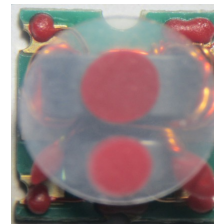


Features

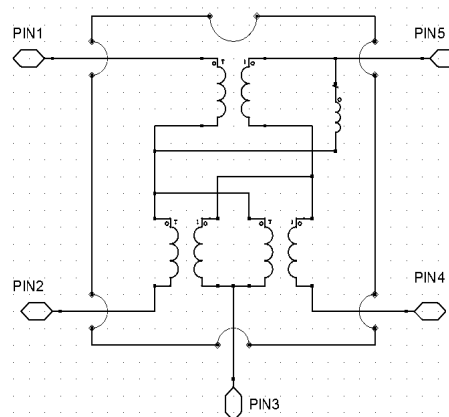
- Surface Mount
- 1:2 Impedance
- Available on Tape and Reel
- RoHS* Compliant and Lead Free
- 260°C Reflow Compatible
- Excellent Temperature Stability



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



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.

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.

1:2 Transmission Line Balun 5 - 1200 MHz

Rev. V1

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

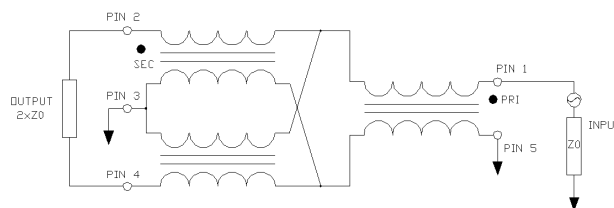
Parameter	Test Frequency (MHz)	Units	Min.	Typ.	Max.
Impedance Ratio	-	Ratio	—	1:2	—
Insertion Loss 1 (Pin 1 to pin 2)	5 - 50	dB	—	0.7	1.1
	50 - 400			0.7	1.1
	400 - 1000			1.6	2.1
	1000 - 1200			1.9	2.5
Insertion Loss 2 (Pin 1 to pin 4)	5 - 50	dB	—	0.9	1.2
	50 - 400			0.8	1.2
	400 - 1000			1.6	1.9
	1000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

Absolute Maximum Ratings^{4,5}

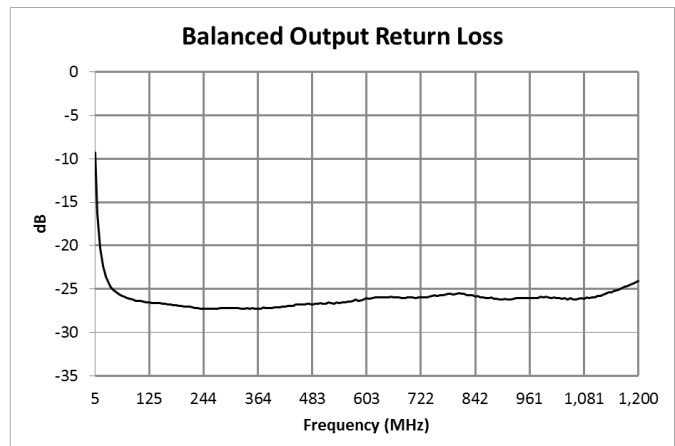
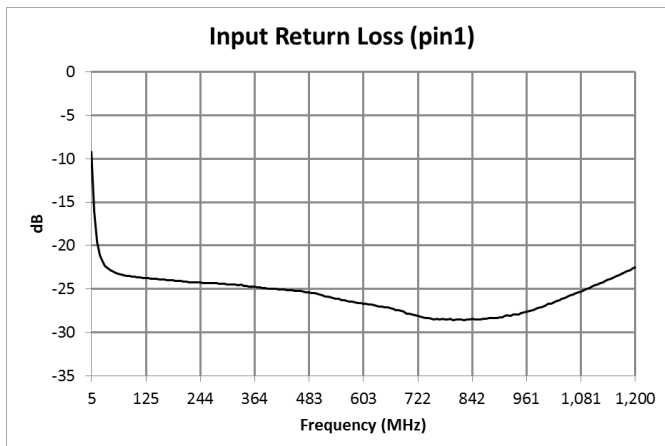
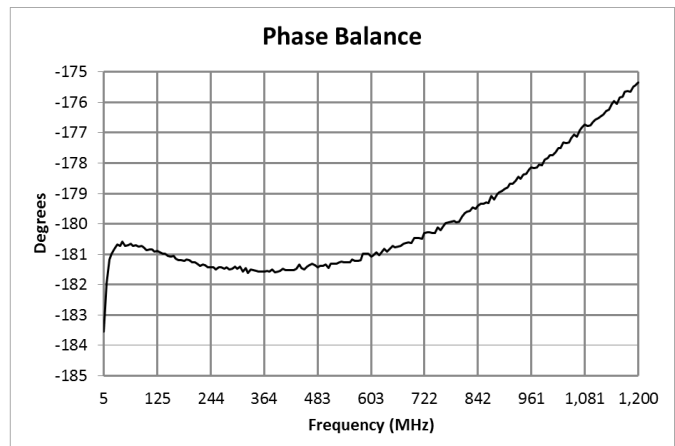
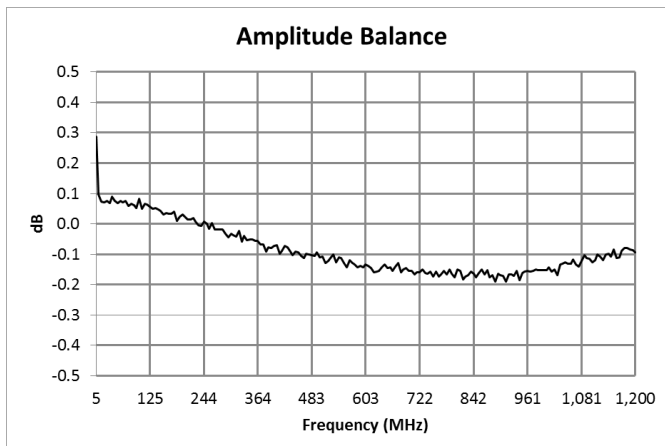
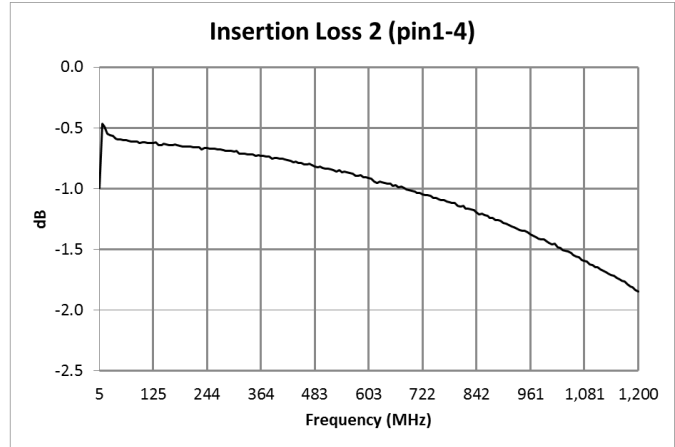
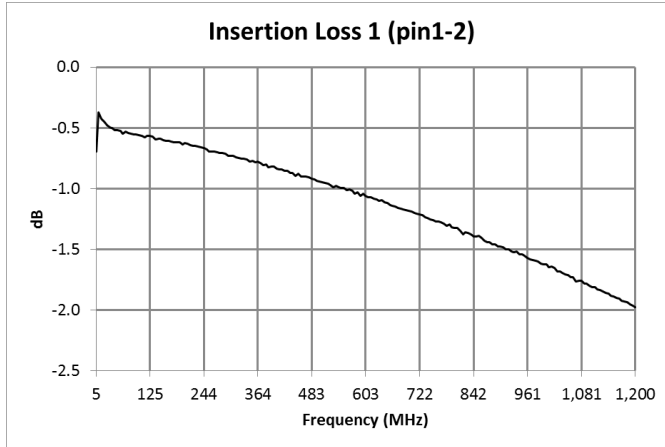
Parameter	Absolute Maximum
Input RF Power	250 mW
DC Current	600 mA
Operating Temperature	-40°C to +85°C

- 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.

Application Schematic

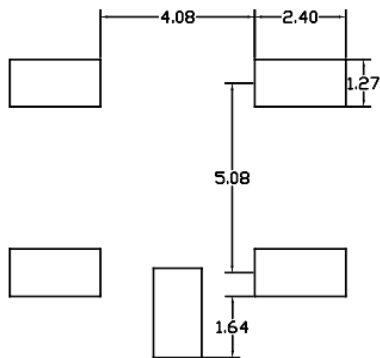
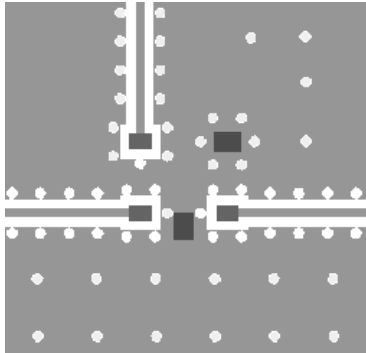


Typical Performance Curves⁶



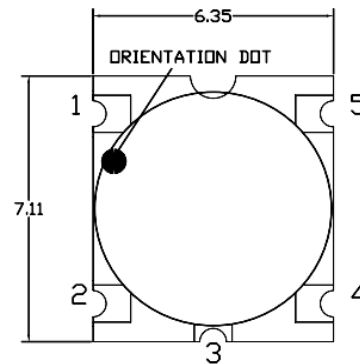
6. Full temperature plots available on request.

Recommended Board Layout⁷

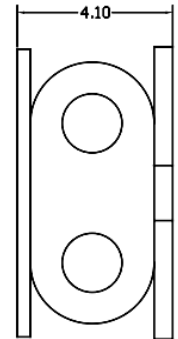


7. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

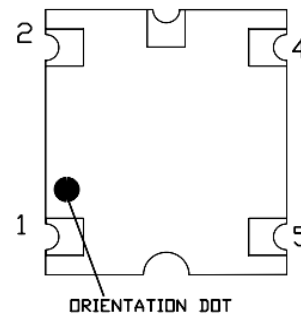
Outline Drawing^{8,9,10,11}



TOP VIEW



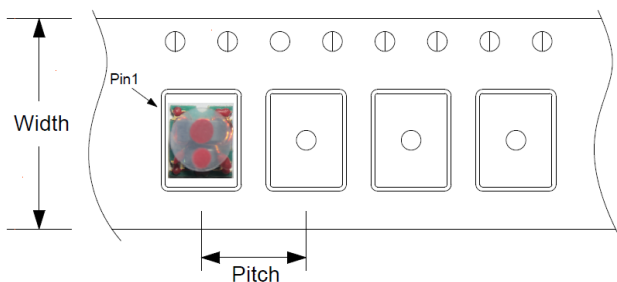
END VIEW



BOTTOM VIEW

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		

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