

# MABA-009487-60HWCA



E-Series Transformer, RF 1:1  
0.4 – 500 MHz

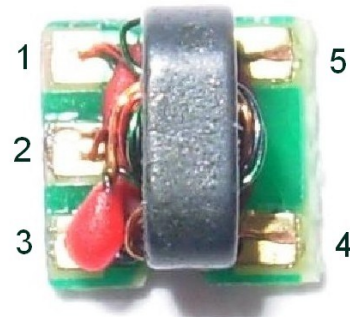
Rev. V5

## Features

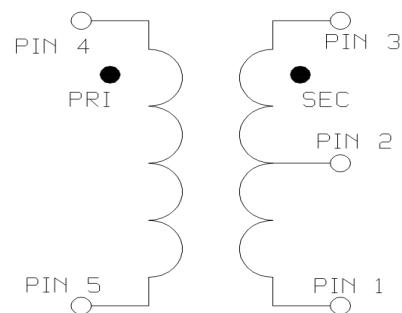
- Surface mount
- 1:1 Impedance ratio
- Centre tap on secondary
- RoHS compliant \*
- 260°C reflow compatible
- Available on tape and reel

## Description

MACOM's MABA-009487-60HWCA is a 1:1 RF flux coupled transformer in a low cost surface mount package. Ideally suited for high volume cellular and wireless applications. Typical applications include single to balanced mode conversion and impedance matching. MABA-009487-60HWCA transformer is designed to be utilized in both standard and high temperature soldering reflow profiles.



## Functional Schematic



## Ordering Information

Part Number	Package
MABA-009487-60HWCA	Tape & Reel

## Pin Configuration

Pin No.	Function
1	Secondary
2	Secondary Centre Tap
3	Secondary Dot
4	Primary Dot
5	Primary

\* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU

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Electrical Specifications:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 50 \Omega$ ,  $P_{in} = 0\text{dBm}$

Parameter	Conditions	Units	Min	Typ	Max
Frequency Range		MHz	0.4		500
Impedance		$\Omega$		50	
Impedance Ratio				1:1	
Insertion Loss	0.4 - 200 MHz	dB	-	0.2	0.6
	200 - 400 MHz	dB	-	1.2	2.0
	400 - 500 MHz	dB	-	2.3	3.0
Amplitude Balance	0.4 - 500 MHz	dB	-	0.5	$\pm 2.0$
Phase Balance	0.4 - 500 MHz	$^\circ$	-	1.0	$\pm 3.0$
Input Return Loss	2 - 100 MHz	dB	20	26	-
	0.4 - 200 MHz	dB	13	20	-
	200 - 500 MHz	dB	9	10	-

## Recommended Maximum Ratings

Parameter	Units	Min	Max
Input RF Power	mW		250
DC Current	mA		240
Operating Temperature Range	$^\circ\text{C}$	-40	+85

Full temperature plots available on request

## Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	2000
Reel size	mm	330
Tape width (W)	mm	12.00
Pitch ( $P_1$ )	mm	8.00
$A_0$	mm	4.0
$B_0$	mm	4.0
$K_0$	mm	2.9
Orientation	-	F31
Reference Application note ANI-019 for orientation		

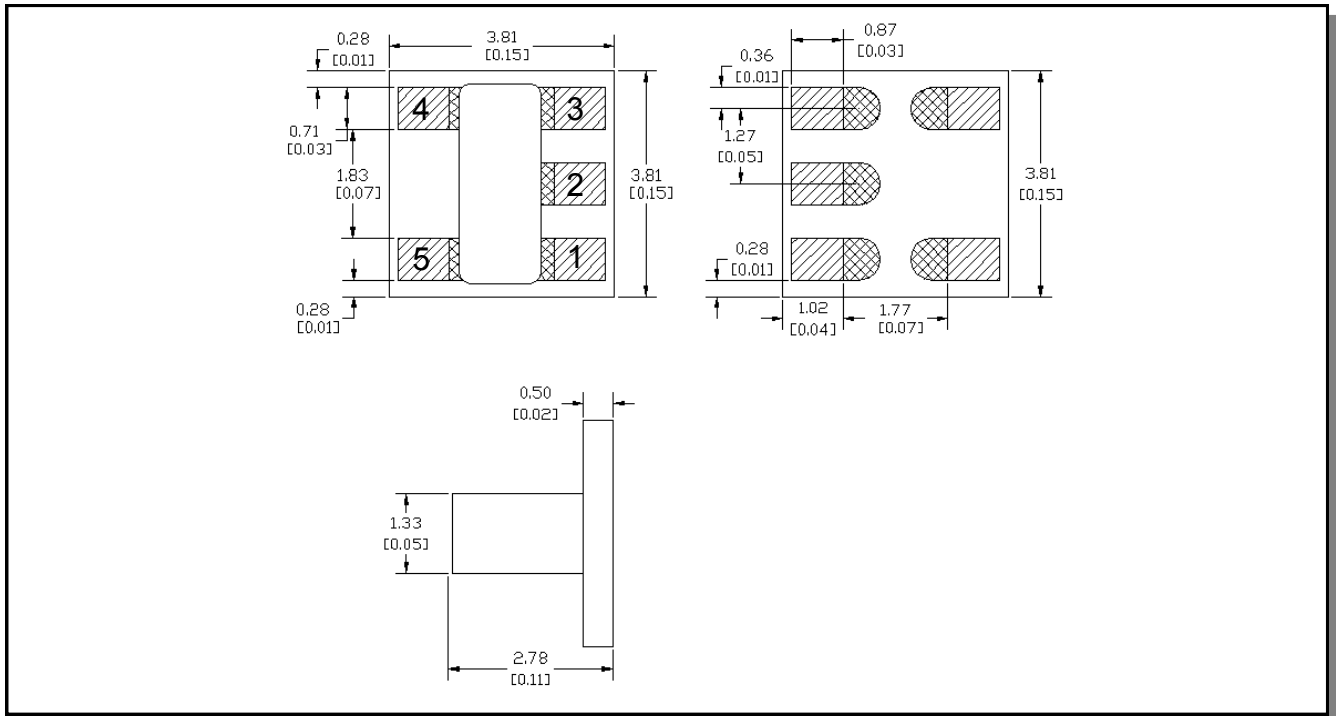
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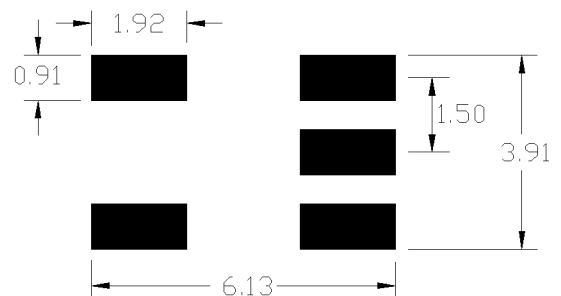
Rev. V5

## Outline Drawing



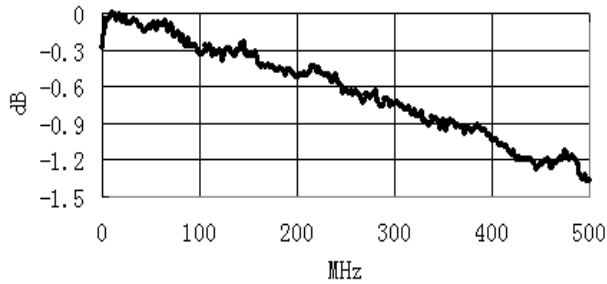
1. Dimensions in mm.
2. Tolerance:  $\pm 0.2$ mm unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Plating finish: ENIG

## PCB Layout

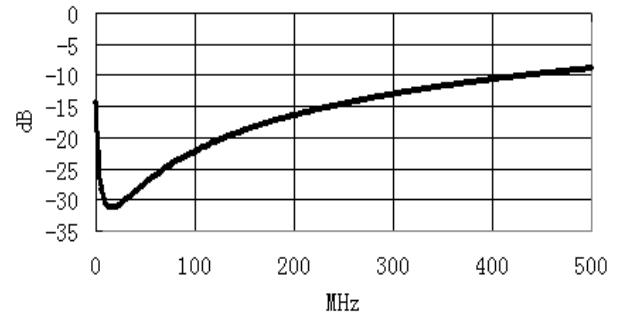


## Typical Performance Curves

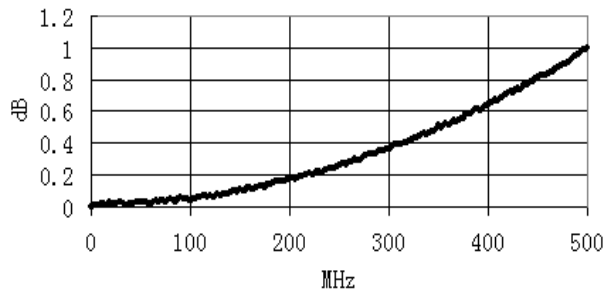
**Insertion Loss**



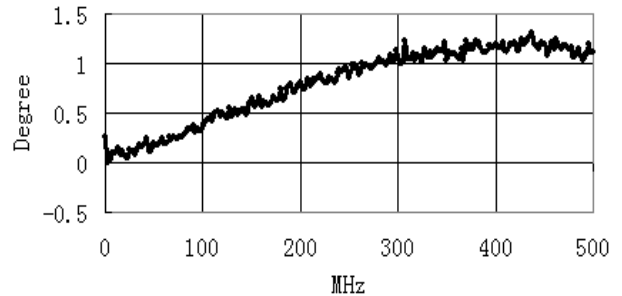
**Input Return Loss**



**Amplitude Unbalance**



**Phase Unbalance**



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