

1:2 Transmission Line Balun

5 - 1200 MHz Rev. V1

Features

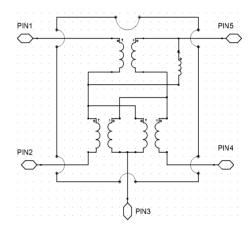
- Surface Mount
- 1:2 Impedance
- · Available on Tape and Reel
- RoHS* Compliant and Lead Free
- 260°C Reflow Compatible
- Excellent Temperature Stability

Description

The MABA-011086 is a 1:2 transmission line balun in a low cost surface mount package. Ideally suited for all CATV Broadband and FTTx applications.



Functional Schematic



Pin Configuration³

Pin #	Function		
1	Input (PRI dot)		
2	Output 1 (SEC dot)		
3	Centre tap (RF Ground)		
4	Output 2 (SEC)		
5	Ground (PRI)		

3. MACOM recommends connecting unused package pins to ground.

Ordering Information^{1,2}

Part #	Description		
MABA-011086	900 piece reel		
MABA-011086-TB	Customer test board		

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



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Electrical Specifications: Freq. = 5 - 1200 MHz, $T_A = 25^{\circ}C$, $Z_0 = 75 \Omega$, $P_{IN} = 0 \text{ dBm}$

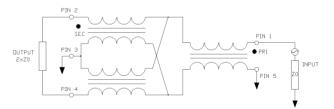
Parameter	Test Frequency (MHz)	Units	Min.	Тур.	Max.
Impedance Ratio	-	Ratio	_	1:2	_
Insertion Loss 1 (Pin 1 to pin 2)	5 - 50 50 - 400 400 -1000 1000 -1200	dB	_	0.7 0.7 1.6 1.9	1.1 1.1 2.1 2.5
Insertion Loss 2 (Pin 1 to pin 4)	5 - 50 50 - 400 400 -1000 1000 -1200		_	0.9 0.8 1.6 2.1	1.2 1.2 1.9 2.3
Amplitude Balance	5 - 50 50 - 400 400 - 1000 1000 -1200	dB	-0.6 -0.6 -1.0 -1.0	0.3 0.3 0.6 0.9	0.6 0.6 1.0 1.0
Phase Balance	5 - 50 50 - 400 400 - 1000 1000 -1200	o	-5 -5 -8 -11	3 2 5 8	5 5 8 11
Input Return Loss (Pin 1)	5 - 50 50 - 400 400 -1000 1000 -1200	dB	8 20 19 15	10 22 21 17	_
Balance Output Return Loss	5 - 50 50 - 400 400 -1000 1000 -1200	dB	8 21 18 15	10 23 21 18	_

Absolute Maximum Ratings^{4,5}

Parameter	Absolute Maximum		
Input RF Power	250 mW		
DC Current	600 mA		
Operating Temperature	-40°C to +85°C		

4. Exceeding any one or combination of these limits may cause permanent damage to this device.

Application Schematic



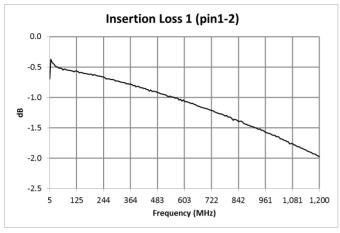
MACOM does not recommend sustained operation near these survivability limits.

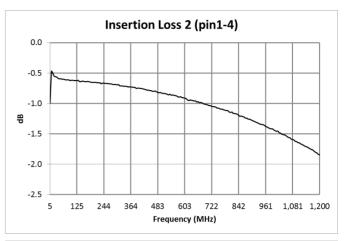


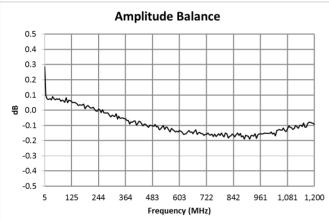
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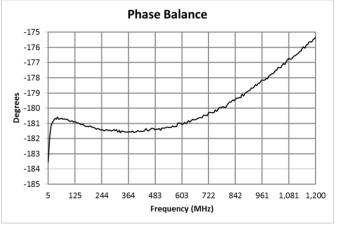
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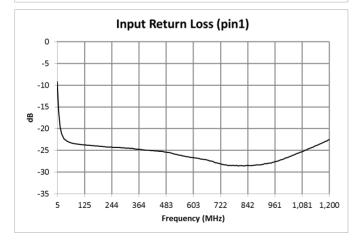
Typical Performance Curves⁶

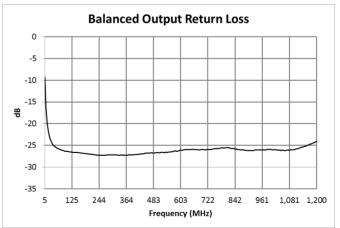












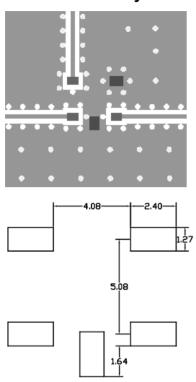
6. Full temperature plots available on request.



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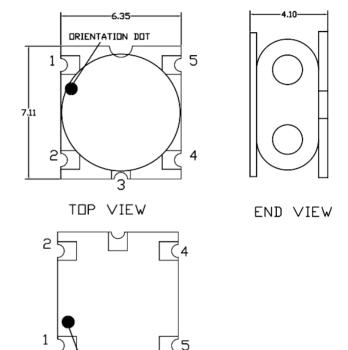
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Recommended Board Layout⁷



 Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

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

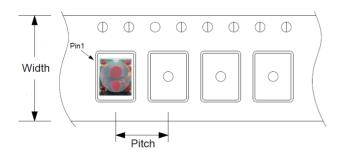


BOTTOM VIEW

DRIÈNTATION DOT

- 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.

Carrier Tape Orientation



Tape & Reel Information

Parameter	Units	Value		
Qty per reel	-	900		
Reel Size	mm	330		
Tape Width	mm	16.00		
Pitch	mm	12.00		
Orientation	-	F33		
Reference Application Note ANI-019 for orientation				

MABA-011086



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