

**1:1 Transmission Line Transformer 4.5 – 3000MHz**

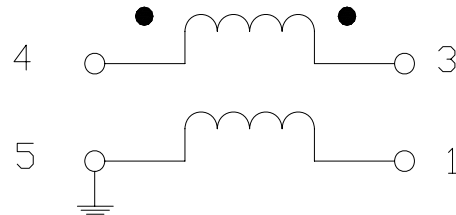
**Features**

- Surface mount
- Wide frequency range
- 1:1 impedance
- Lead Free
- RoHS\* Compliant and is 260°C reflow compatible.
- Available on Tape and Reel, reel quantity 2000

**Description**

M/A Com's MABACT0059 is a 1:1 Transmission Line Transformer. The windings of the MABACT0059 are welded to the package substrate for improved reliability and to eliminate lead content. This Transformer is ideally suited for CATV and Satellite STB/Subscriber applications.

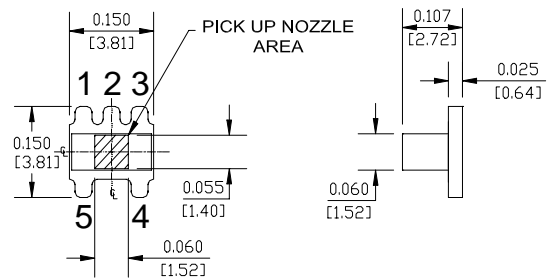
**Schematic**



**Ordering Information**

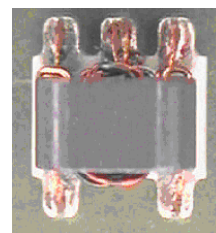
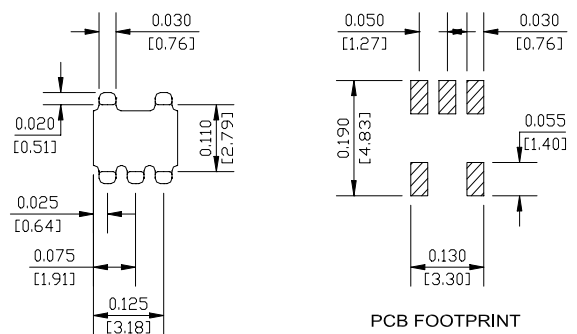
Part Number	Package
MABACT0059	2000 piece reel

**Case Style SM-22B**



**Pin Configuration**

Function	Pin Number
Secondary	1
Not Connected	2
Secondary Dot	3
Primary dot	4
Primary	5



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

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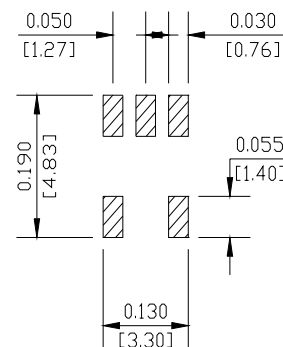
**Electrical Specifications:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75\Omega$**

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Frequency Range	4.5 – 3000 MHz				
Insertion Loss 1 (Pin 4 to Pin 3)	4.5 – 1000 MHz	dB	–	0.07	1.0
Insertion Loss 1	1000 – 2000 MHz	dB		0.63	2.0
Insertion Loss 1	2000 – 2500 MHz	dB		1.93	5.0
Insertion Loss 1	2500 – 3000 MHz	dB		4.20	6.5
Insertion Loss 2 (Pin 4 to Pin 1)	4.5 – 1000 MHz	dB	–	0.29	1.0
Insertion Loss 2	1000 – 2000 MHz	dB		0.08	2.0
Insertion Loss 2	2000 – 2500 MHz	dB		2.00	6.0
Insertion Loss 2	2500 – 3000 MHz	dB		5.30	8.4
Amp Unbalance (Nominal 0dB)	4.5 – 20 MHz	dB	–	$\pm 1.0$	$\pm 1.2$
	20 – 1000 MHz	dB		$\pm 0.3$	$\pm 1.0$
Phase Balance (Nominal $180^\circ$ )	4.5 – 1000 MHz	$^\circ$	–	$\pm 0.03$	$\pm 20$
Input return Loss (Pin 4)	4.5 – 1000 MHz	dB	15	26.30	–

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

	Absolute Maximum
RF Power	250 mW
DC Current	30 mA
Operating/Storage Temperature	$-40^\circ\text{C}$ to $+85^\circ\text{C}$

**Suggested Footprint**



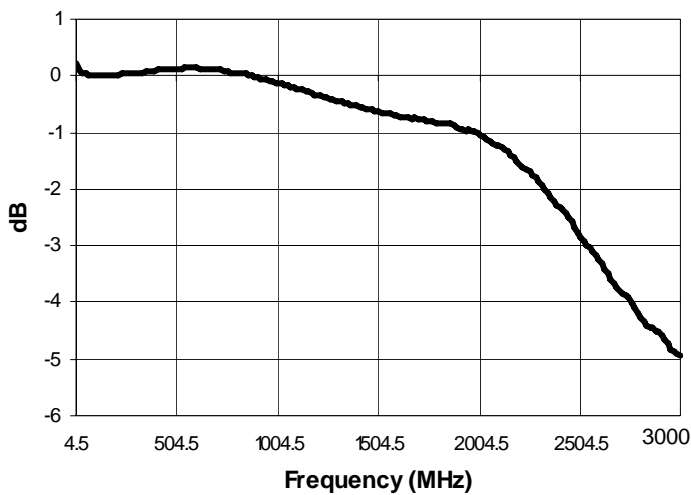
PCB FOOTPRINT

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.

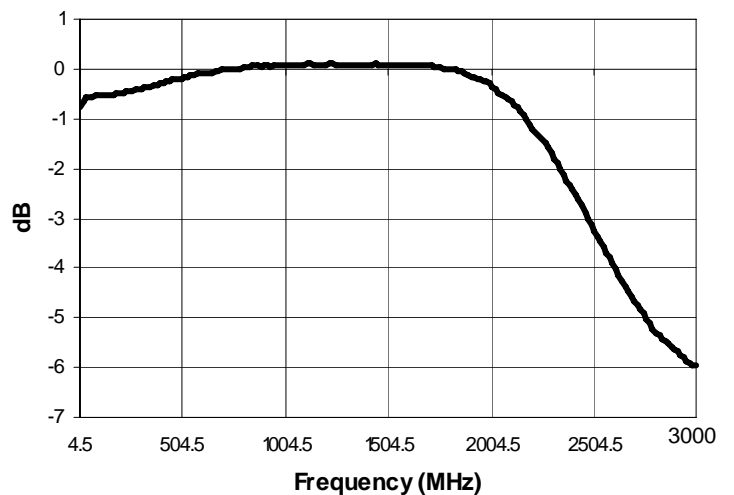
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**Typical Performance Curves @  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75\Omega$**

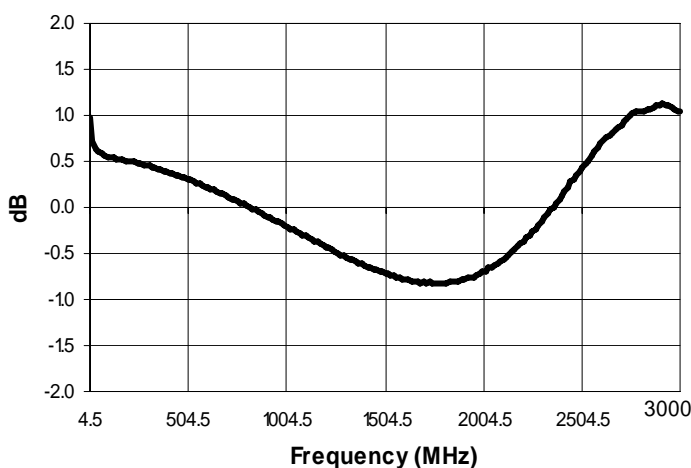
*Insertion Loss Port 1 (Pin 4 to Pin 3)*



*Insertion Loss Port 2 (Pin 4 to Pin 1)*



*Amplitude Unbalance*



*Phase Unbalance*

