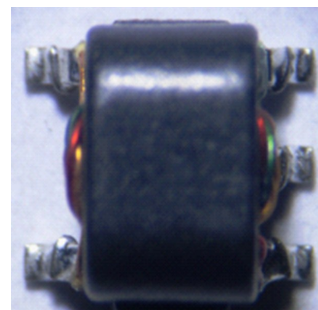


Balun transformer, 4:1 step down flux coupled 5 – 300 MHz

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Features

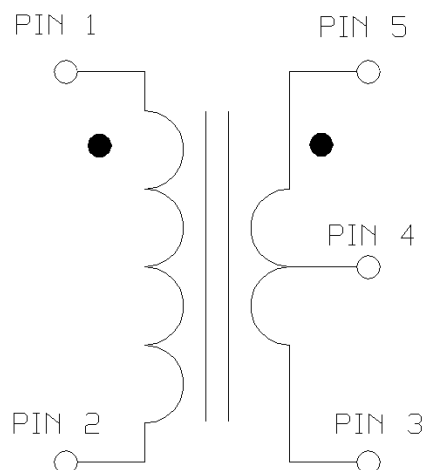
- 4:1 impedance
- Surface mount
- Available on tape and reel
- 260° reflow compatible
- RoHS compliant and Pb free
- Excellent temperature stability
- Suitable for all CATV, Broadband and FTTX applications



Description

MACOM's MABA-011064 is a 4:1 flux coupled transformer. This transformer is ideally suited for DOCSIS 3.x upstream applications due to its high power and temperature performance.

Functional Schematic



Ordering Information

Part Number	Package
MABA-011064	Tape & Reel
MABA-011064-TB	Customer Test Board

Pin Configuration

Pin No.	Function
1	Primary Dot (input)
2	Primary (ground)
3	Secondary (output2)
4	Center tap (ground)
5	Secondary Dot (output1)

Balun transformer, 4:1 step down flux coupled 5 – 300 MHz

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

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Frequency Range		MHz	5		300
Impedance		Ω		75	
Impedance Ratio				4:1	
Insertion Loss 1 (Pin1 - Pin5)	5 - 50 MHz	dB	-	0.4	0.7
	50 - 150 MHz	dB	-	0.9	2.0
	150 - 300 MHz	dB	-	2.2	4.5
Insertion Loss 2 (Pin1 - Pin3)	5 - 50 MHz	dB	-	0.5	0.9
	50 - 150 MHz	dB	-	1.1	2.2
	150 - 300 MHz	dB	-	2.8	4.9
Amplitude Balance	5 - 50 MHz	dB	-	0.1	± 0.5
	50 - 150 MHz	dB	-	0.2	± 0.8
	150 - 300 MHz	dB	-	0.5	± 1.6
Phase Balance (ref value 180°)	5 - 50 MHz	$^\circ$	-	0.8	± 3.0
	50 - 150 MHz	$^\circ$	-	2.4	± 7.0
	150 - 300 MHz	$^\circ$	-	3.5	± 10.0
Input Return Loss (Pin1)	5 - 50 MHz	dB	14	21	-
	50 - 150 MHz	dB	7	12	-
	150 - 300 MHz	dB	3	7	-

Recommended Maximum Ratings

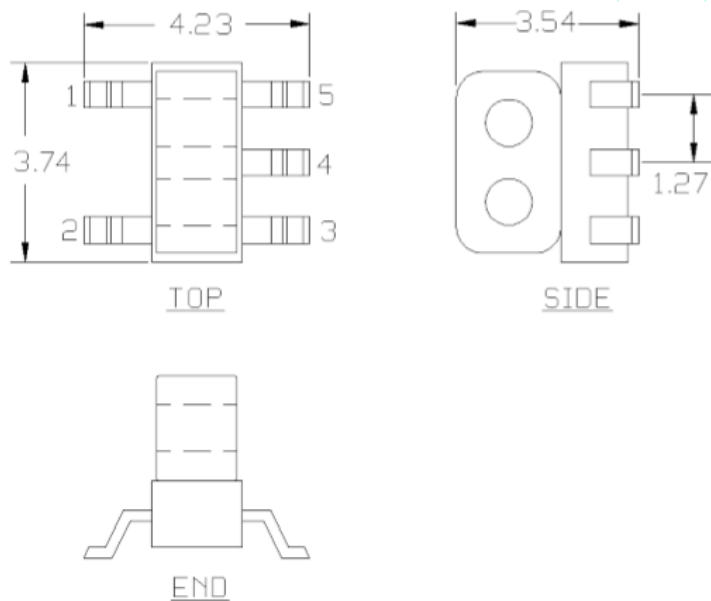
Parameter	Units	Min	Max
Input Power	mW		2000
DC Current	mA		1500
Operating Temperature Range	$^\circ\text{C}$	-40	+125

Full temperature plots available on request

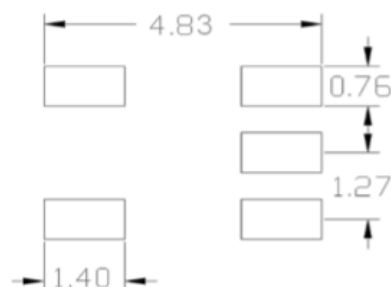
Balun transformer, 4:1 step down flux coupled 5 – 300 MHz

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Outline Drawing

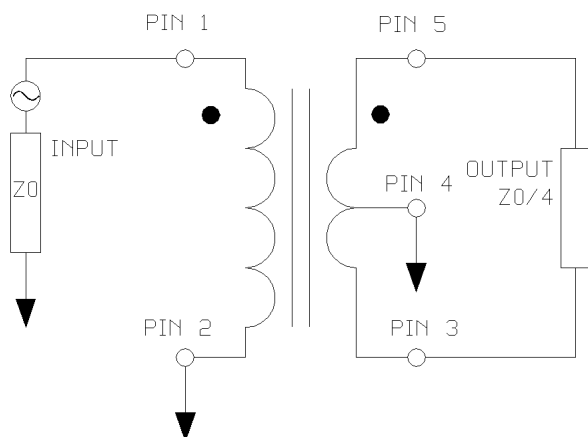


PCB Layout



1. Dimensions in mm.
2. Tolerance: ± 0.2 mm unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Lead plating (CuSn6) Lead finish SAC-305.

Application Schematic



Tape & Reel Information

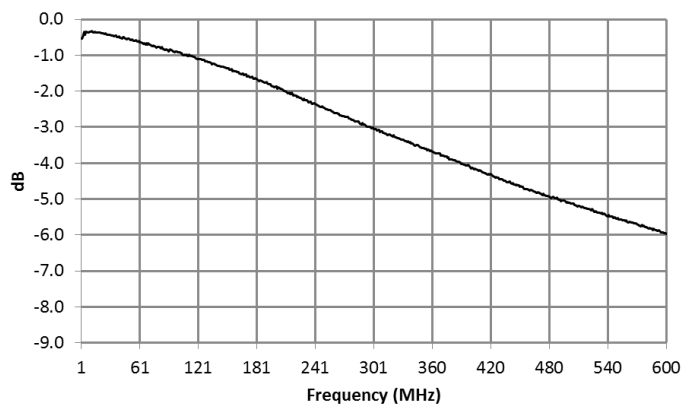
Parameter	Units	Value
Qty per reel	-	2000
Reel Size	mm	330
Tape Width	mm	12.00
Pitch	mm	8.00
Ao	mm	4.40
Bo	mm	4.00
Ko	mm	3.90
Orientation	-	F26
Reference Application Note ANI-019 for orientation		

Balun transformer, 4:1 step down flux coupled 5 – 300 MHz

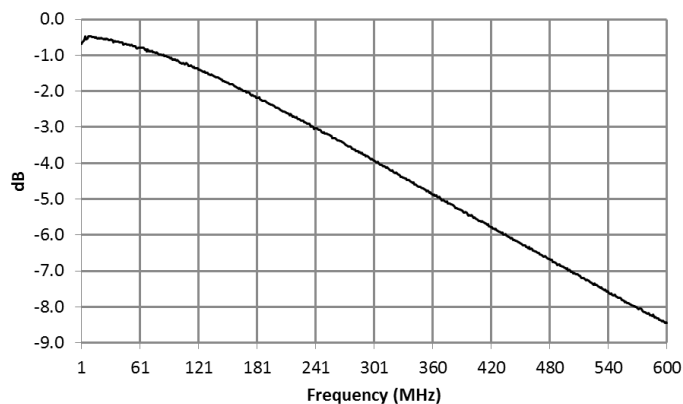
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Typical Performance Curves

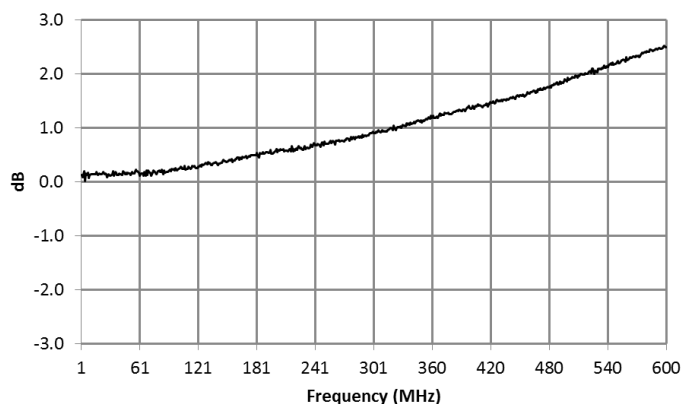
Insertion Loss (pin1-5)



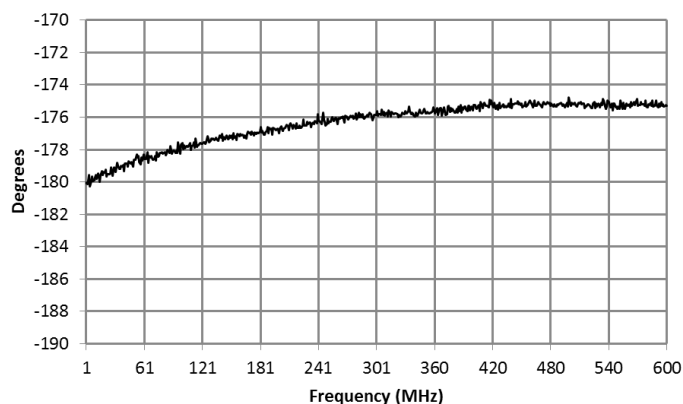
Insertion Loss (pin1-3)



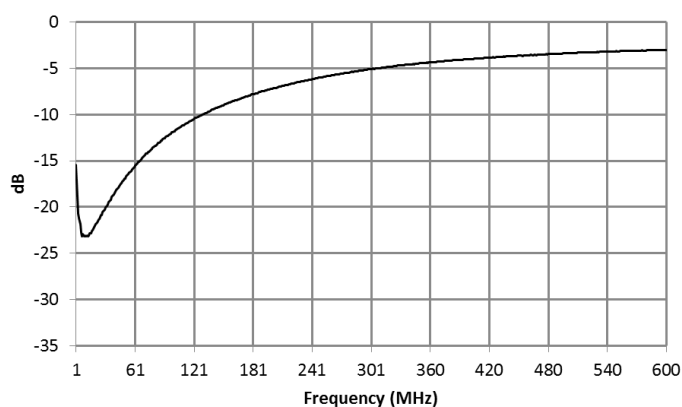
Amplitude Balance



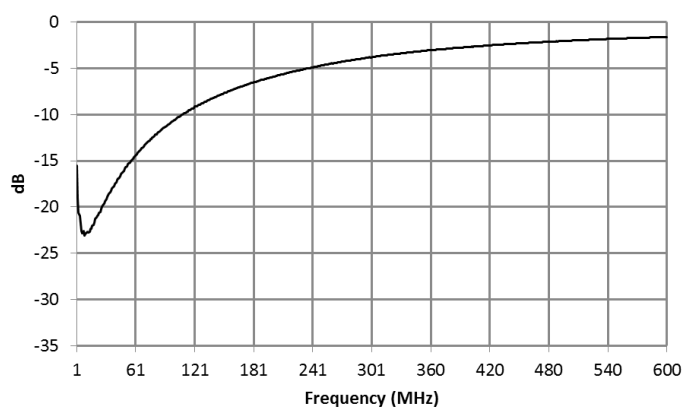
Phase Balance



Input Return Loss (pin1)



Balanced Output Return Loss



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

Balun transformer, 4:1 step down flux coupled 5 – 300 MHz

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