

1:1 Transmission Line Transformer 4.5 to 3000 MHz

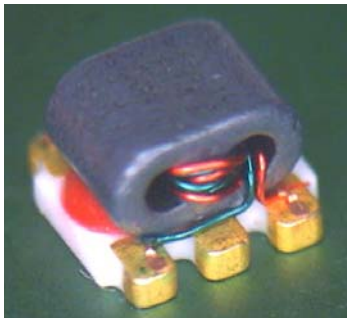
Rev V4

Features

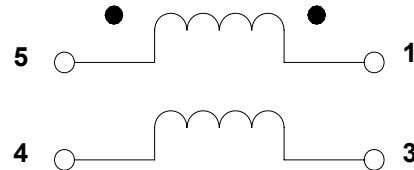
- Surface mount
- Wide frequency range
- 1:1 Impedance
- Pb free
- RoHS Compliant and is 260°C reflow compatible
- Available on tape and reel

Description

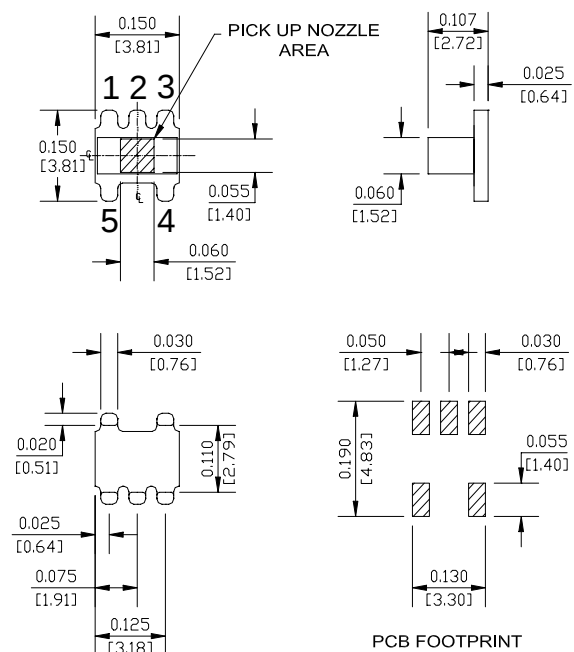
The MABACT0059 is a 1:1 Transmission Line Transformer. The windings of the MABACT0059 are welded to the package substrate for improved reliability and to eliminate lead content. This Transformer is ideally suited for CATV and Satellite STB/Subscriber applications.



Schematic



Component Dimensions



* Dimensions are inches (millimeters) ± 0.015 (0.38) unless otherwise specified.

Pin Configuration

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

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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
	1000 – 2000 MHz	dB		0.63	2.0
	2000 – 2500 MHz	dB		1.93	5.0
	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
	1000 – 2000 MHz	dB		0.08	2.0
	2000 – 2500 MHz	dB		2.00	6.0
	2500 – 3000 MHz	dB		5.30	8.4
Amp Unbalance (Nominal 0dB)	4.5 – 20 MHz	dB	–	± 1.0	± 1.2
	20 – 1000 MHz	dB		± 0.3	± 1.0
Phase Unbalance (Nominal 180°)	4.5 – 1000 MHz	$^\circ$	–	± 0.03	± 2.0
Input Return Loss (Pin 4)	4.5 – 1000 MHz	dB	15	26.30	–

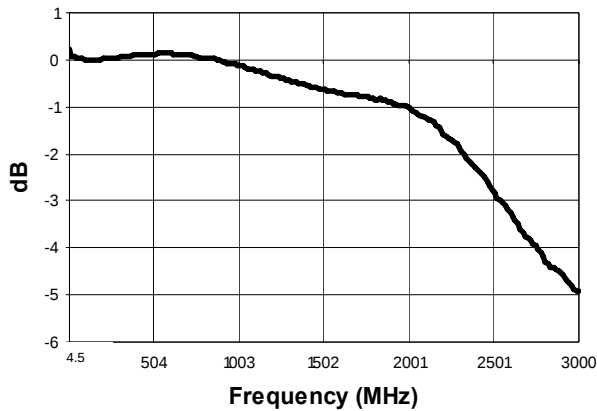
Recommended Maximum Ratings ^{1,2}

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

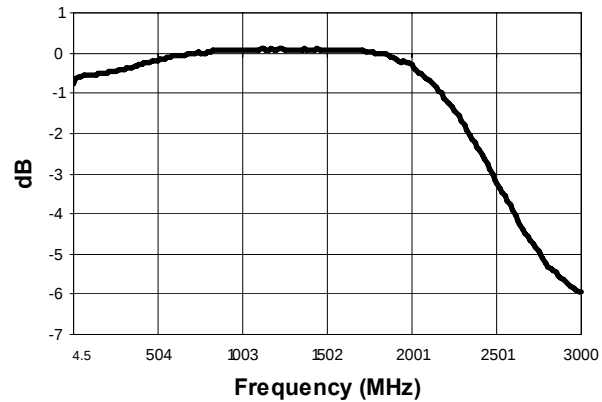
- Exceeding any one or combination of these limits may cause permanent damage to this device.
- M/A-COM Technology Solutions does not recommend sustained operation near these survivability limits.

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

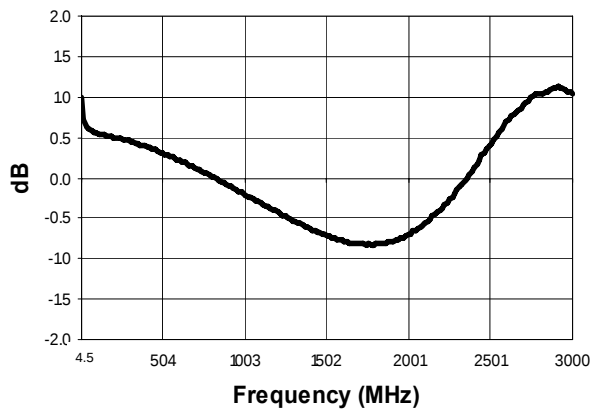
Insertion Loss 1 (Pin4 - Pin3)



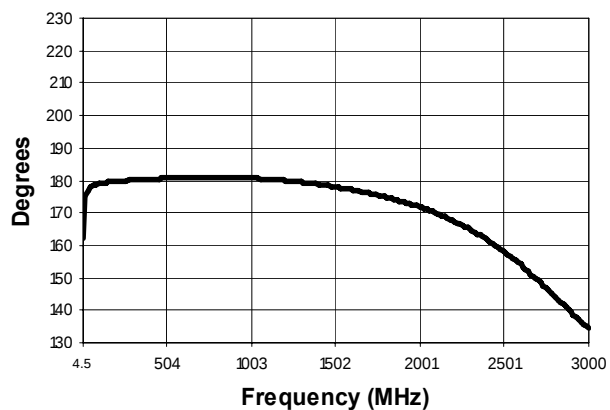
Insertion Loss 2 (Pin4 - Pin1)

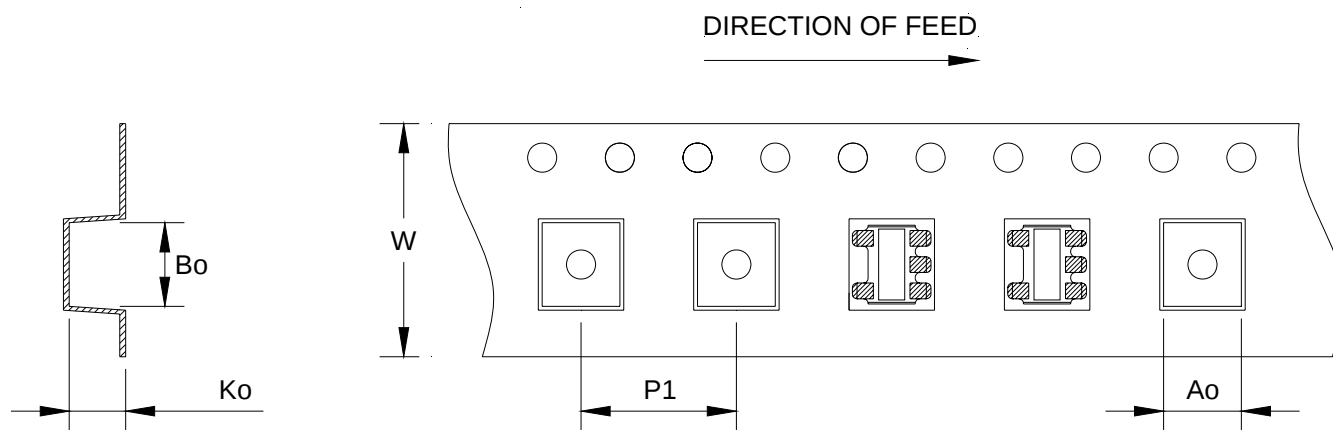


Amplitude Balance



Phase Balance





Item	Dimension
Ao	4.05mm +/- 0.1mm
Bo	4.30mm +/- 0.1mm
Ko	3.45mm +/- 0.1mm
W	12.00mm +/- 0.3mm
P1	8.00mm +/- 0.1mm

Ordering Information

Part Number	Package
MABACT0059	2000 piece reel