1:2 Transmission Line Balun
10 - 10000 MHz

MABA-011118
Rev. V4

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

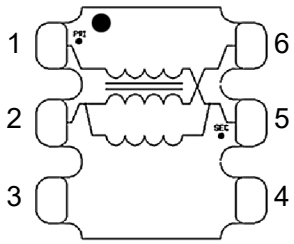
The MABA-011118 is a 1:2 balun transformer in a surface mount package. Ideally suited for 2G, 3G, 4G, LTE, WiFi, WiMax, wide band amplifiers, mixers & modulators

Ordering Information[1,2]

Part Number	Description
MABA-011118	500 piece reel
MABA-011118-TB	Customer test board

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

Functional Schematic



Pin Configuration[3]

Pin #	Function
1	Primary Dot (Input)
2	Primary (Ground)
3, 4	Not used (Ground)
5	Secondary Dot (Output 2)
6	Secondary (Output 1)

3. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 10 - 10000 MHz, T_A = +25°C, Z_0 = 50 Ω, P_{IN} = 0 dBm

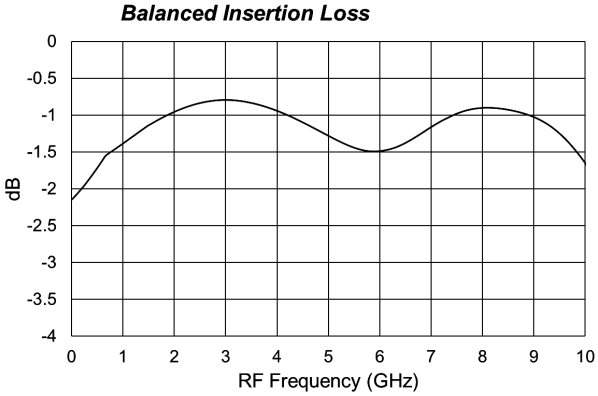
Parameter	Test Conditions Frequency (MHz)	Units	Min.	Typ.	Max.
Impedance Ratio	—	ratio	—	1:2	—
Balanced Insertion Loss	10 - 1000 1000 - 4000 4000 - 7000 7000 - 8500 8500 - 10000	dB	—	2.0 1.2 1.9 1.6 2.1	2.4 1.7 2.3 2.0 —
Amplitude Balance	10 - 2000 2000 - 4000 4000 - 8500 8500 - 10000	dB	—	0.3 1.0 1.5 0.6	±0.8 ±1.8 ±2.5 -
Phase Balance	10 - 2000 2000 - 7000 7000 - 8500 8500 - 10000	°	—	8 12 5 5	±15 ±16 ±10 —
Input Return Loss (Pin 1)	10 - 2000 2000 - 4000 4000 - 7000 7000 - 8500 8500 - 10000	dB	12 13 7 8 —	15 20 9 11 8	—
Output Return Loss (Pin 5-pin 6)	10 - 1000 1000 - 4000 4000 - 7000 7000 - 8500 8500 - 10000	dB	6 8 5 8 —	8 14 8 12 8	—

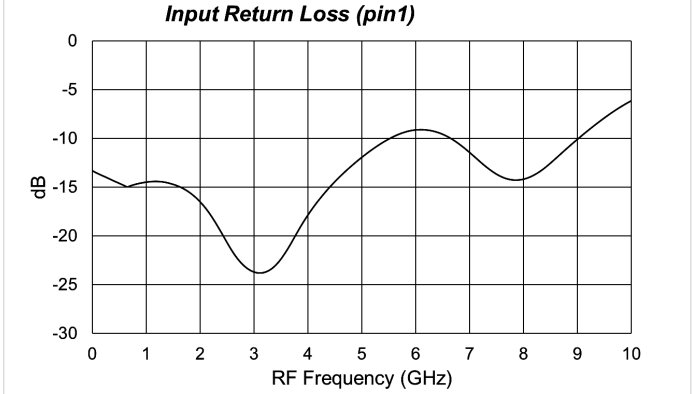
Absolute Maximum Ratings[4,5]

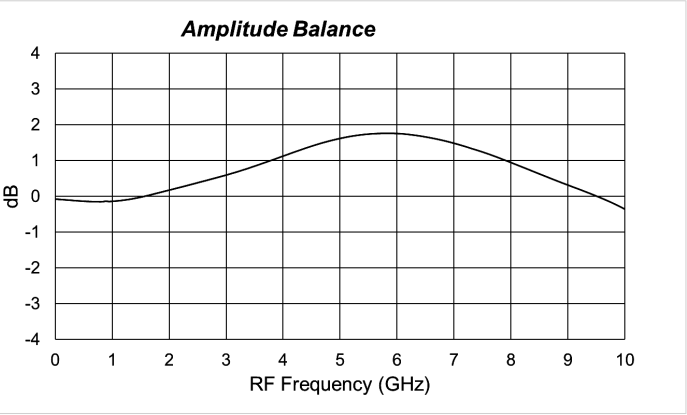
Parameter	Absolute Maximum
Input RF Power[6]	1 W
DC Current	1 A
Operating Temperature	-40°C to +125°C

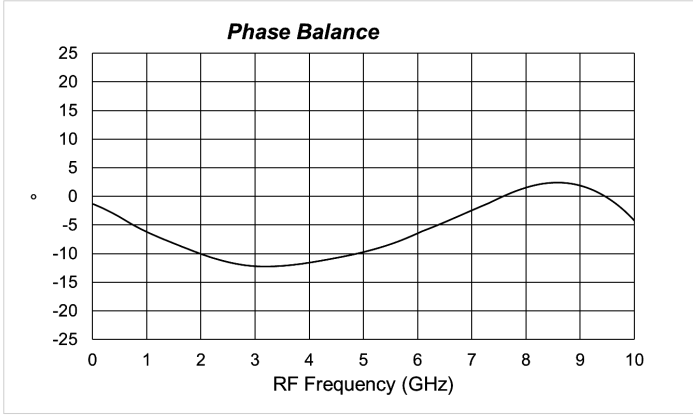
4. Exceeding any one or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.
6. Specified at +25C only.

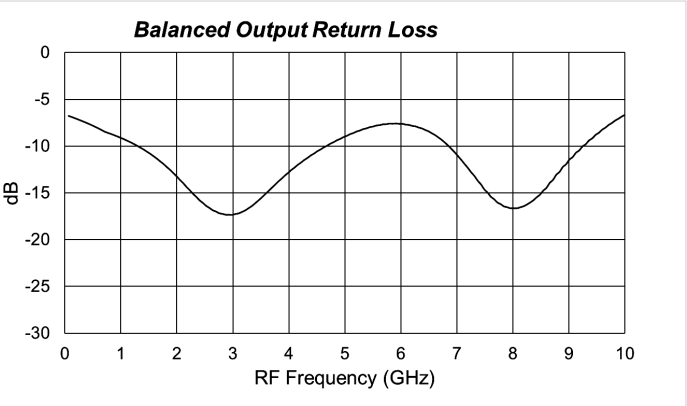
Typical Performance Curves[7]





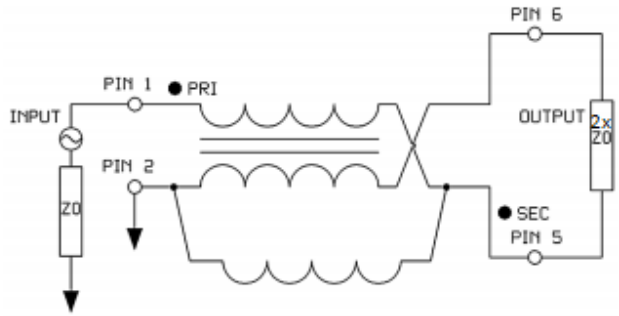




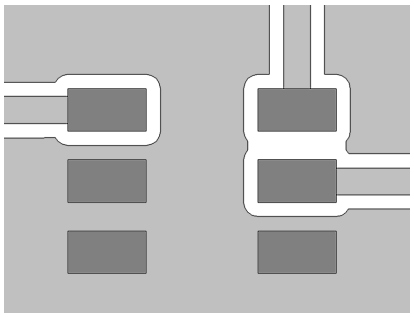


7. Temperature plots available on request.

Application Schematic

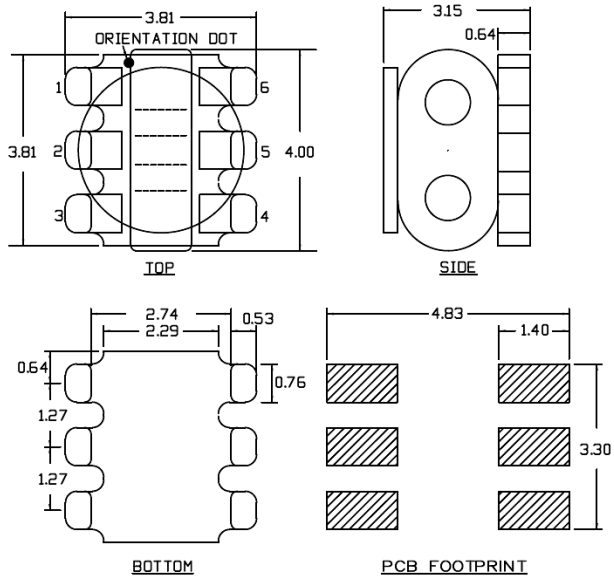


Recommended Board Layout[8,9]



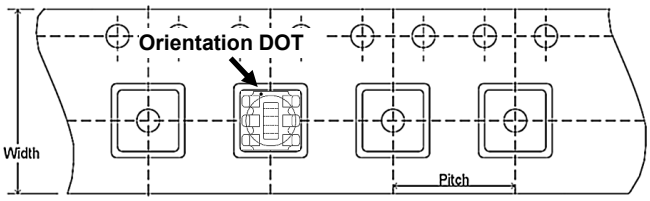
8. Recommended PCB layout shown above uses RogerRO4350B substrate, thickness 0.254 mm.
9. Grounded coplanar wave guide trace, width 0.48 mm and Gap 0.25 mm.

Outline Drawing[10,11,12,13]



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

Carrier Tape Orientation



Tape & Reel Information[14]

Parameter	Units	Value
Qty per Reel	-	500
Reel Size	mm	330
Tape Width	mm	12.00
Pitch	mm	8.00
Orientation	-	F33

14. Reference Application Note ANI-019 for orientation.

Mouser Electronics

Authorized Distributor

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MACOM:
MABA-011118