

# MABA-011002

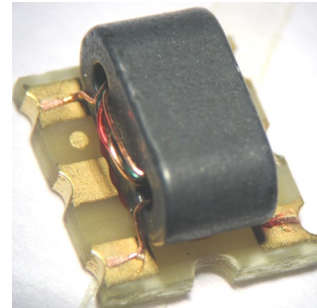


## 4:1 Step Down Balun Transformer 5 – 200 MHz

Rev. V2

### Features

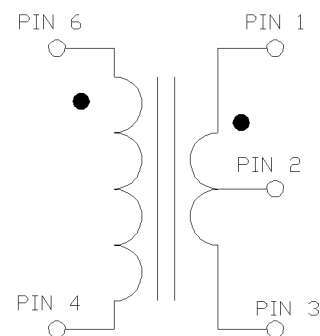
- Surface Mount
- 4:1 Step Down Transformer
- Excellent performance under DC bias current, also when current flows is imbalanced through outputs
- 260°C Reflow Compatible
- RoHS\* Compliant, lead free
- Available on Tape and Reel.



### Description

MACOM's MABA-011002 is a 4:1 transformer. This transformer is ideally suited for CATV Broadband applications.

### Functional Schematic



### Ordering Information

Part Number	Description
MABA-011002	Tape & Reel
MABA-011002-TB	Customer Evaluation Board

### Pin Configuration

Pin No.	Function
1	Secondary Dot (output1)
2	Ground (center tap)
3	Secondary (output2)
4	Primary (RF ground)
5	Ground (not used)
6	Primary dot (input)

## 4:1 Step Down Balun Transformer 5 – 200 MHz

Rev. V2

Electrical Specifications:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75 \Omega$ ,  $P_{in} = 0\text{dBm}$

Parameter	Conditions	Units	Min	Typ	Max
Insertion Loss 1 (pin6-pin1)	5 - 50 MHz	dB	-	0.4	0.8
	50 - 150 MHz	dB	-	1.0	2.2
	150 - 200 MHz	dB	-	2.0	3.1
Insertion Loss 2 (pin6-pin3)	5 - 50 MHz	dB	-	0.4	0.8
	50 - 150 MHz	dB	-	1.1	2.5
	150 - 200 MHz	dB	-	2.4	3.6
Amplitude Balance	5 - 50 MHz	dB	-	0.0	$\pm 0.4$
	50 - 150 MHz	dB	-	0.0	$\pm 1.0$
	150 - 200 MHz	dB	-	0.3	$\pm 1.4$
Phase Balance	5 - 50 MHz	$^\circ$	-	0.6	$\pm 4$
	50 - 200 MHz	$^\circ$	-	0.8	$\pm 9$
Input Return Loss (pin6)	5 - 25 MHz	dB	17	20	-
	25 - 50 MHz	dB	12	15	-
	50 - 150 MHz	dB	5	9	-
	150 - 200 MHz	dB	3	5	-

## Recommended Maximum Ratings

Parameter	Units	Min	Max
Input Power	W		1
Internal Load Dissipation	W		0.125
Tested up to DC bias current, will perform above this level	mA		900
Operating Temperature Range	$^\circ\text{C}$	-40	+85

Full temperature plots available on request

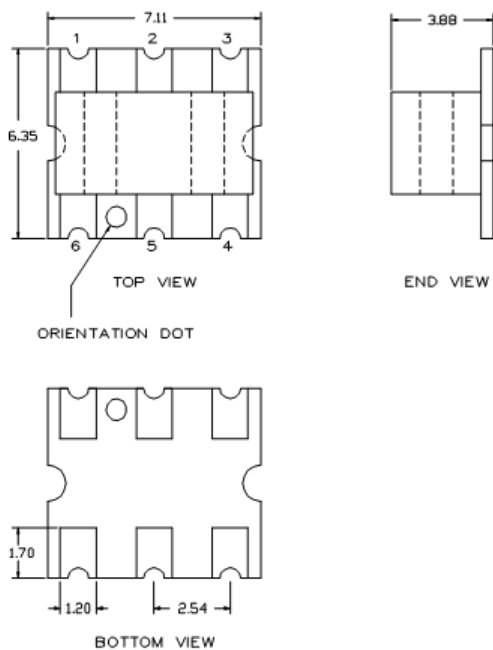
# MABA-011002



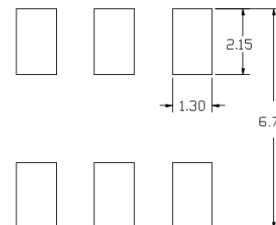
## 4:1 Step Down Balun Transformer 5 – 200 MHz

Rev. V2

### Outline Drawing

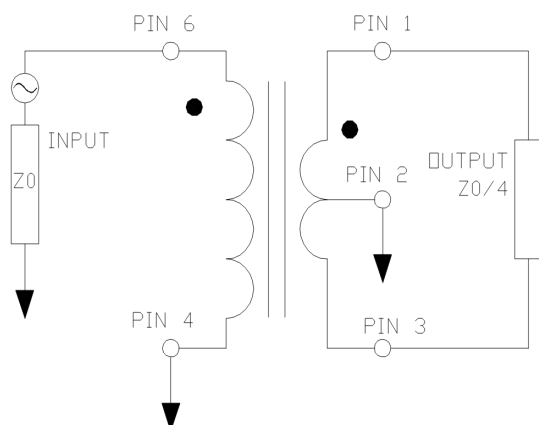


### PCB Layout



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. Lead plating: ENIG.

### Application Circuit



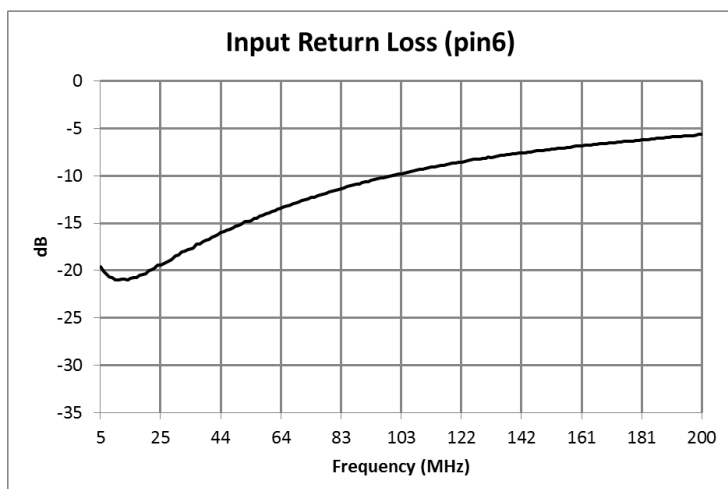
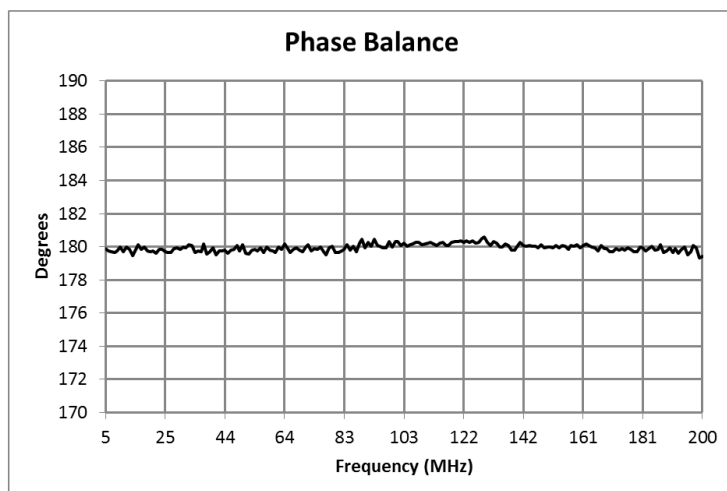
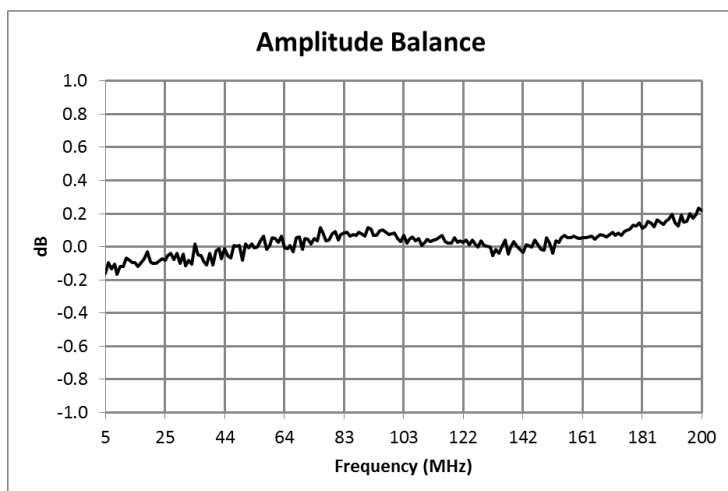
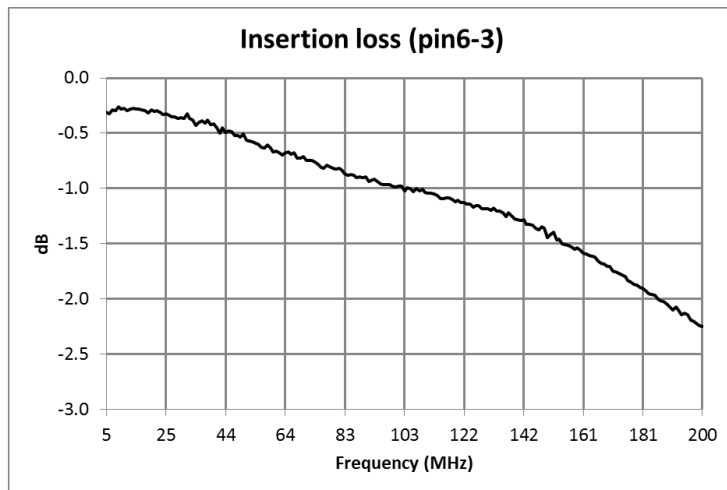
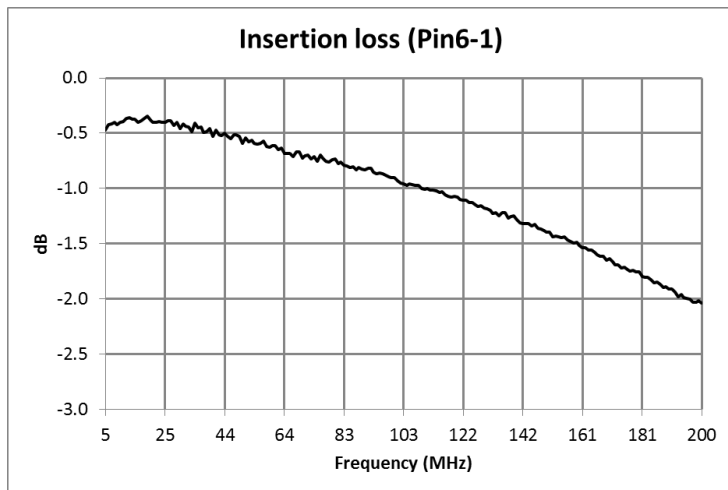
### Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	900
Reel Size	mm	330
Tape Width	mm	16.00
Pitch	mm	12.00
Ao	mm	6.60
Bo	mm	7.40
Ko	mm	4.10
Orientation	-	F38
Reference Application Note ANI-019 for orientation		

## 4:1 Step Down Balun Transformer 5 – 200 MHz

Rev. V2

### Typical Performance Curves



**Electrical Specifications:**  
 $Z_0 = 75\Omega$ ,  $T_A = 25^\circ\text{C}$ ,  $P_{in} = 0\text{dBm}$