

# 1:1 Flux Coupled UnUn

## 5 - 700 MHz



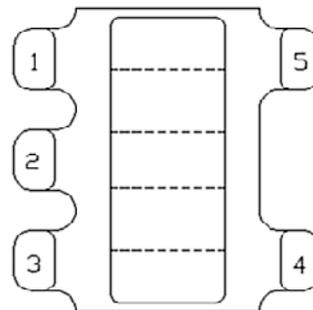
MABA-011157  
Rev. V2

### Features

- 1:1 Impedance
- Surface Mount Technology
- 0° & 180° Configuration
- Excellent Temperature Stability
- Available on Tape & Reel
- RoHS\* Compliant and Pb Free

### Applications

- Suitable for all CATV, Broadband and FTTX applications



### Description

The MABA-011157 is a 1:1 Flux coupled UnUn transformer.

### Electrical Specifications: (0° Configuration)

Freq. = 5 - 700 MHz,  $T_A = +25^\circ\text{C}$ ,  $P_{IN} = 0 \text{ dBm}$ ,  $Z_0 = 75 \Omega$

Parameter	Test Conditions Frequency (MHz)	Units	Min.	Typ.	Max.
Insertion Loss (pin 4 - pin 3)	5 - 100 100 - 700	dB	—	0.03 0.30	0.15 0.55
Phase Balance 0° to 180° (Relative to Ideal 180°C)	5 - 700	°	—	0.5	±9
Input Return Loss (pin 4)	5 - 100 100 - 700	dB	-20 -13	44 22	—
Output Return Loss (pin 3)	5 - 100 100 - 700	dB	-20 -15	44 25	—

### Electrical Specifications: 180° Configuration

Freq. = 5 - 700 MHz,  $T_A = +25^\circ\text{C}$ ,  $P_{IN} = 0 \text{ dBm}$ ,  $Z_0 = 75 \Omega$

Parameter	Test Conditions Frequency (MHz)	Units	Min.	Typ.	Max.
Insertion Loss (pin 4 - pin 1)	5 - 100 100 - 700	dB	—	0.45 0.55	0.52 0.75
Phase Balance 0° to 180° (Relative to Ideal 180°C)	5 - 700	°	—	0.5	±9
Input Return Loss (pin 4)	5 - 100 100 - 700	dB	-20 -12	26 27	—
Output Return Loss (pin 1)	5 - 100 100 - 700	dB	-20 -13	26 18	—

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

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## Ordering Information<sup>1,2</sup>

Part Number	Package
MABA-011157	2000 piece reel
MABA-011157-TB0	0° Sample Board
MABA-011157-TB1	180° Sample Board

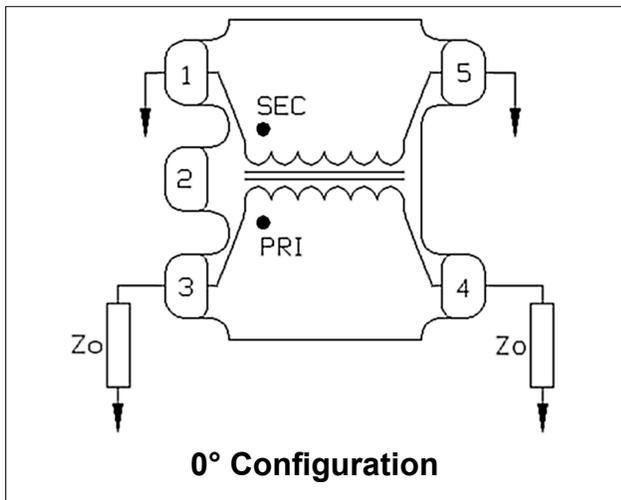
1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

## Recommended Maximum Ratings<sup>5,6</sup>

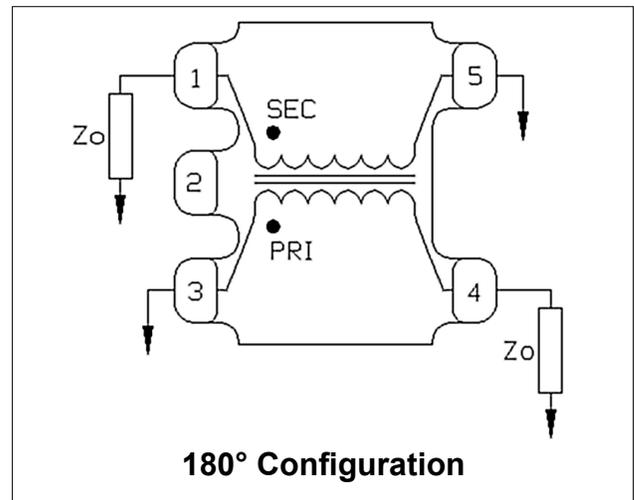
Parameter	Units
Input Power	TBD
Operating Temperature	-40°C to +85°C

5. Exceeding any one or combination of these limits may cause permanent damage to this device.
6. MACOM does not recommend sustained operation near these survivability limits.

## Functional Schematics<sup>3,4</sup>:



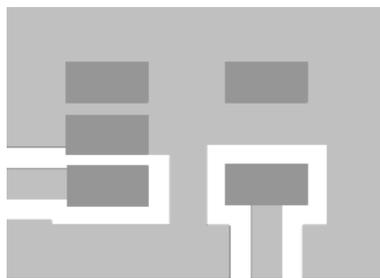
Pin #	Function	Pin #	Function
1, 5	Ground	3	Output
2	Not Connected	4	Input



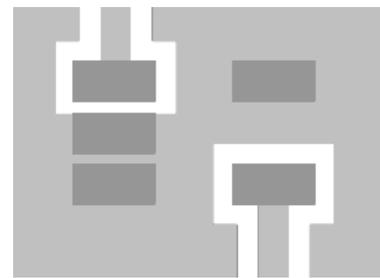
Pin #	Function	Pin #	Function
1	Output	3,5	Ground
2	Not Connected	4	Input

3. MACOM recommends connecting unused package pins to ground.
4. The exposed pad centered on the package bottom must be connected to RF, DC and thermal ground.

## Recommended PCB Footprints:



**0° Configuration**



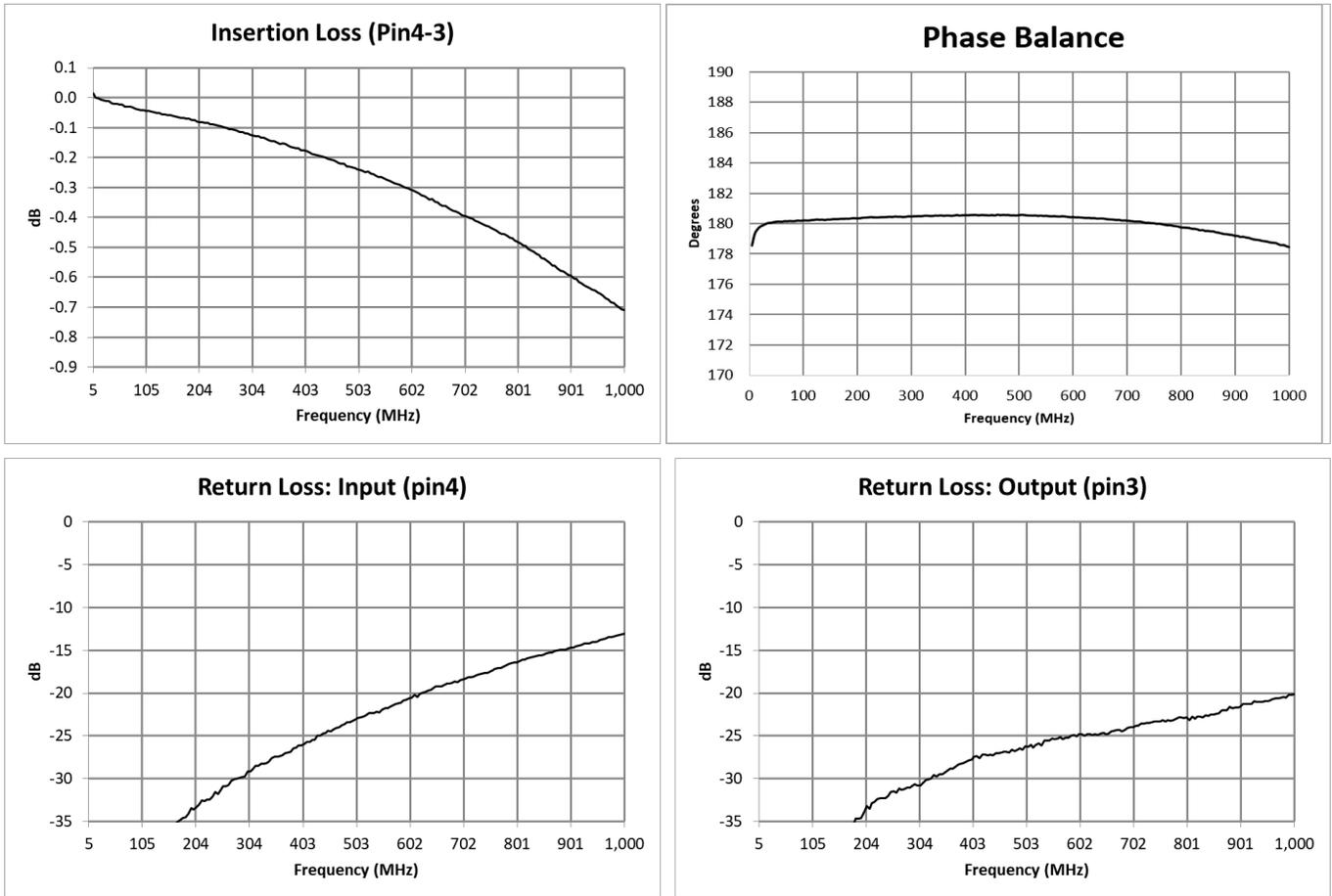
**180° Configuration**

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## Typical Performance Curves: (0° Configuration)

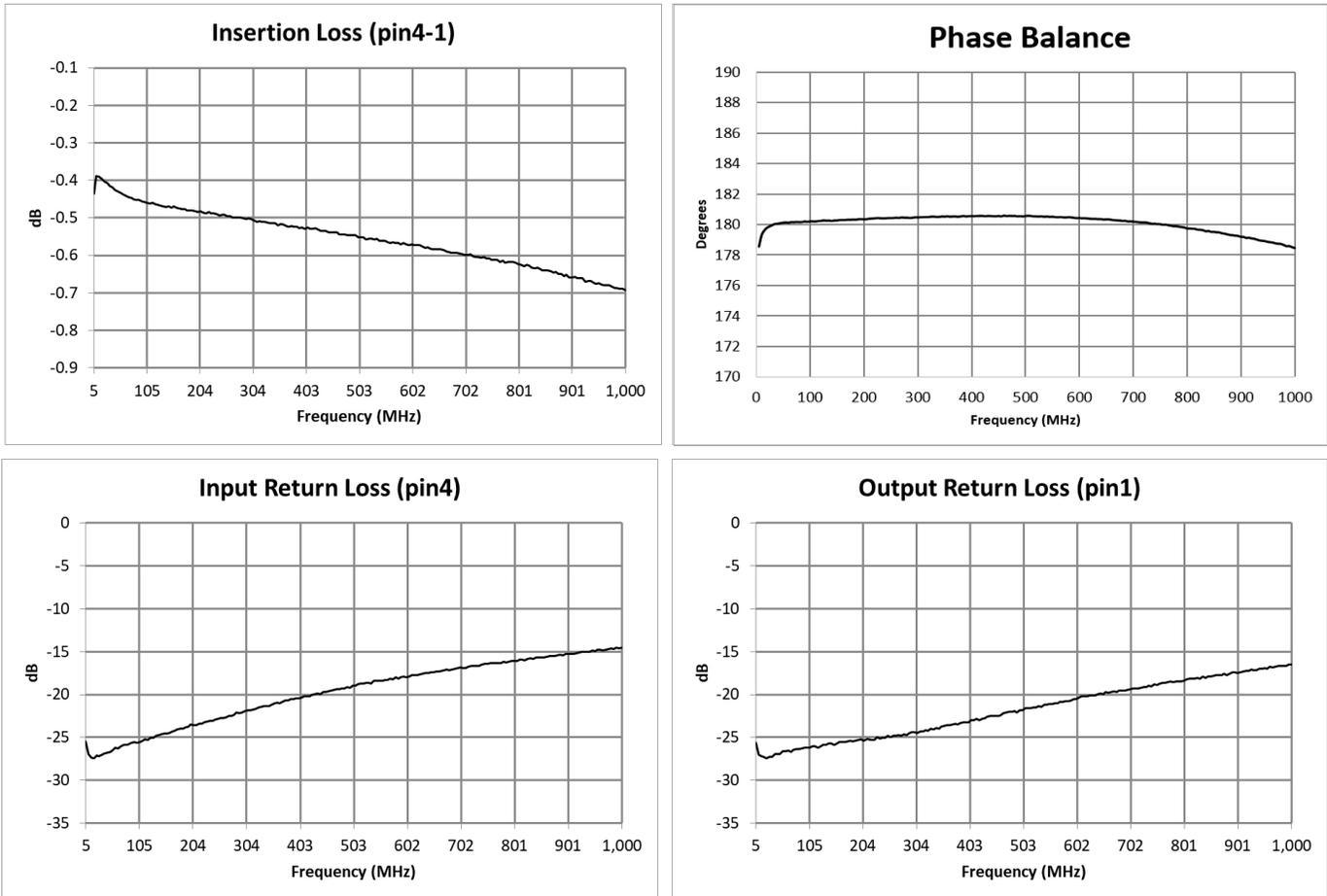


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## Typical Performance Curves: (180° Configuration)

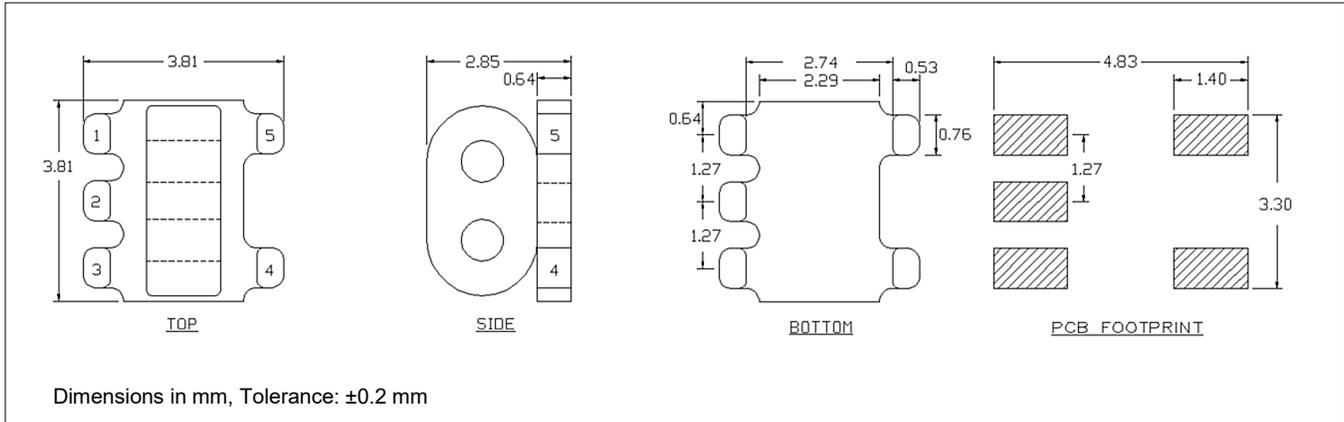


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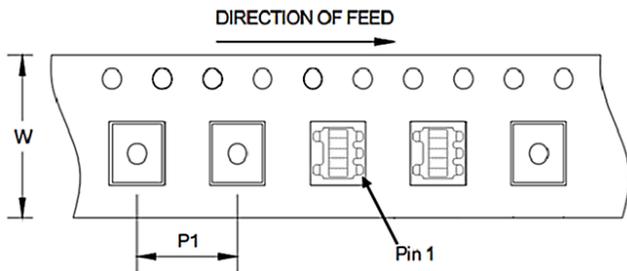
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## Outline Drawing†



† Reference Application Note J-STD-020E for lead-free solder reflow recommendations.  
Meets JEDEC moisture sensitivity level 1 requirements.  
Lead plating: ENIG.

## Carrier Tape Orientation



## Tape & Reel Information<sup>7</sup>

Parameter	Units	Value
Qty per reel	-	2000
Reel Size	mm	330
Tape Width	mm	12.00
Pitch	mm	8.00
Orientation	-	F5
Reference Application Note ANI-019 for orientation		

7. Model number and lot code are printed on the reel.

## Revision History

Rev	Date	Change Description
V1	2023-June-12	Production Release V1, Correct the orientation from F31 to F5
V2	2024-Mar-21	Correct schematic on sheet 2

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