

1:3 Transformer 5 - 1200 MHz

V2

Features

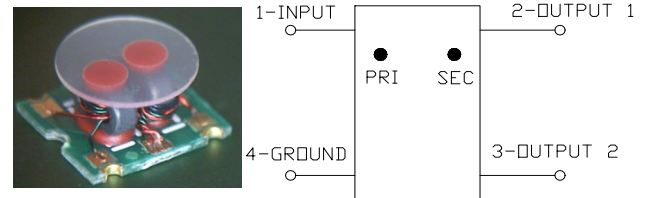
- Surface Mount
- 1:3 Impedance
- Available on Tape and Reel
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible
- Excellent Temperature Stability
- Can be used on 50 Ω & 75 Ω Systems

Description

The MABA-010441-CT38A0 is a 1:3 transformer assembled in a surface mount package.

Ideally suited for CATV Broadband.

Functional Schematic



Pin Configuration

Pin No.	Function
1	Primary Dot (input)
2	Secondary Dot (output 1)
3	Secondary (output 2)
4	Primary (ground)

Electrical Specifications: Freq. = 5 - 1200 MHz, T_A = 25°C, Z₀ = 75 Ω, P_{in} = 0 dBm

Parameter	Conditions	Units	Min.	Typ.	Max.
Impedance Ratio	—	—	—	1:3	—
Insertion Loss 1 (Pin 1 - Pin 2)	5 - 50 MHz	dB	—	0.75	1.20
	50 - 1000 MHz			1.10	1.90
	1000 - 1200 MHz			1.75	2.25
Insertion Loss 2 (Pin 1 - Pin 3)	5 - 50 MHz	dB	—	0.70	1.30
	50 - 1000 MHz			1.10	2.20
	1000 - 1200 MHz			1.75	2.50
Amplitude Unbalance	5 - 50 MHz	dB	—	0.02	±0.70
	50 - 1000 MHz			0.05	±0.70
	1000 - 1200 MHz			0.15	±0.80
Phase Balance	5 - 50 MHz	degrees	—	0.6	±5
	50 - 1200 MHz			6.6	±10
Input Return Loss	5 - 50 MHz	dB	19	21	—
	50 - 1000 MHz		15	21	
	1000 - 1200 MHz		15	24	

Ordering Information¹

Part Number	Description
MABA-010441-CT38A0	900 piece reel
MABA-010441-CT38A0-TB	sample board

1. All sample boards include 5 loose parts.

Absolute Maximum Ratings

Parameter	Absolute Maximum
Input Power	250 mW
DC Current	200 mA
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +125°C

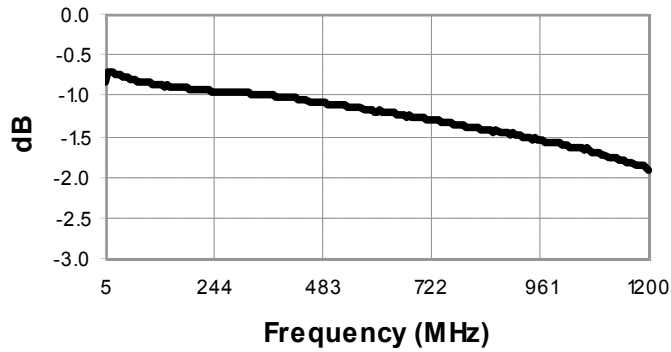
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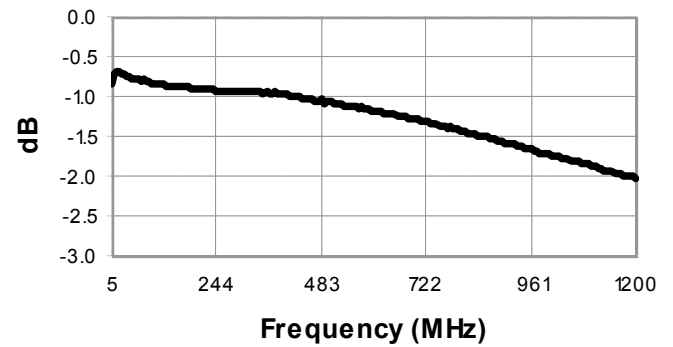
V2

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

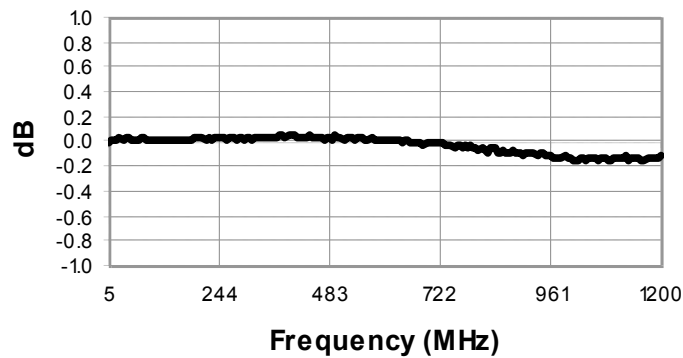
Insertion Loss: Pin1—Pin2



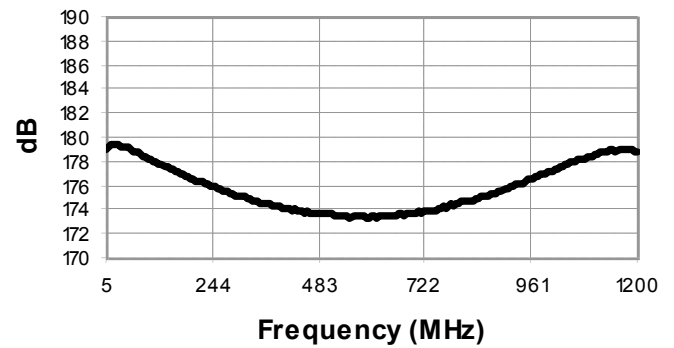
Insertion Loss: Pin1—Pin3



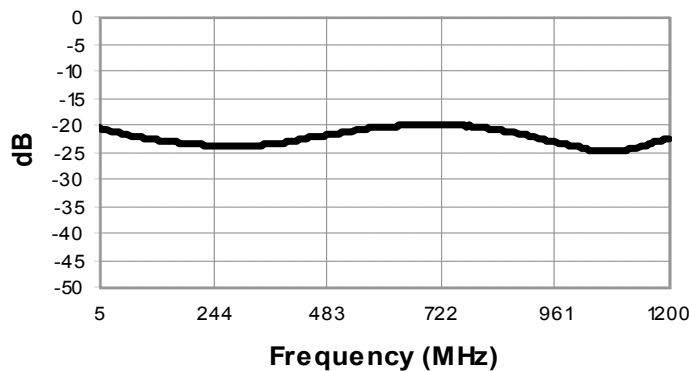
Amplitude Balance



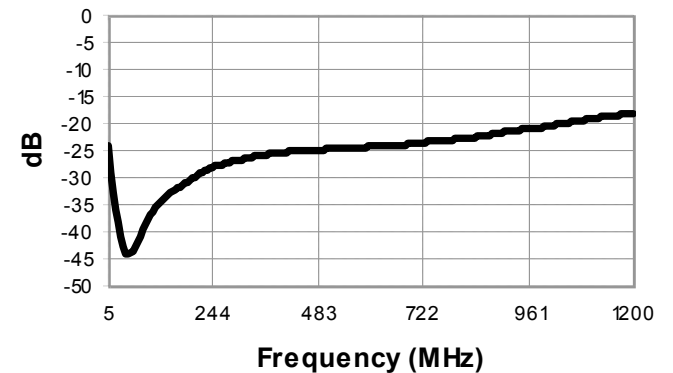
Phase Balance



Return Loss: Input



Return Loss: Output



2 Full temperature plots available on request

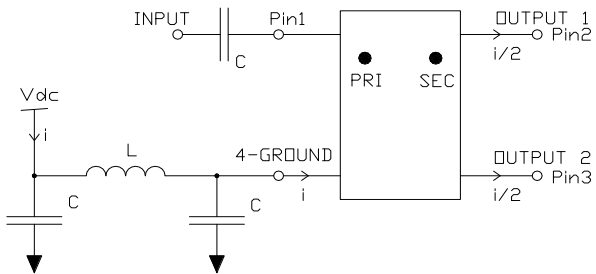
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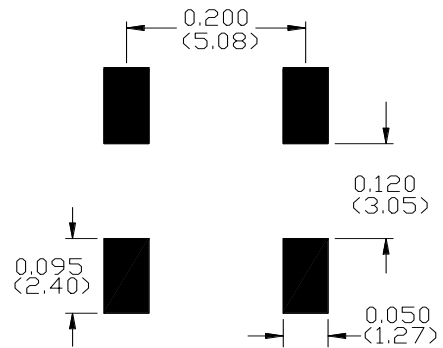
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Recommended DC Bias Circuit

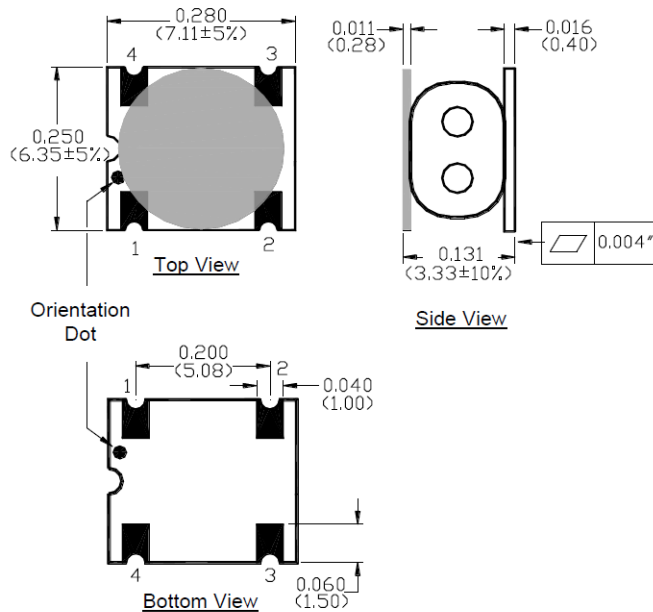


Cap/Ind	5 - 50 MHz	50 - 1200 MHz
C	100 nF	10 nF
L	10 μ H	1 μ H

Recommended Board Layout



Outline Drawing



Dimensions in mm.
Tolerance: ± 0.2 mm unless otherwise noted.
Model number and lot code are printed on the reel.
Finish: ENIG

Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	900
Reel size	mm	330
Tape width	mm	16.00
Pitch	mm	12.00
A ₀	mm	6.70
B ₀	mm	7.50
K ₀	mm	3.60
Orientation	-	F27