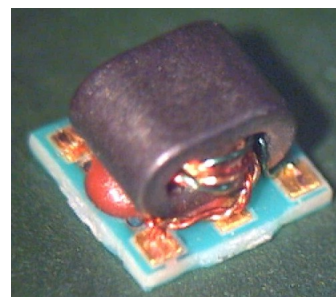


## Transformer, 1:1 Transmission Line Balun 5 to 1200 MHz

Rev. V2

### Features

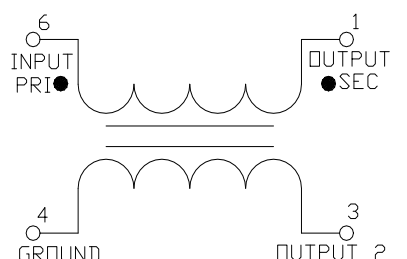
- Surface mount
- 1:1 Impedance ratio
- Can be used in both 50Ω and 75Ω systems
- 260°C reflow compatible
- RoHS\* compliant, lead free
- Available on tape and reel.



### Description

MABA-009231-CT1A4B is a 1:1 RF transmission line transformer in a low cost, surface mount package. Ideally suited for broadband CATV applications.

### Schematic



### Ordering information

Part number	Description
MABA-009231-CT1A4B	2000 piece reel
MABA-009231-CT1ATB	Customer Test Board

Note: Reference Application Note **M513** for reel size information.

### Pin configuration

Pin no.	Function
1	Secondary dot (Output 1)
2	Not used (Ground)
3	Secondary (Output 2)
4	Primary (Ground)
6	Primary dot (Input)

\* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

## Transformer, 1:1 Transmission Line Balun 5 to 1200 MHz

Rev. V2

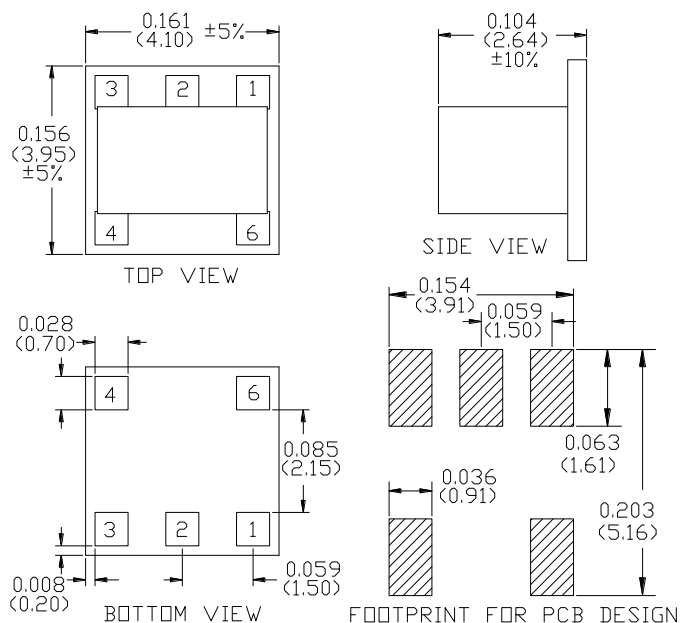
Electrical specifications:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 50\ \Omega$

Parameter	Test conditions	Units	Min	Typ	Max
Insertion loss 1 (pin6 - pin1)	5 - 50 MHz	dB	—	0.23	0.0
	50 - 400 MHz			0.01	0.5
	400 - 870 MHz			0.74	1.5
	870 - 1200 MHz			1.28	2.4
Insertion loss 2 (pin6 - pin3)	5 - 50 MHz	dB	—	0.21	0.5
	50 - 450 MHz			0.29	0.6
	450 - 1000 MHz			0.51	1.0
	1000 - 1200 MHz			0.67	1.8
Input return loss	5 - 50 MHz	dB	20	30.6	—
	50 - 1000 MHz		8	12.4	
	1000 - 1200 MHz		7	12.9	
Amplitude unbalance (nominal 0dB)	5 - 50 MHz	dB	—	0.44	$\pm 0.9$
	50 - 700 MHz			0.14	$\pm 0.8$
	700 - 1200 MHz			0.67	$\pm 1.5$
Phase unbalance (nominal 180°)	5 - 50 MHz	°	—	2.3	$\pm 20$
	50 - 1050 MHz			1.9	$\pm 8$
	1050 - 1200 MHz			3.4	$\pm 20$

### Absolute maximum ratings

Parameter	Absolute maximum
Max input power	250 mW
DC current	200 mA
Operating temperature	$-40^\circ\text{C}$ to $+85^\circ\text{C}$
Storage temperature	$-40^\circ\text{C}$ to $+85^\circ\text{C}$

### Case style: SM-187



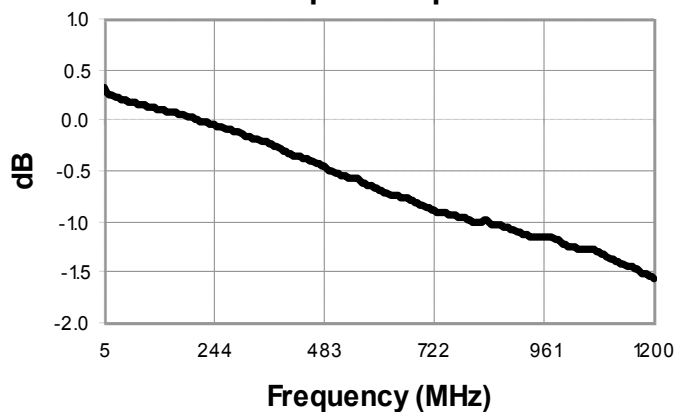
Dimensions in inches [mm] Tolerance: .xx ± .02, .xxx ± .010, Unless otherwise stated

## Transformer, 1:1 Transmission Line Balun 5 to 1200 MHz

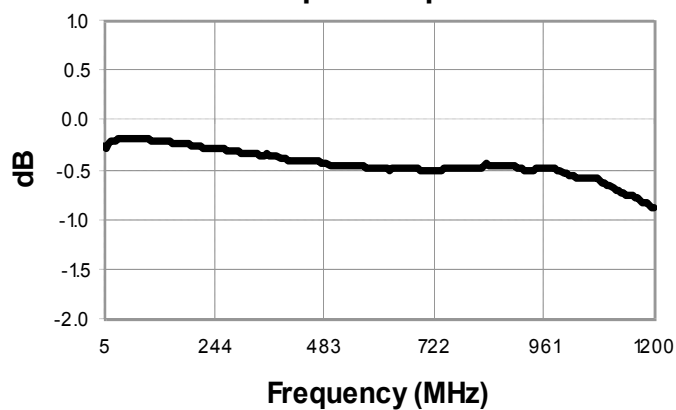
Rev. V2

Typical performance curves:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 50\ \Omega$

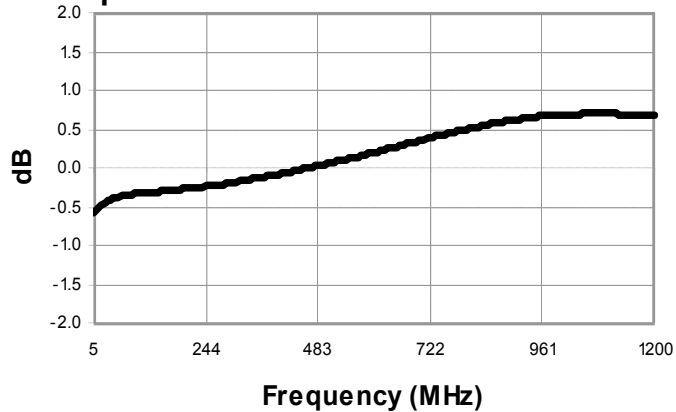
Insertion loss 1: pin 6 to pin 1



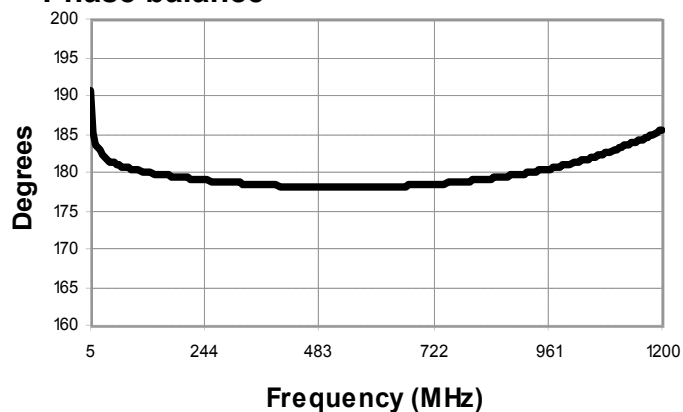
Insertion loss 2: pin 6 to pin 3



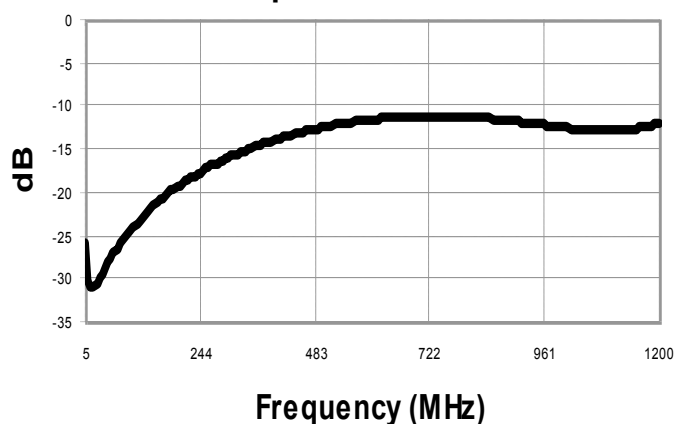
Amplitude balance



Phase balance



Return loss: Input



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