

Transformer, 1:1 Transmission Line Balun 5 - 300 MHz

Rev. V5

Features

- 1:1 Impedance Ratio
- Surface Mount
- Available on Tape and Reel
- 260°C Reflow Compatible
- RoHS Compliant and Pb Free
- Excellent Temperature Stability
- Can be used on 50 Ω and 75 Ω Systems
- Suitable for all CATV, Broadband and FTTx applications

Description

MABA-011009 is a 1:1 Transmission Line Balun transformer.

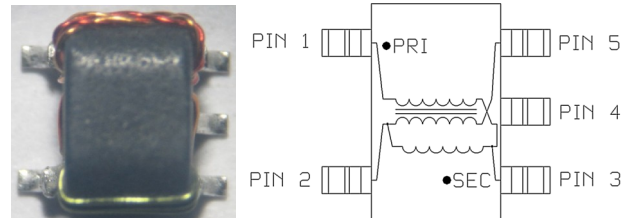
This transformer is ideally suited for DOCSIS 3.0x upstream applications due to its high power and temperature performance.

Ordering Information¹

Part Number	Description
MABA-011009	2000 piece reel
MABA-011009-TB	Customer test board

1. All sample boards include 5 loose parts.

Functional Schematic



Pin Configuration

Pin No.	Function
1	Primary Dot (input)
2	Primary (ground)
3	Secondary Dot (output1)
4	Not used (ground)
5	Secondary (output2)

Electrical Specifications: Freq. = 5 - 300 MHz, T_A = 25°C, Z₀ = 75 Ω , P_{IN} = 0 dBm

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Impedance Ratio	—	—	—	1:1	—
Insertion Loss 1 (Pin 1 - Pin 3)	5 - 200 MHz 200 -300 MHz	dB	—	0.2 0.3	0.4 0.4
Insertion Loss 2 (Pin 1 - Pin 5)	5 - 200 MHz 200 - 300 MHz	dB	—	0.2 0.3	0.4 0.4
Amplitude Balance	5 - 200 MHz 200 -300 MHz	dB	—	0.01 0.01	± 0.2 ± 0.2
Phase Balance (ref. value 180°)	5 - 300 MHz 200-300 MHz	°	—	0.5 1.0	± 2.0 ± 2.0
Input Return Loss (Pin 1)	5 - 200 MHz 200 -300 MHz	dB	25 21	37 30	—
Balanced Output Return Loss (Pin 3 - Pin 5)	5 -200 MHz 200-300 MHz	dB	25 22	36 30	—

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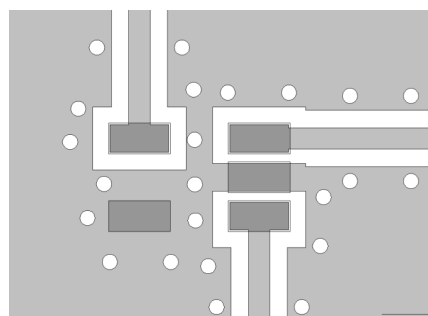
For further information and support please visit:
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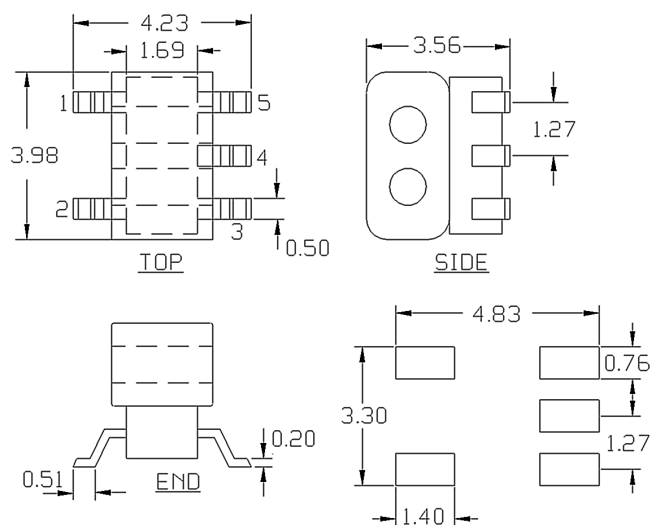
Absolute Maximum Ratings

Parameter	Absolute Maximum
Input RF Power	250 mW
DC Current	200 mA
Operating Temperature	-40°C to +125°C

PCB layout

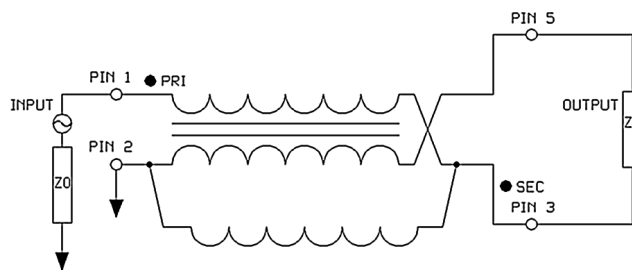


Part Outline Drawing

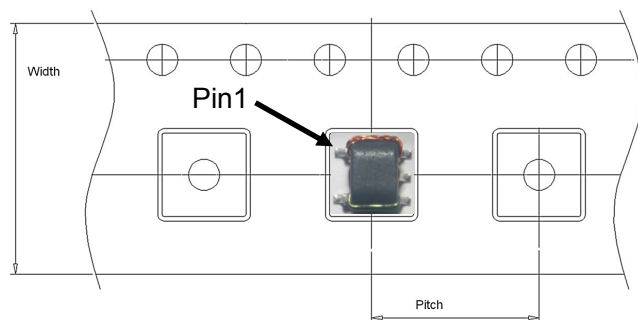


1. Dimensions in mm
2. Tolerance: ± 0.2 mm unless otherwise noted
3. Model number and lot code are printed on the reel
4. Lead material CuSn6, Lead finish SAC-305

Application Schematic



Carrier Tape Orientation



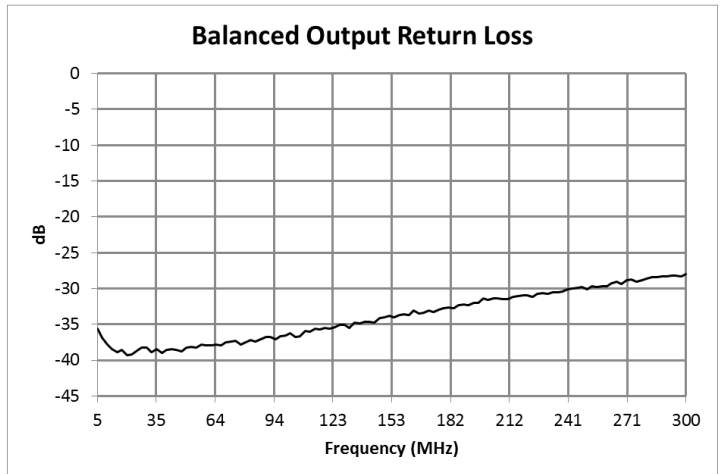
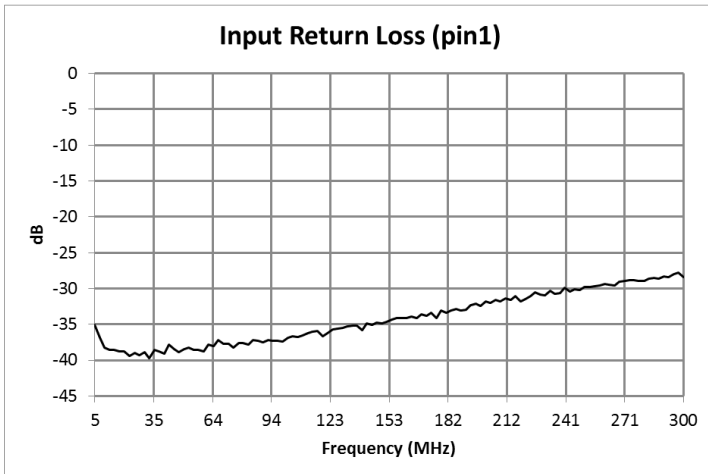
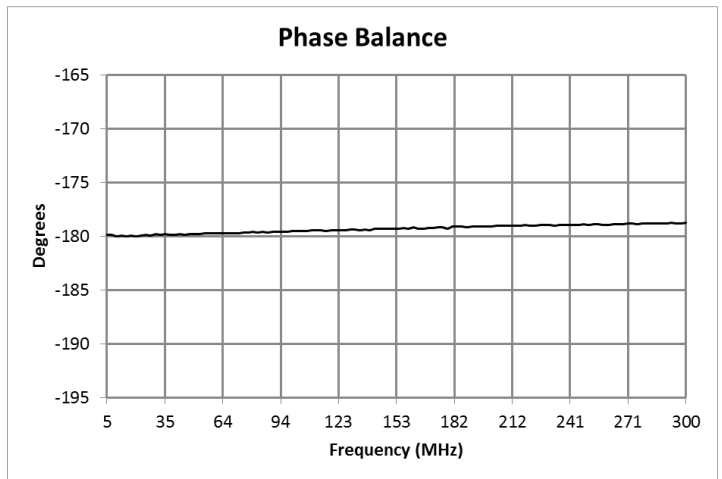
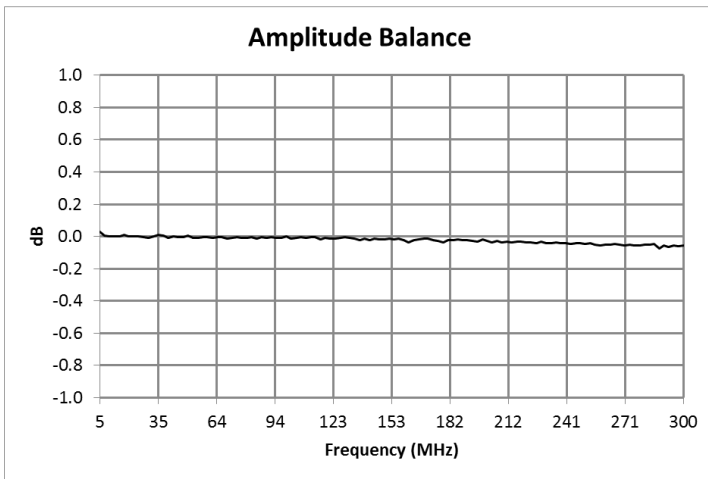
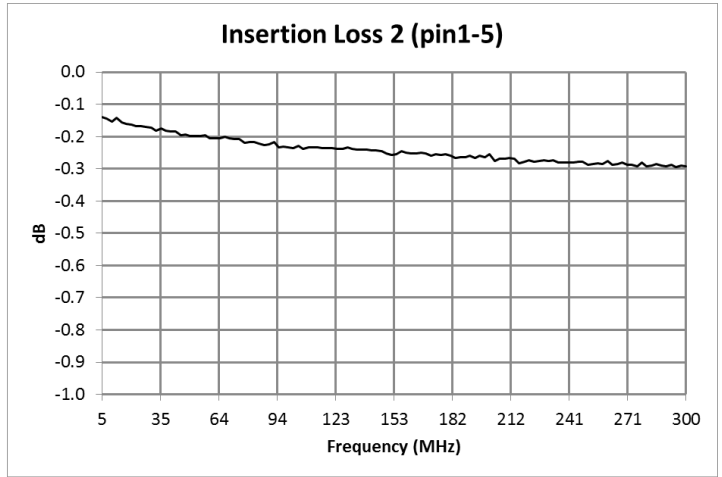
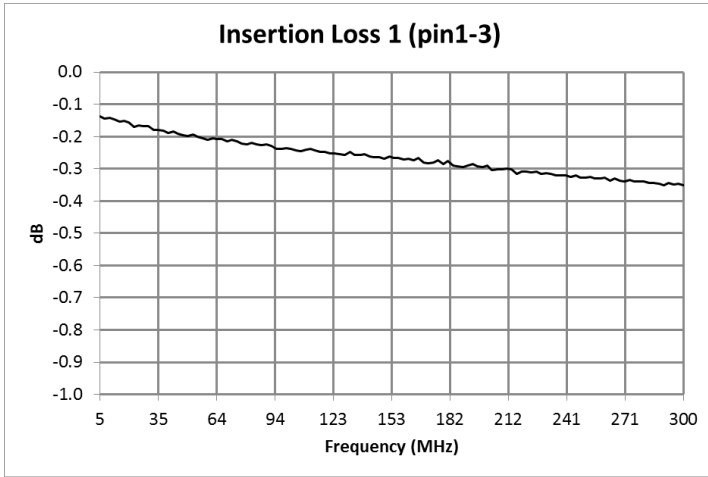
Tape & Reel Information

Parameter	Units	Value
Qty Per Reel	-	2000
Reel Size	mm	330
Tape Width	mm	12.00
Pitch	mm	8.00
Orientation	-	F26
Reference Application Note ANI-019 for orientation		

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Typical Performance Curves: $T_A = 25^\circ\text{C}$, $Z_0 = 75 \Omega$, $P_{IN} = 0 \text{ dBm}$



Full temperature plots available on request

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