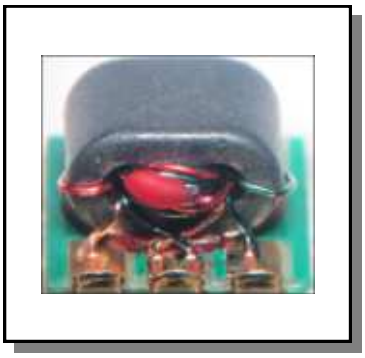
MABA-009852-CF1A40

1:1 Flux Coupled Balun Transformer
5 - 300 MHz

Rev. V7

Features

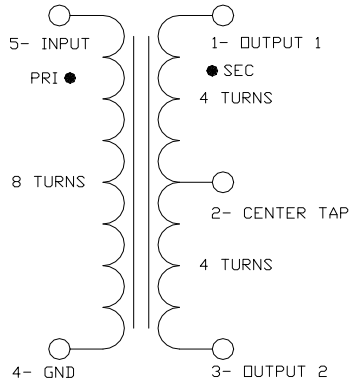
- 1:1 impedance
- Surface mount
- Available on tape and reel
- 260º reflow compatible
- RoHS Compliant and Pb free
- Excellent temperature stability
- Suitable for all CATV, Broadband and FTTX applications



Description

MACOM's MABA-009852-CF1A40 is a 1:1 Flux coupled transformer. This Transformer is ideally suited for CATV and Broadband applications.

Functional Schematic



Ordering Information

Part Number	Description
MABA-009852-CF1A40	Tape & Reel
MABA-009852-CF1ATB	Customer Test Board

Pin Configuration

Function	Pin Number
Secondary Dot (Output 1)	1
Secondary Centre Tap	2
Secondary (Output 2)	3
Primary (Ground)	4
Primary Dot (Input)	5

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1:1 Flux Coupled Balun Transformer
5 - 300 MHz

Electrical Specifications: T_A = 25°C, 0dBm, Z_0 = 75Ω

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Frequency Range		MHz	5		300
Insertion Loss 1 (Pin 5 - Pin 1)	5 – 75 MHz 75 – 120 MHz 120 – 204 MHz 204 – 300 MHz	dB dB dB dB	– – – –	0.1 0.3 0.63 1.0	0.4 0.6 0.8 1.2
Insertion Loss 2 (Pin 5 - Pin 3)	5 – 75 MHz 75 – 120 MHz 120 – 204 MHz 204 – 300 MHz	dB dB dB dB	– – – –	0.26 0.30 0.31 0.32	0.4 0.5 0.6 0.6
Amplitude Balance	5 – 75 MHz 75 – 120 MHz 120 – 204 MHz 204 – 300 MHz	dB dB dB dB	– – – –	0.03 0.12 0.30 0.70	0.17 0.38 0.50 1.00
Phase Balance (Nominal phase difference is 180 degrees)	5 – 75 MHz 75 – 120 MHz 120 – 204 MHz 204 – 300 MHz	° ° ° °	– – – –	0.05 0.10 1.53 3.0	2.0 3.0 3.9 6.1
Input Return Loss (Pin 5)	5 – 20 MHz 20 – 75 MHz 75 – 120 MHz 120 – 204 MHz 204 – 300 MHz	dB dB dB dB dB	25 20 15 15 12	30 28 19 20 17	– – – – –

Recommended Maximum Ratings

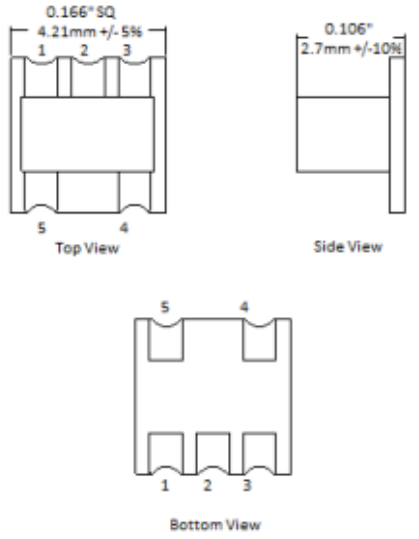
Parameter	Units	Min	Max
Input Power	W		0.5
DC Current	mA		500
Operating Temperature Range	ºC	-40	+100

Full temperature plots available on request

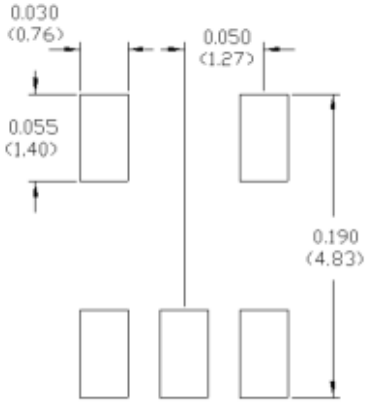
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Outline Drawing

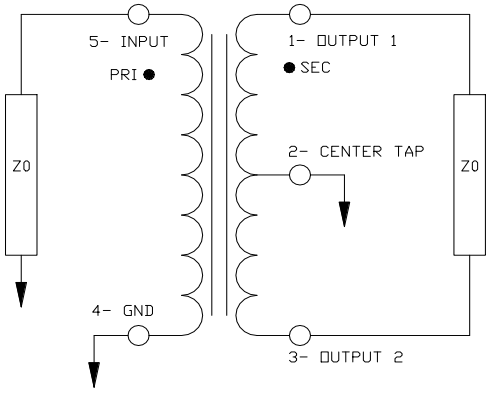


PCB Layout



1. Dimensions in mm.
2. Tolerance: ±0.2mm unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Lead plating: ENIG.

Application Circuit



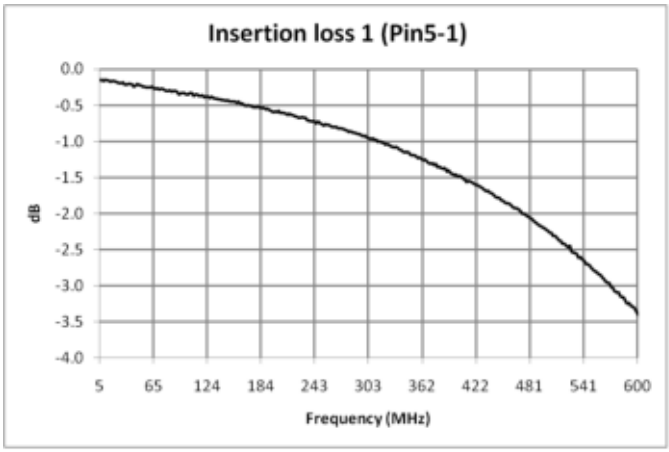
Tape & Reel Information

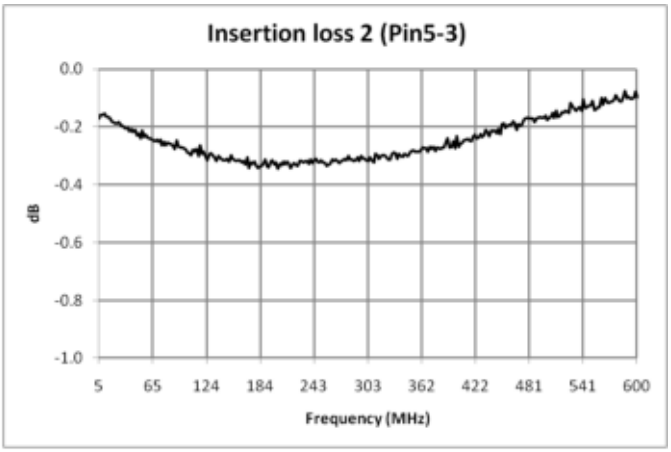
Parameter	Units	Value
Qty per reel	-	2000
Reel Size	mm	330
Tape Width	mm	12.00
Pitch	mm	8.00
Ao	mm	4.50
Bo	mm	4.50
Ko	mm	2.73
Orientation	-	F31
Reference Application Note ANI-019 for orientation		

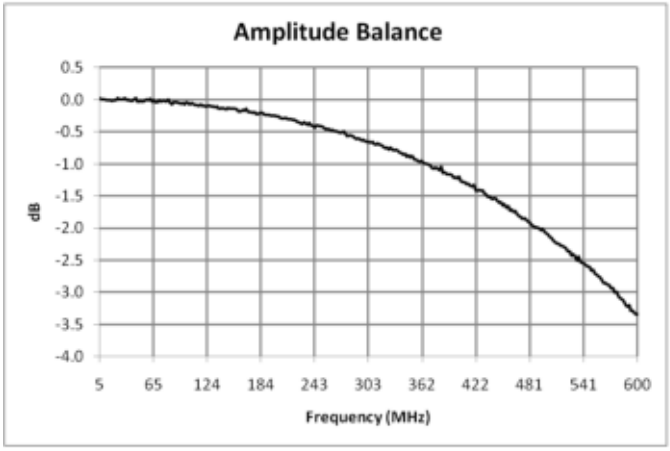
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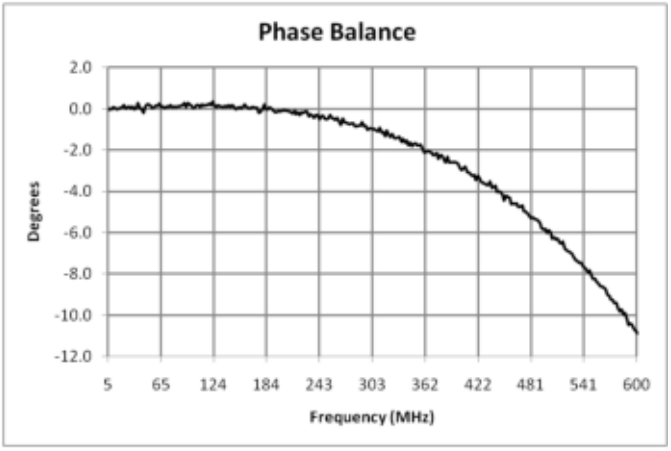
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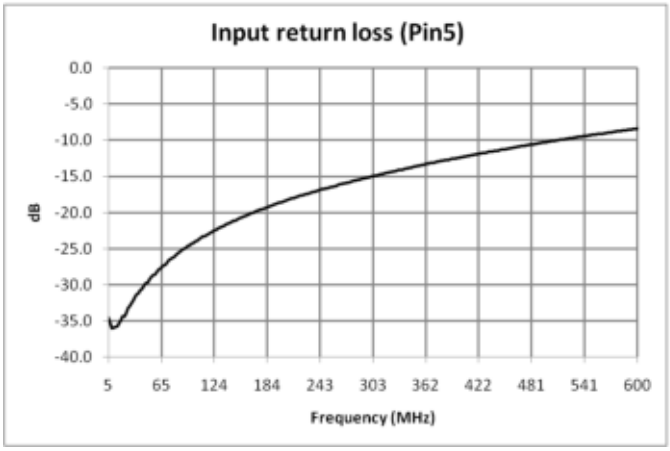
1:1 Flux Coupled Balun Transformer
5 - 300 MHz











Electrical Specifications: Z_0 = 75Ω, T_A = 25°C, P_{in} = 0dBm

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Electrical Specifications(unun performance): T_A = 25°C, 0dBm, Z_0 = 75Ω

Parameter	Conditions	Units	Min	Typ	Max
Frequency Range		MHz	5		300
Impedance		Ω		75	
Impedance Ratio				1:1	
Insertion Loss 1 (Pin5 - Pin3)	5 - 75 MHz 75 - 120 MHz 120 - 204 MHz 204 - 300 MHz	dB dB dB dB	- - - -	0.26 0.31 0.38 0.43	0.35 0.40 0.45 0.55
Phase (Pin5 - Pin3) (Nominal phase difference is 180 degrees)	5 - 75 MHz 75 - 120 MHz 120 - 204 MHz 204 - 300 MHz	° ° ° °	17 25 40 -57	13 22 37 53	- - - -
Input Return Loss (Pin5)	5 - 75 MHz 75 - 120 MHz 120 - 204 MHz 204 - 300 MHz	dB dB dB dB	27 23 19 16	36 31 28 25	- - - -
Output Return Loss (Pin3)	5 - 75 MHz 75 - 120 MHz 120 - 204 MHz 204 - 300 MHz	dB dB dB dB	27 24 19 16	37 31 27 23	- - - -

Electrical Specifications: Z_0 = 75Ω, T_A = 25°C, P_{in} = 0dBm

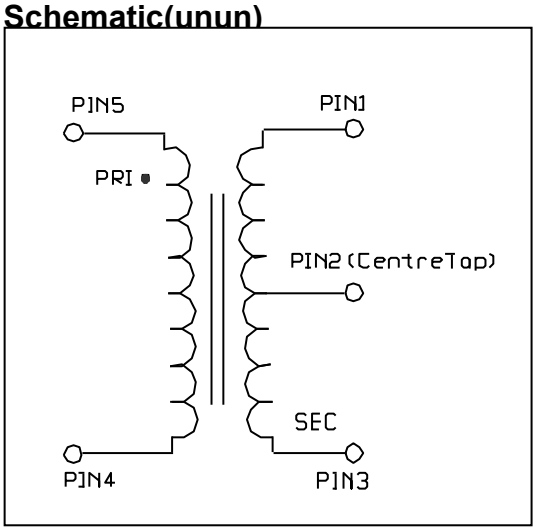
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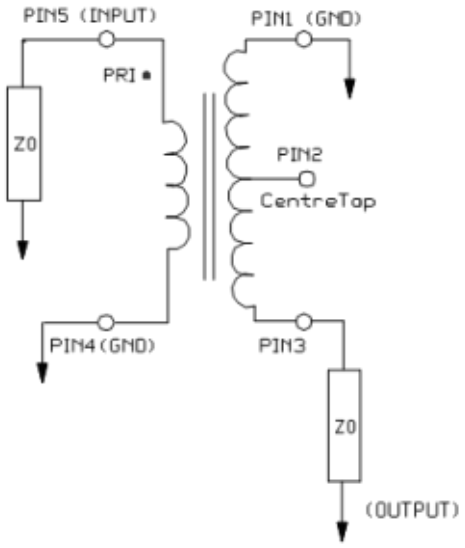
Pin Configuration(unun)

Function	Pin Number
Ground	1
Centre Tap(not connected)	2
Output	3
Ground	4
Input	5

Schematic(unun)

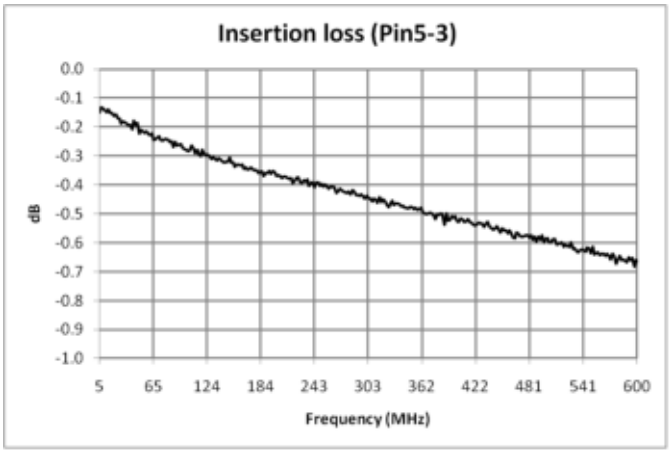


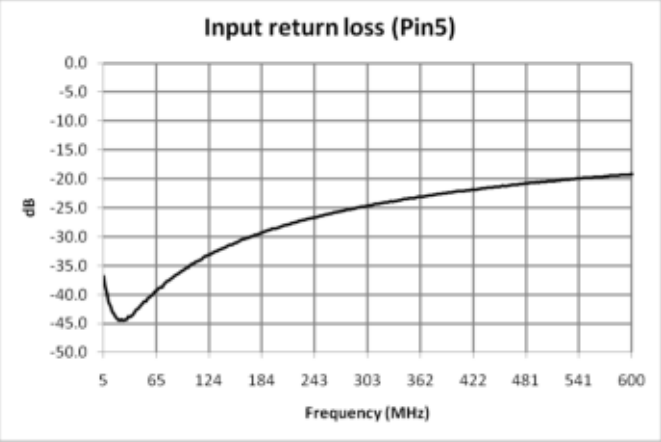
Application Circuit(unun)

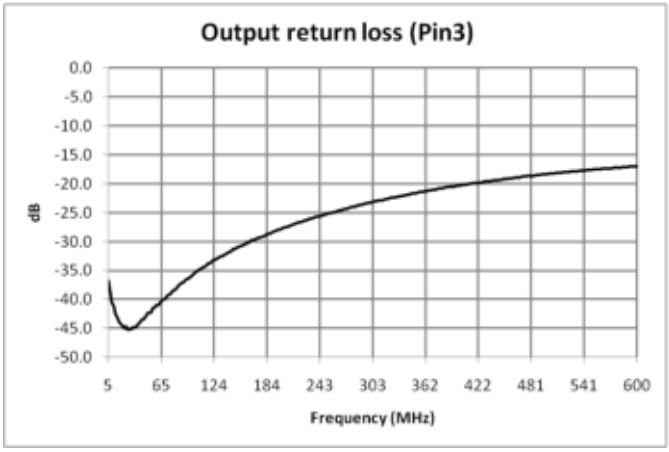


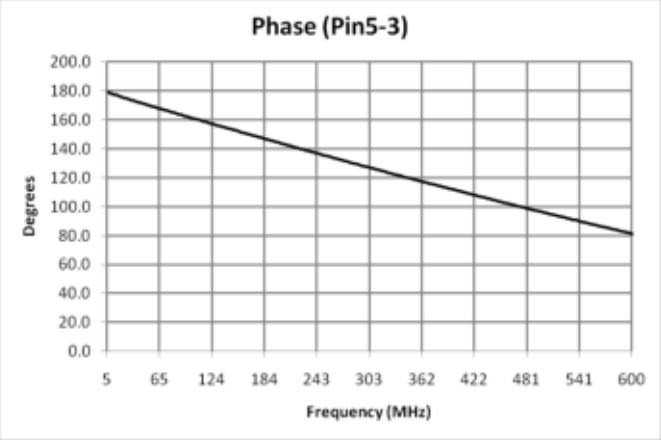
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