

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

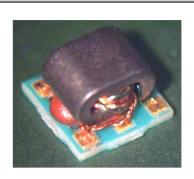
Rev. V2

#### **Features**

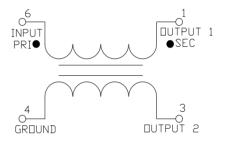
- Surface mount
- 1:1 Impedance ratio
- Can be used in both 50Ω and 75Ω systems
- 260°C reflow compatible
- RoHS\* compliant, lead free
- · Available on tape and reel.



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)	

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



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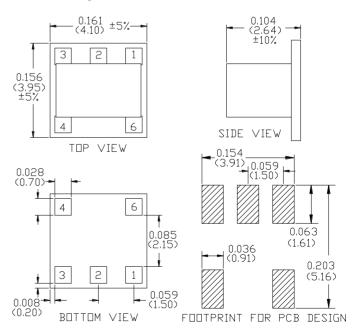
Electrical specifications:  $T_A = 25$ °C,  $Z_0 = 50 \Omega$ 

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

### **Absolute maximum ratings**

Parameter	Absolute maximum		
Max input power	250 mW		
DC current	200 mA		
Operating temperature	-40°C to +85°C		
Storage temperature	-40°C to +85°C		

### Case style: SM-187



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

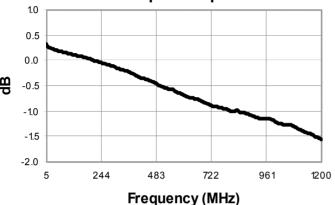


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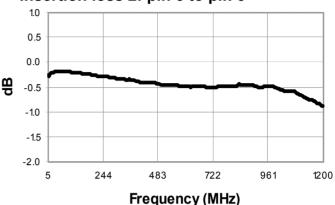
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Typical performance curves:  $T_A = 25^{\circ}C$ ,  $Z_0 = 50 \Omega$ 

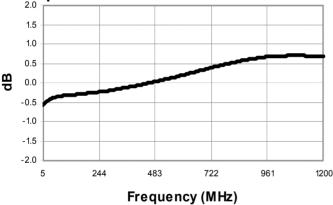
### Insertion loss 1: pin 6 to pin 1



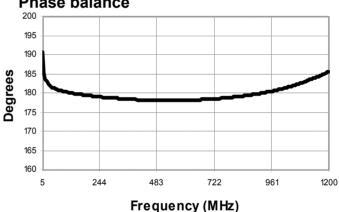
### Insertion loss 2: pin 6 to pin 3



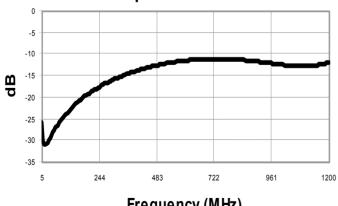
### **Amplitude balance**



### Phase balance



### **Return loss: Input**





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