1:2 Transmission Line Balun
10 - 10,000 MHz

MABA-011118
Rev. V5

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

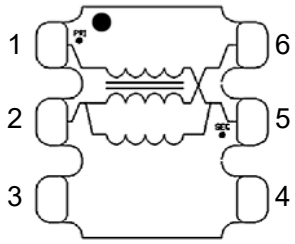
The MABA-011118 is a 1:2 balun transformer in a surface mount package. Ideally suited for 2G, 3G, 4G, LTE, WiFi, WiMax, wide band amplifiers, mixers & modulators

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.

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

MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

For further information and support please visit:
https://www.macom.com/support

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	9 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]

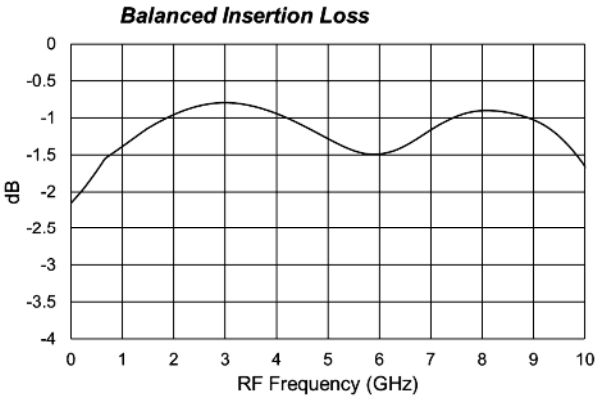
Parameter	Absolute Maximum
Input RF Power[6]	1 W
DC Current	1 A
Operating Temperature	-40°C to +125°C

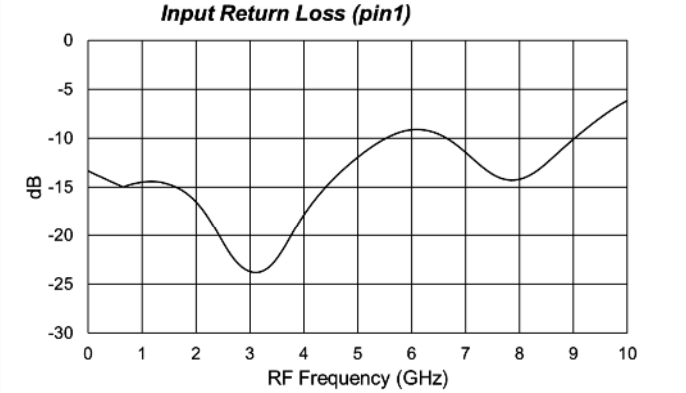
4. Exceeding any one or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.
6. Specified at +25C only.

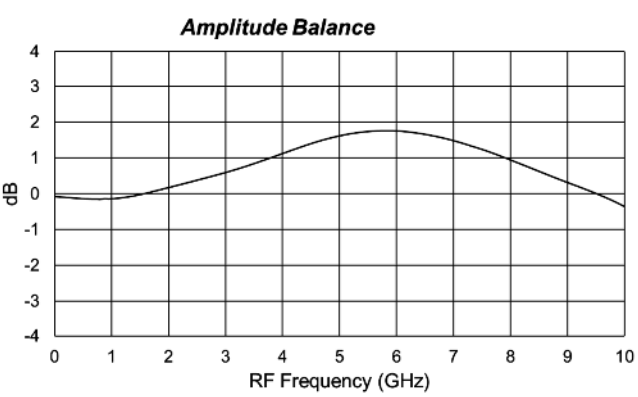
MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

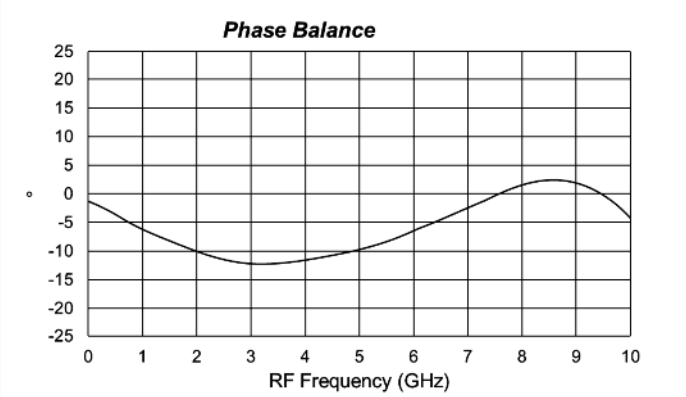
For further information and support please visit:
https://www.macom.com/support

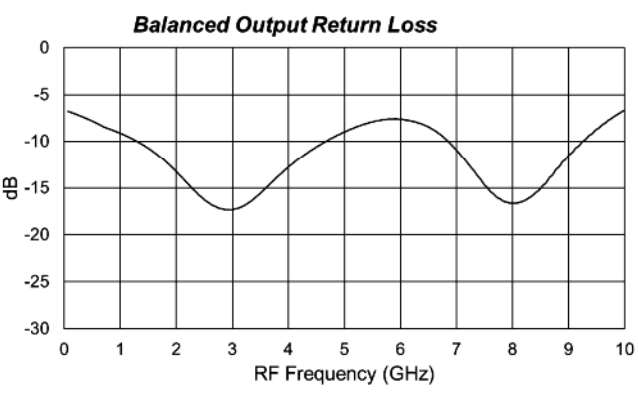
Typical Performance Curves[7]









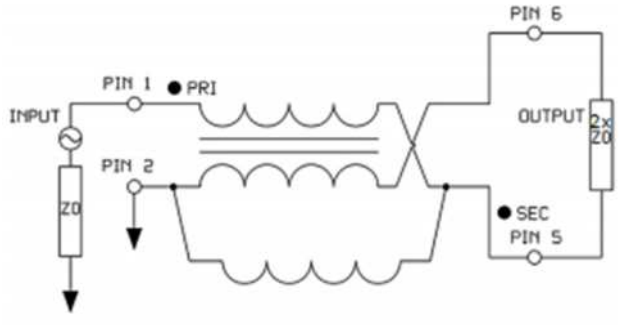


7. Temperature plots available on request.

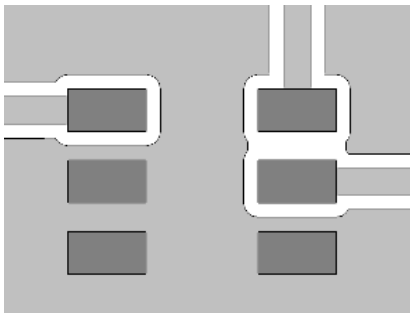
MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

For further information and support please visit:
https://www.macom.com/support

Application Schematic

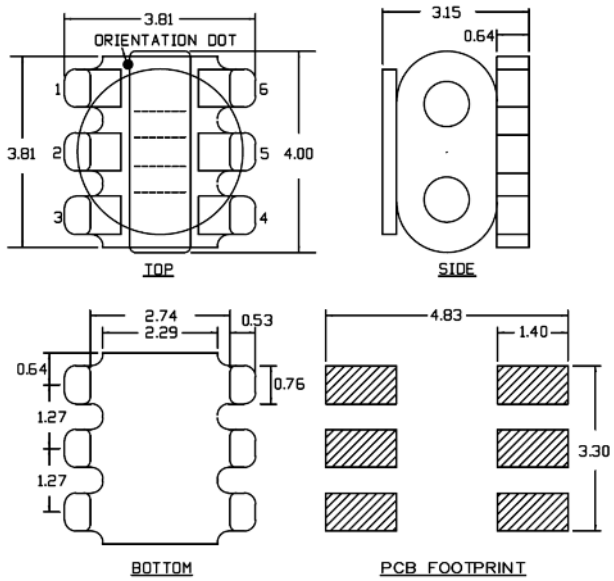


Recommended Board Layout[8,9]



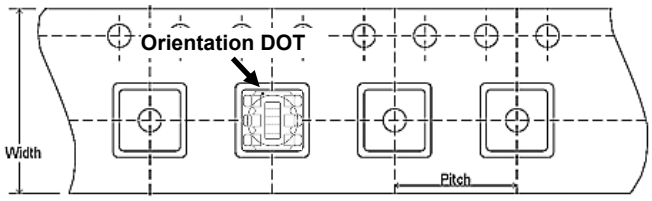
8. Recommended PCB layout shown above uses Roger RO4350B substrate, thickness 0.254 mm.
9. Grounded coplanar wave guide trace, width 0.48 mm and Gap 0.25 mm.

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.

MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

For further information and support please visit:
https://www.macom.com/support

MACOM Technology Solutions Inc. (“MACOM”). All rights reserved.
These materials are provided in connection with MACOM’s products as a service to its customers and may be used for informational purposes only. Except as provided in its Terms and Conditions of Sale or any separate agreement, MACOM assumes no liability or responsibility whatsoever, including for (i) errors or omissions in these materials; (ii) failure to update these materials; or (iii) conflicts or incompatibilities arising from future changes to specifications and product descriptions, which MACOM may make at any time, without notice. These materials grant no license, express or implied, to any intellectual property rights.

THESE MATERIALS ARE PROVIDED "AS IS" WITH NO WARRANTY OR LIABILITY, EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHT, ACCURACY OR COMPLETENESS, OR SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES WHICH MAY RESULT FROM USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.

MACOM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

For further information and support please visit:
https://www.macom.com/support