

**1:1 Transmission Line Transformer  
5-1200MHz**

MABACT0043

V1

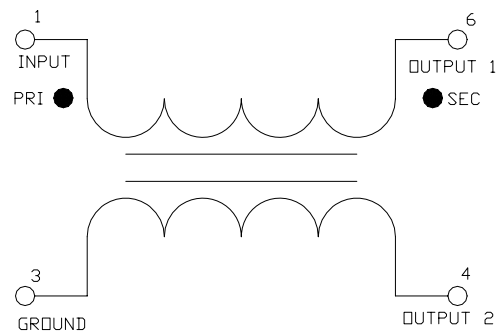
**Features**

- Surface Mount
- 1:1 Impedance
- Excellent amplitude and phase balance
- Can be used in both 50Ω and 75Ω systems
- 260°C Reflow Compatible
- RoHS\* Compliant
- Available on Tape and Reel. Reel quantity 2000

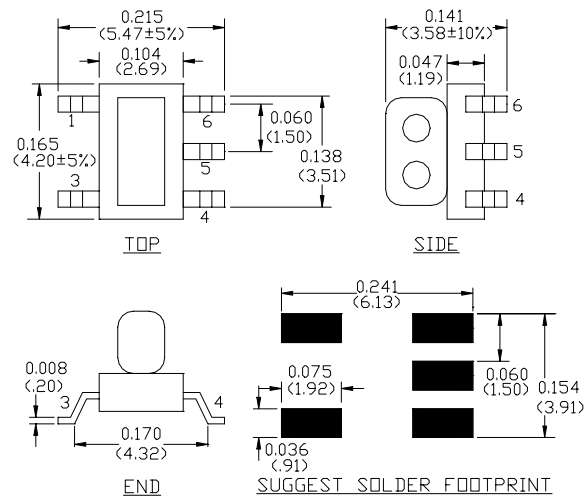
**Description**

M/A Com's MABACT0043 is a 1:1 Transmission Line Transformer in a low cost, surface mount package. Ideally suited for CATV/Broadband applications.

**Schematic**



**Case Style: SM-138**



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

**Pin Configuration**

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

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

**Ordering Information**

Part Number	Package
MABACT0043	2000 piece reel
MABA-008800-CT18TB	Customer Test Board

\* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

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**Electrical Specifications:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75\Omega$**

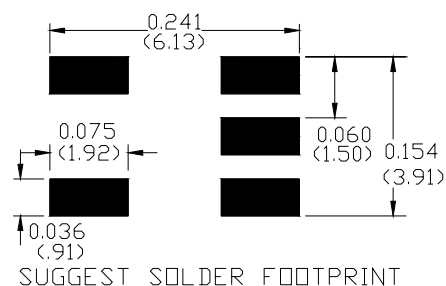
Parameter	Test Conditions	Units	Min	Typ	Max
Insertion Loss	5 - 700 MHz	dB	-	0.56	0.70
	700 - 870 MHz	dB	-	0.51	1.10
	870 - 1000 MHz	dB	-	0.55	1.50
	1000 - 1200 MHz	dB	-	0.79	2.40
Amplitude Balance	5 - 870 MHz	dB	-	$\pm 0.33$	$\pm 1.0$
	870 - 1200 MHz	dB	-	$\pm 0.47$	$\pm 1.3$
Phase Balance	5 - 450 MHz	$^\circ$	-	$\pm 1.6$	$\pm 5$
	450 - 1200 MHz	$^\circ$	-	$\pm 4.2$	$\pm 7$
Input Return Loss	5 - 90 MHz	dB	30	38	-
	90 - 550 MHz	dB	15	22	-
	550 - 1200 MHz	dB	5	11	-

**Absolute Maximum Ratings <sup>1,2</sup>**

Parameter	Absolute Maximum
Max Input Power	250mW
DC current	40mA
Operating Temperature	$-40^\circ\text{C}$ to $+85^\circ\text{C}$
Storage Temperature	$-40^\circ\text{C}$ to $+85^\circ\text{C}$

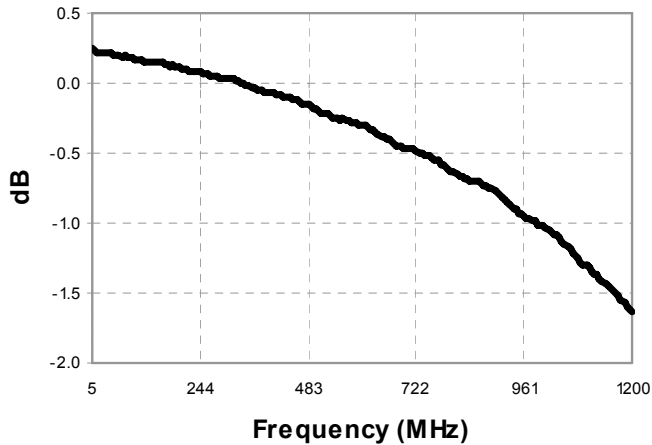
1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. M/A-COM does not recommend sustained operation near these survivability limits.

**Recommended PCB Configuration**

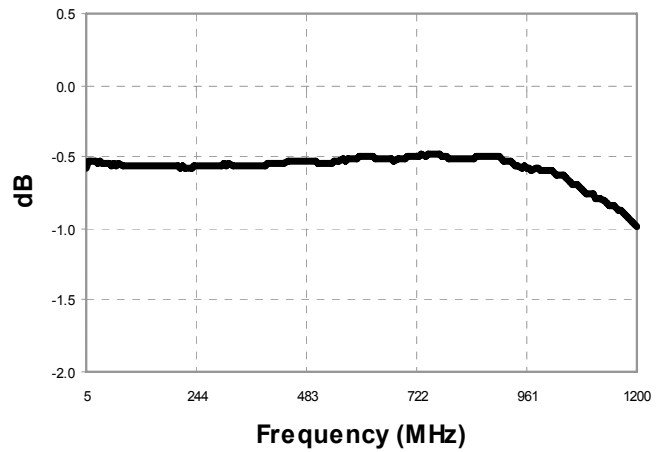


**Typical Performance Curves:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75\Omega$**

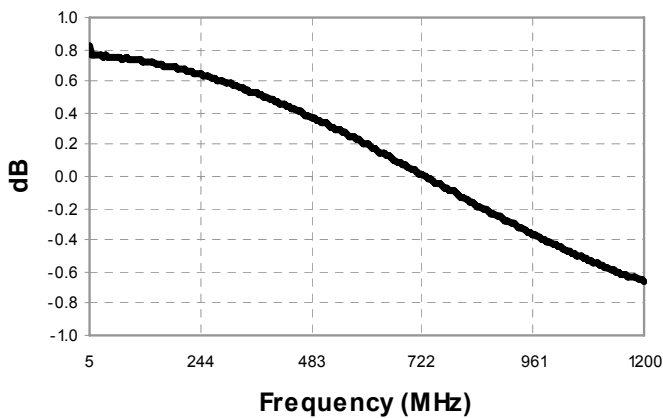
**Insertion Loss 1: through pin 1 to pin 6**



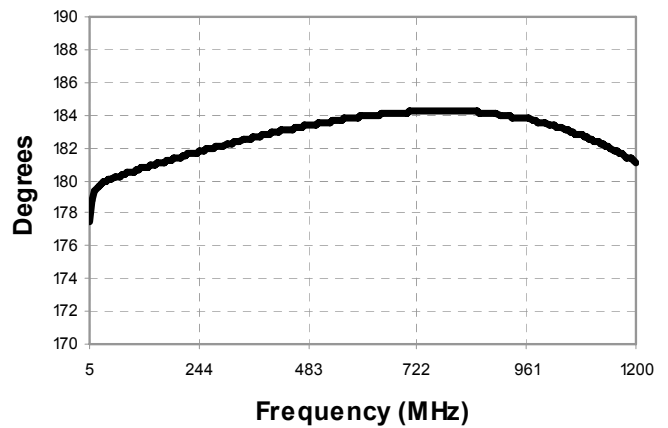
**Insertion Loss 2: coupled pin 1 to pin 4**



**Amplitude Balance**



**Phase Balance**



**Return Loss: Input**

