

1:1 Transmission Line Transformer 4.5 to 3000 MHz

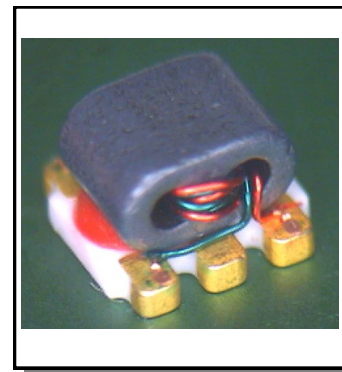
Rev. V5

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.



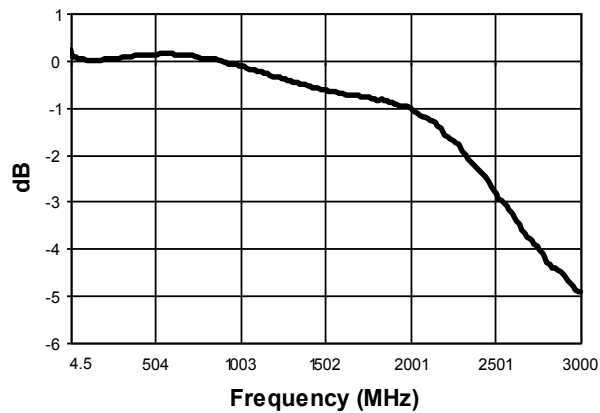
Electrical Specifications: $Z_0 = 75\Omega$, $T_A = 25^\circ\text{C}$, $P_{in} = 0\text{dBm}$

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	–	± 1.0	± 1.2
	20 – 1000 MHz	dB		± 0.3	± 1.0
Phase Balance (Nominal 180°)	4.5 – 1000 MHz	$^\circ$	–	± 0.03	± 20
Input Return Loss (Pin 4)	4.5 – 1000 MHz	dB	15	26.30	–

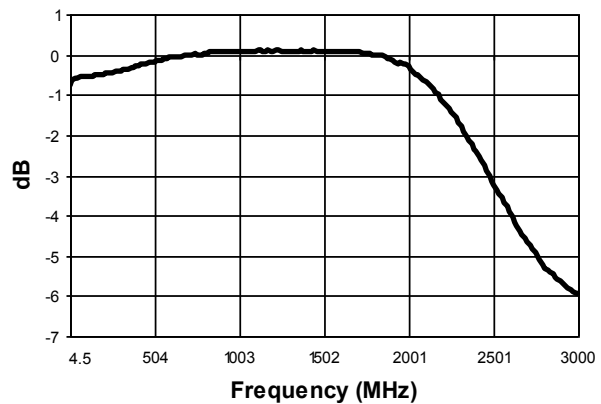
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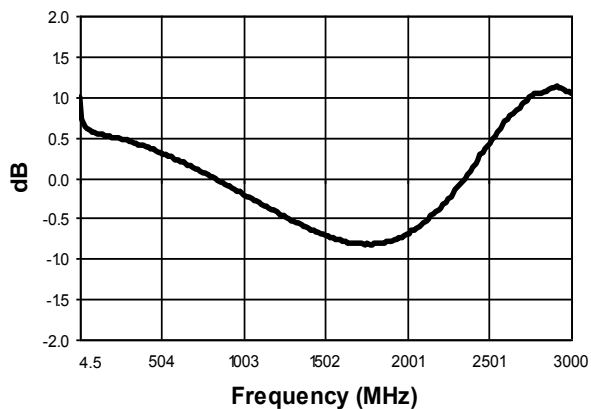
Insertion Loss 1 (Pin4 - Pin3)



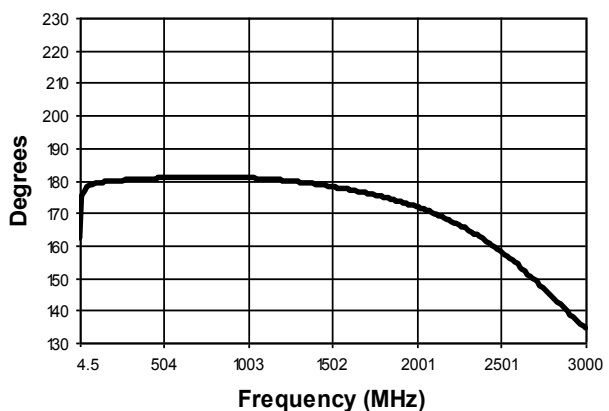
Insertion Loss 2 (Pin4 - Pin1)



Amplitude Balance



Phase Balance

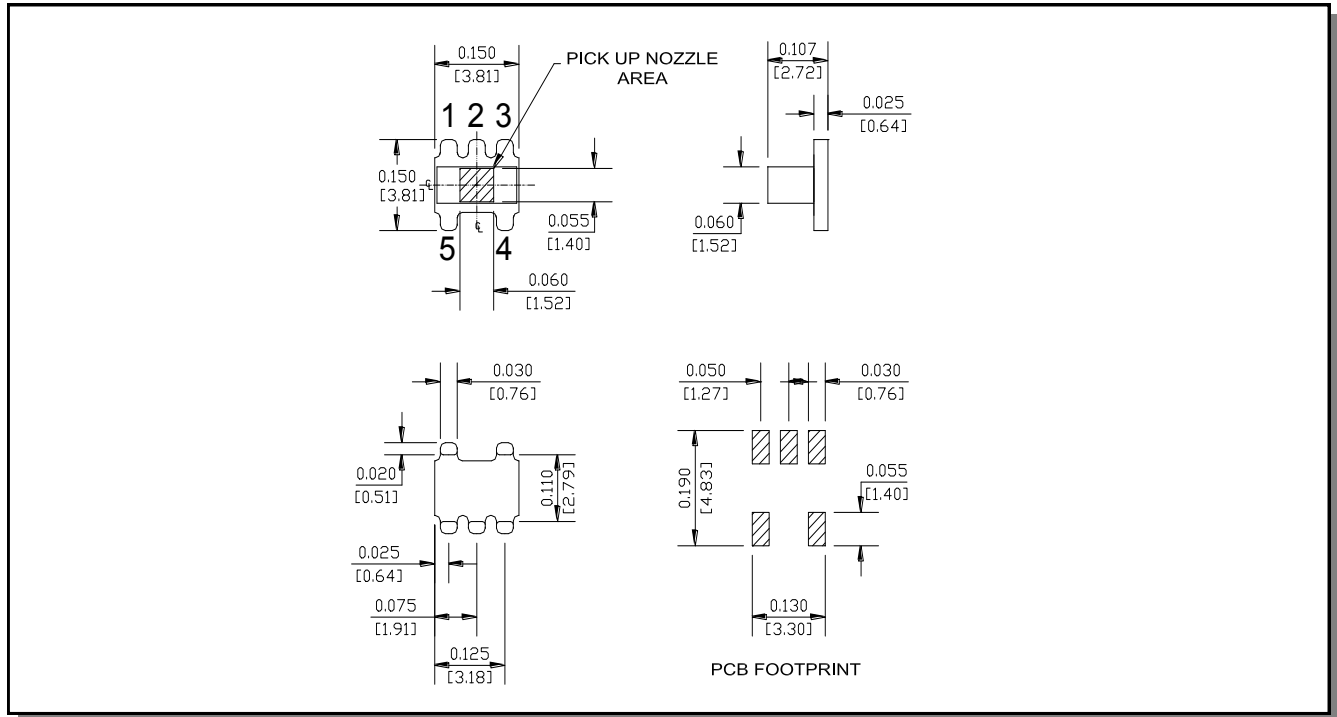


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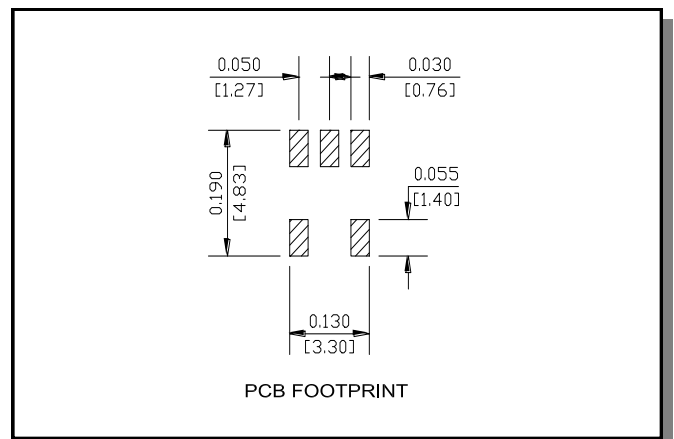
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Outline Drawing



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



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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

