

## 1:3 Transformer 5 - 1200 MHz

V2

### Features

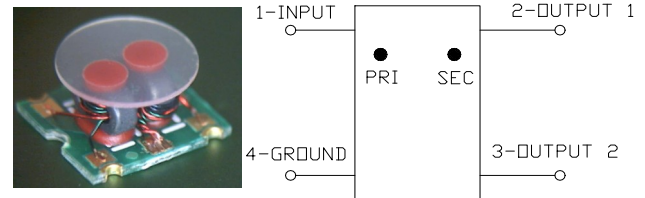
- Surface Mount
- 1:3 Impedance
- Available on Tape and Reel
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible
- Excellent Temperature Stability
- Can be used on 50  $\Omega$  & 75  $\Omega$  Systems

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

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	$\pm 0.70$
	50 - 1000 MHz			0.05	$\pm 0.70$
	1000 - 1200 MHz			0.15	$\pm 0.80$
Phase Balance	5 - 50 MHz	degrees	—	0.6	$\pm 5$
	50 - 1200 MHz			6.6	$\pm 10$
Input Return Loss	5 - 50 MHz	dB	19	21	—
	50 - 1000 MHz		15	21	
	1000 - 1200 MHz		15	24	

### Ordering Information<sup>1</sup>

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

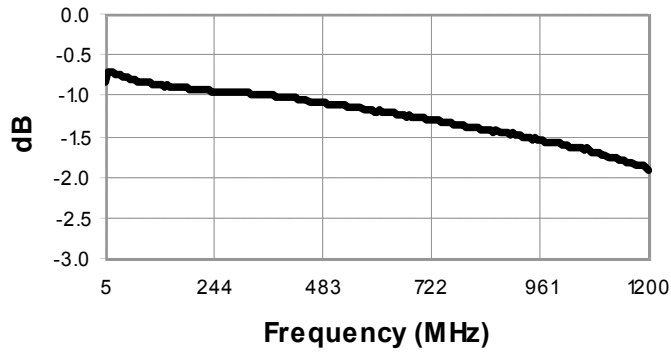
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**1:3 Transformer**  
**5 - 1200 MHz**

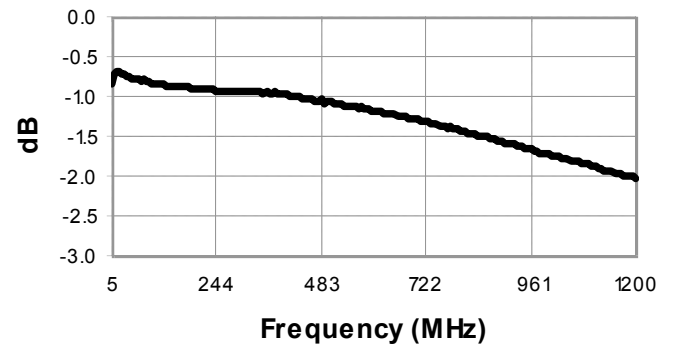
V2

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

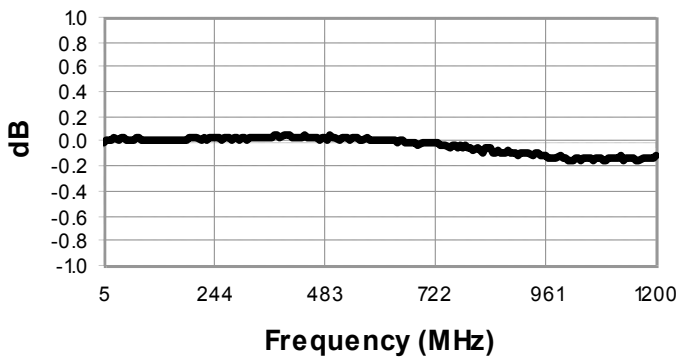
**Insertion Loss: Pin1—Pin2**



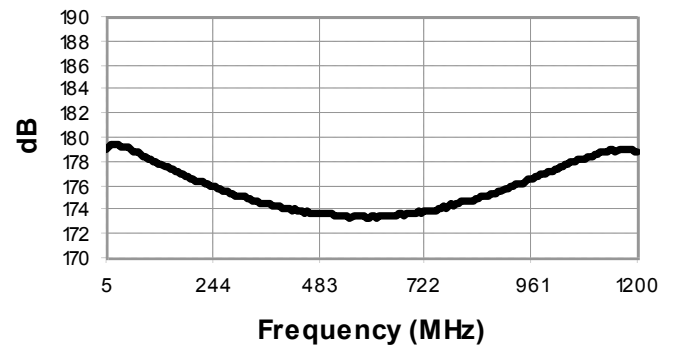
**Insertion Loss: Pin1—Pin3**



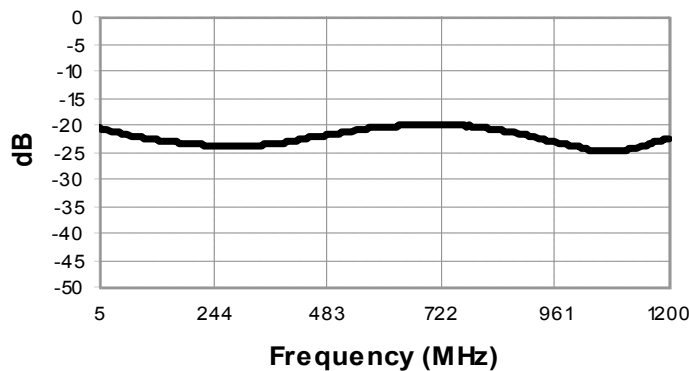
**Amplitude Balance**



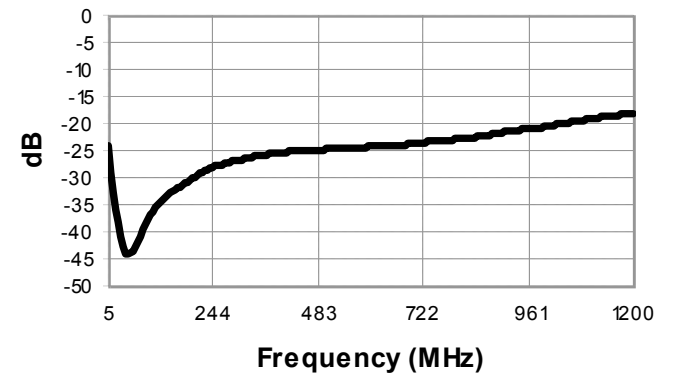
**Phase Balance**



**Return Loss: Input**



**Return Loss: Output**



2 Full temperature plots available on request

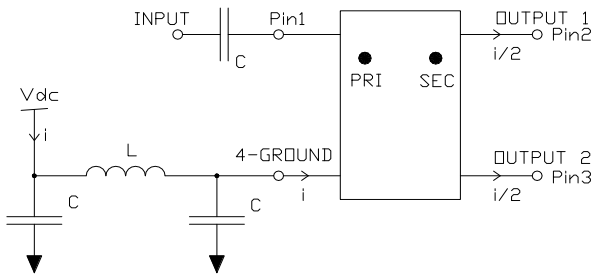
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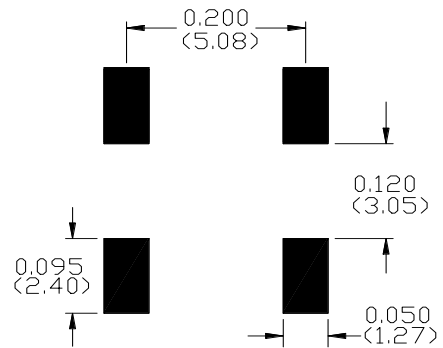
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### Recommended DC Bias Circuit

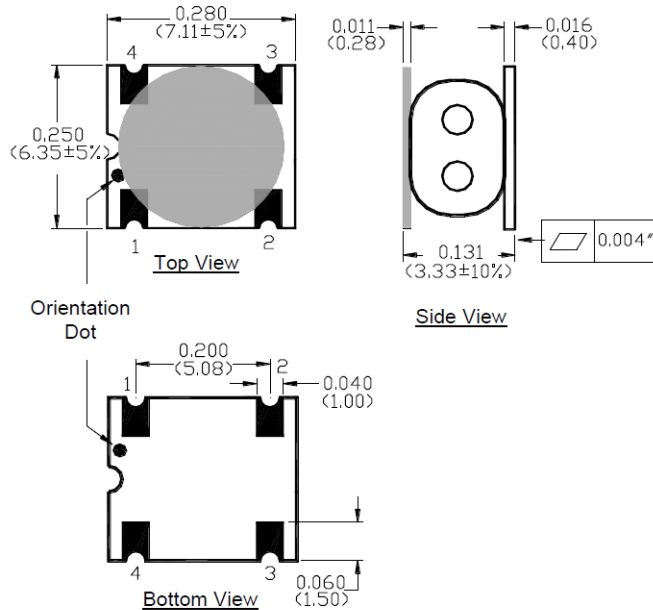


Cap/Ind	5 - 50 MHz	50 - 1200 MHz
C	100 nF	10 nF
L	10 $\mu$ H	1 $\mu$ H

### Recommended Board Layout



### Outline Drawing



Dimensions in mm.  
Tolerance:  $\pm 0.2$  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 <sub>0</sub>	mm	6.70
B <sub>0</sub>	mm	7.50
K <sub>0</sub>	mm	3.60
Orientation	-	F27

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