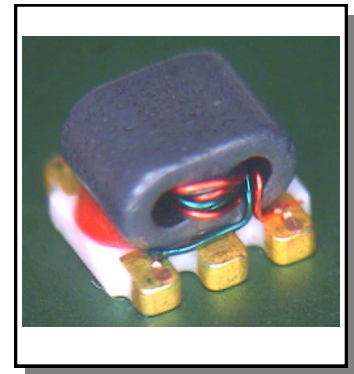


## 1:1 Transmission Line Transformer 4.5 to 3000 MHz

Rev. V5

### Features

- Surface mount
- Wide frequency range
- 1:1 impedance
- Pb free
- 260°C reflow compatible
- RoHS Compliant



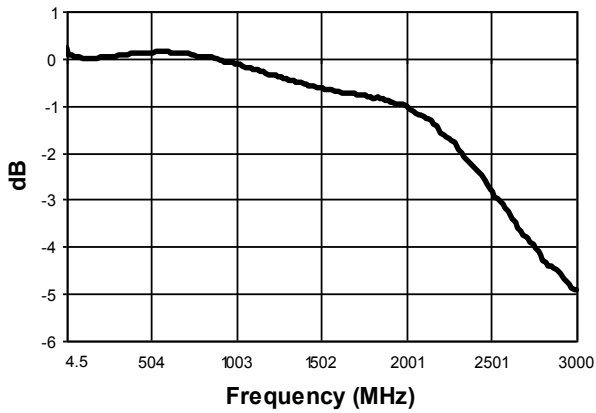
### Description

The MABACT0059 is a 1:1 Transmission Line Transformer. The windings 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.

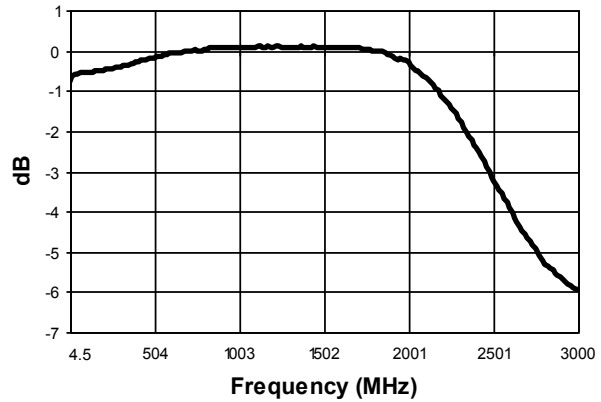
### Electrical Specifications: $Z_0 = 75\Omega$ , $T_A = 25^\circ\text{C}$ , $P_{in} = 0\text{dBm}$

Parameter	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
Amplitude Balance (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	–

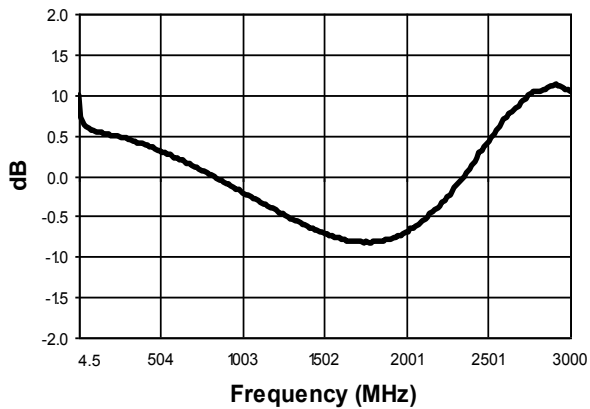
**Insertion Loss 1 (Pin4 - Pin3)**



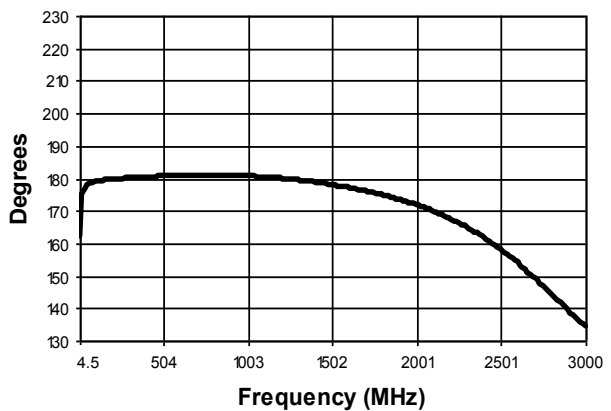
**Insertion Loss 2 (Pin4 - Pin1)**



**Amplitude Balance**

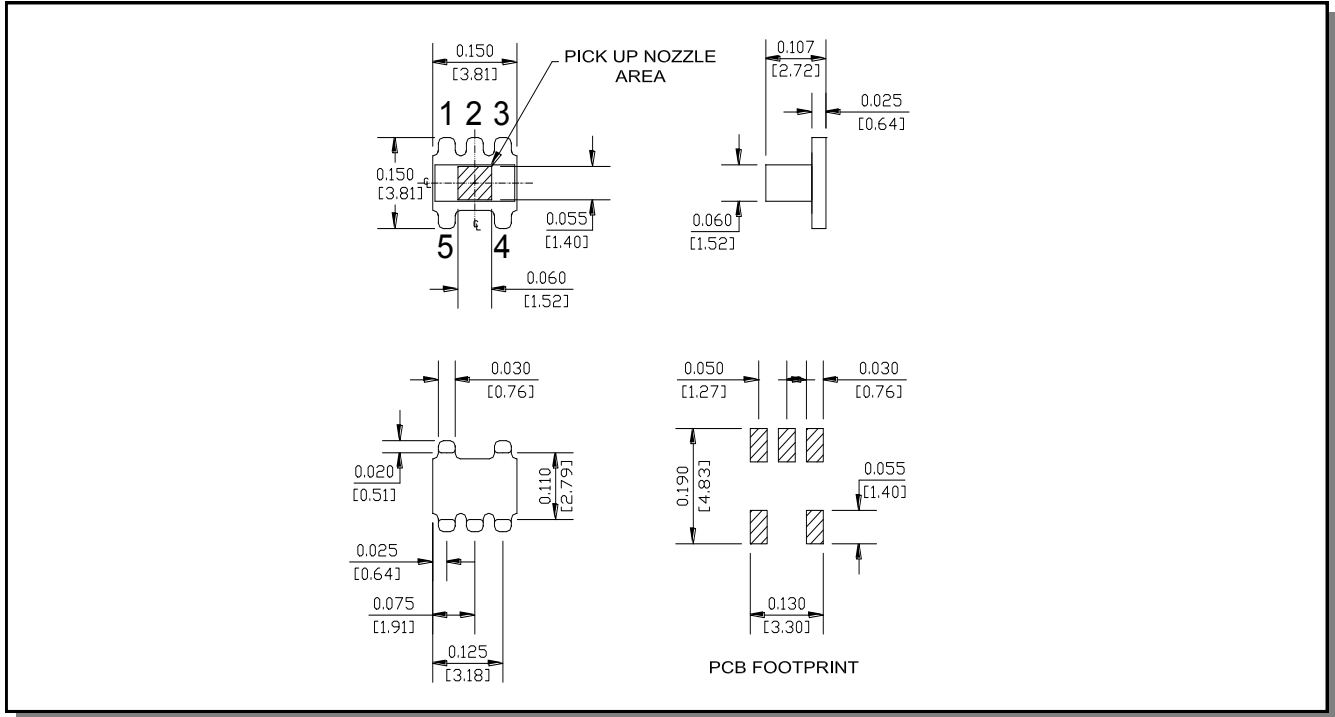


**Phase Balance**



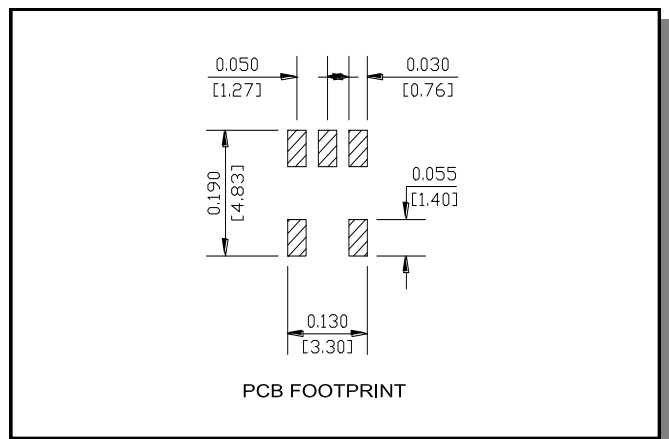
Electrical Specifications:  $Z_0 = 75\Omega$ ,  $T_A = 25^\circ\text{C}$ ,  $P_{in} = 0\text{dBm}$

## Outline Drawing



1. Dimensions in inches [mm].
2. Tolerance:  $\pm 0.2\text{mm}$  unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Finish: Sn finish,  $4\mu\text{--}8\mu$  over metallisation layer as required by supplier process.

## Recommended Footprint



## Tape & Reel Information

Parameter	Units	Value
Qty per reel	-	2000
Reel Size	mm	330
Tape Width	mm	12.00
Pitch	mm	8.00
Ao	mm	4.05
Bo	mm	4.30
Ko	mm	3.45
Orientation	-	F5
Reference Application Note ANI-019 for orientation		

## Ordering Information

Part Number	Description
MABACT0059	Tape & Reel

## Recommended Maximum Ratings

Parameter	Units	Min	Max
Input Power	mW		250
DC Current	mA		30
Operating Temperature Range	°C	-40	+85

Full temperature plots available on request

## Pin Configuration

Pin No.	Function
1	Secondary Dot
2	Not Connected
3	Secondary
4	Primary
5	Primary Dot

## Schematic

