

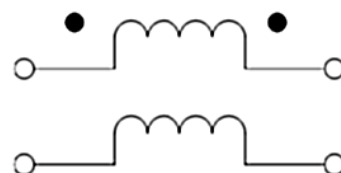
Features

- Surface Mount
- Wide Frequency Range
- 1:1 Impedance
- Excellent Temperature Stability
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible

Description

The MABACT0059 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.

Functional Schematic



Ordering Information

Part Number	Package
MABACT0059	2000 piece reel
MABACT0059TB	Sample Board

Pin Configuration

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

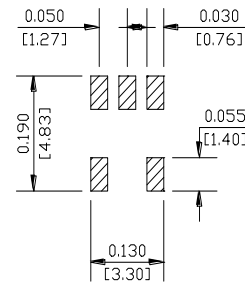
Electrical Specifications: Freq. = 4.5 - 3000 MHz, T_A = +25°C, Z₀ = 75 Ω

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Insertion Loss 1 (Pin 4 to Pin 3)	4.5 - 1000 MHz	dB	-	0.07	1.0
	1000 - 2000 MHz			0.63	2.0
	2000 - 2500 MHz			1.93	5.0
	2500 - 3000 MHz			4.20	6.5
Insertion Loss 2 (Pin 4 to Pin 1)	4.5 - 1000 MHz	dB	-	0.29	1.0
	1000 - 2000 MHz			0.08	2.0
	2000 - 2500 MHz			2.00	6.0
	2500 - 3000 MHz			5.30	8.4
Amplitude Balance (Nominal 0 dB)	4.5 - 20 MHz	dB	-	±1.0	±1.2
	20 - 1000 MHz			±0.3	±1.0
Phase Balance (Nominal 180°)	4.5 - 1000 MHz	°	-	±0.03	±20
Input Return Loss (Pin 4)	4.5 - 1000 MHz	dB	15	26.30	-

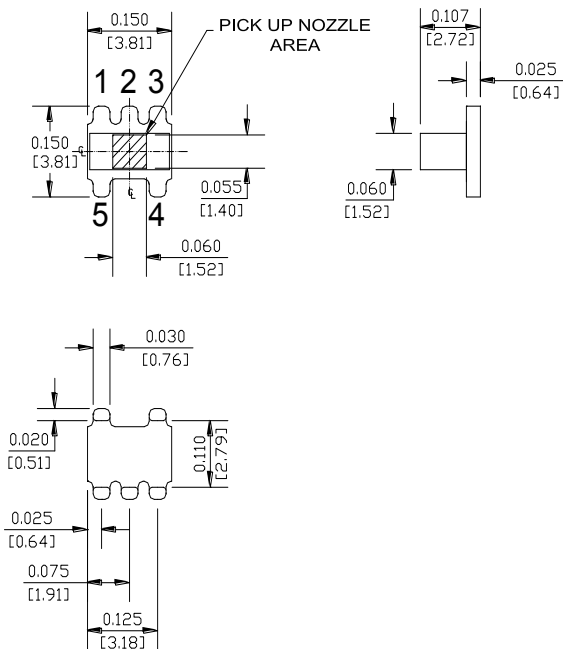
Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Power	500 mW
DC Current	500 mA
Operating/Storage Temperature	-40°C to +85°C

Recommended Footprint



Outline Drawing



Tape & Reel Information

Parameter	Units	Value
Qty per reel	—	2000
Reel Size	mm	330
Tape Width	mm	12.00
Pitch	mm	8.00
Orientation	—	F5
Reference Application Note ANI-019 for orientation		

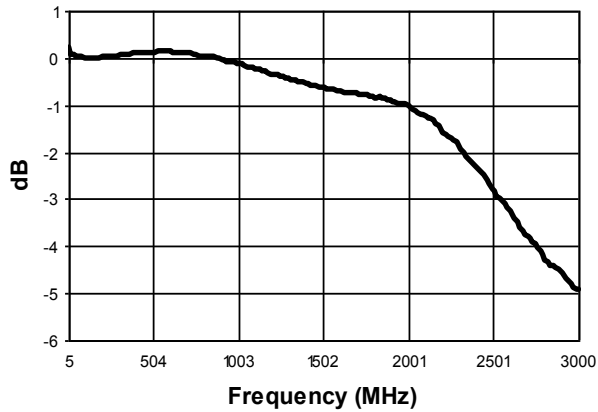
1. Dimensions in inches [mm].
2. Tolerance: ± 0.2 mm unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Plating finish: Au finish, 0.1 - 0.5 μ m

1:1 Transmission Line Balun 4.5 - 3000 MHz

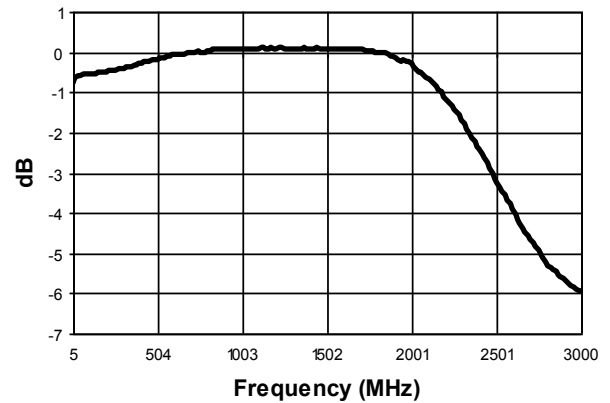
Rev. V8

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

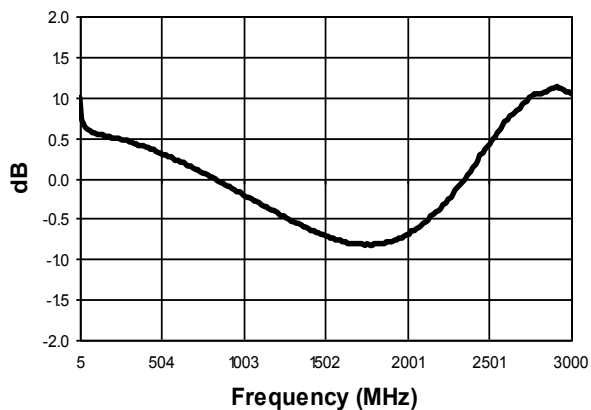
Insertion Loss 1 (Pin4 - Pin3)



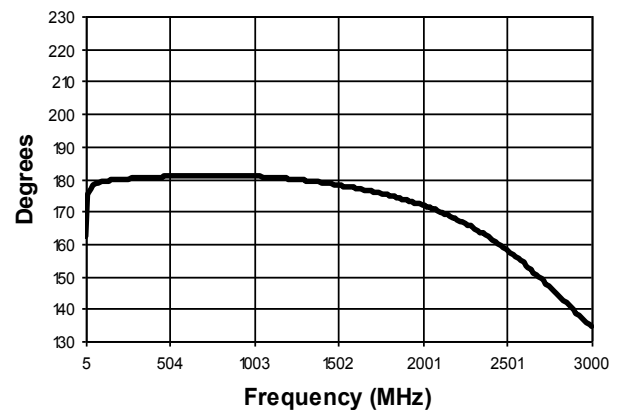
Insertion Loss 2 (Pin4 - Pin1)



Amplitude Balance



Phase Balance



Full temperature plots available on request

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