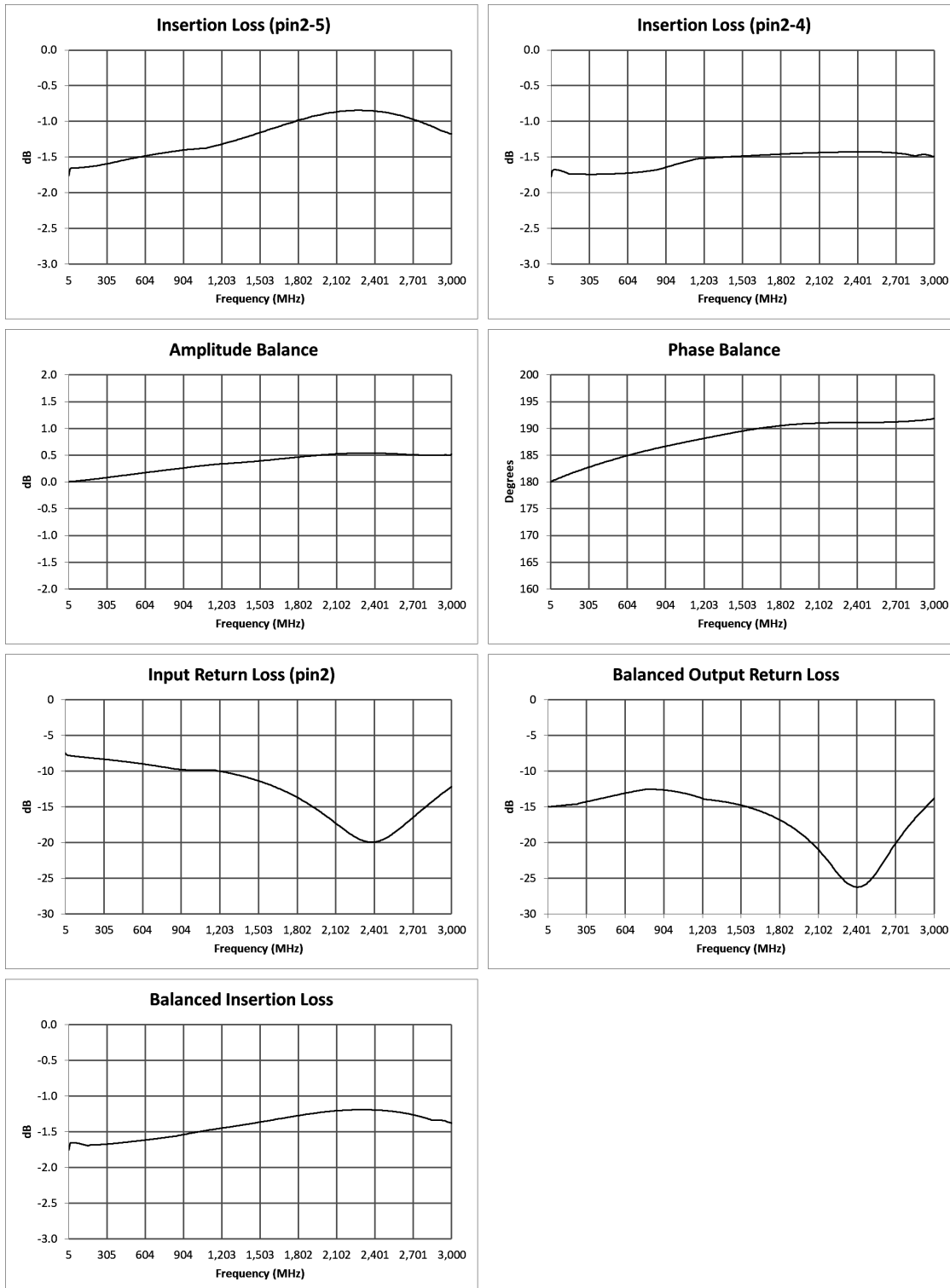
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Typical Performance Curves⁶



6. Temperature plots available on request.

2

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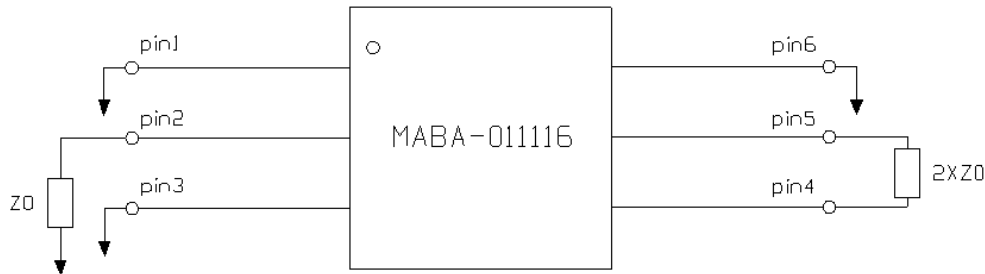
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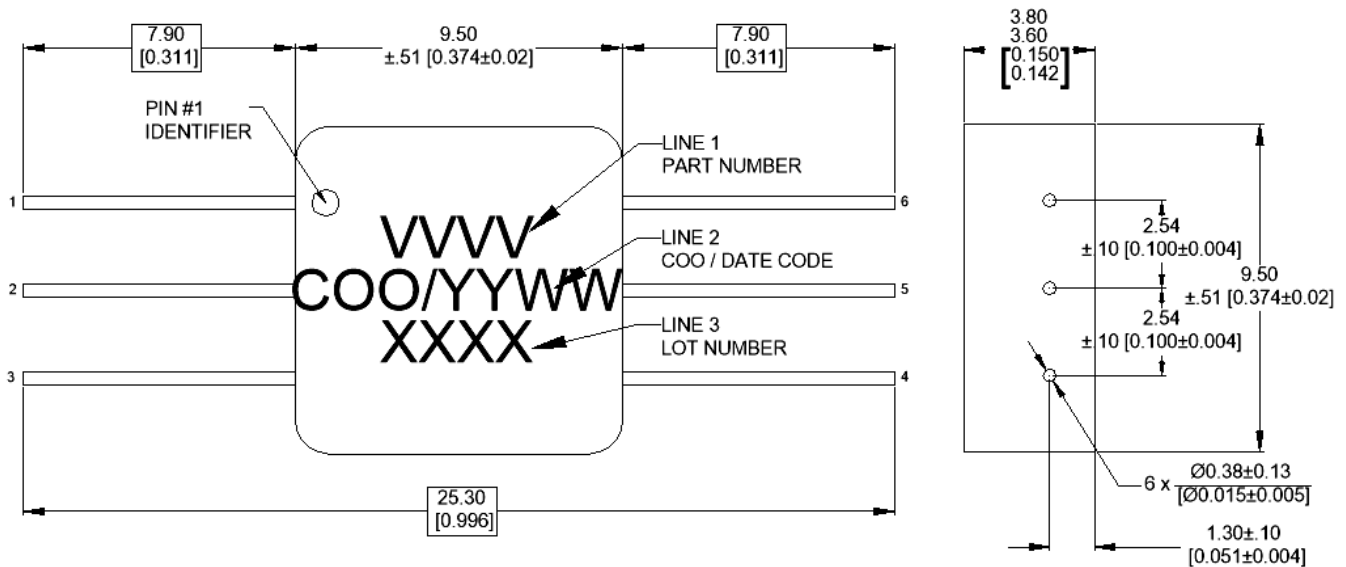
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Application Circuit



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

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5 - 3000 MHz



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