1:1 Transmission Line Balun
4.5 - 3000 MHz

MABACT0059
Rev. V9

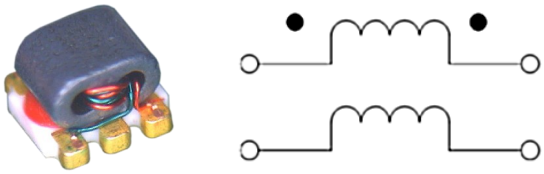
Features

- Surface Mount
- Wide Frequency Range
- 1:1 Impedance
- Excellent Temperature Stability
- RoHS Compliant and Pb Free
- 260ºC 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



Pin Configuration

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

Electrical Specifications: Freq. = 4.5 - 3000 MHz, T_A = +25°C, Z_0 = 75 Ω

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

Ordering Information

Part Number	Package
MABACT0059	2000 piece reel
MABACT0059TB	Sample Board

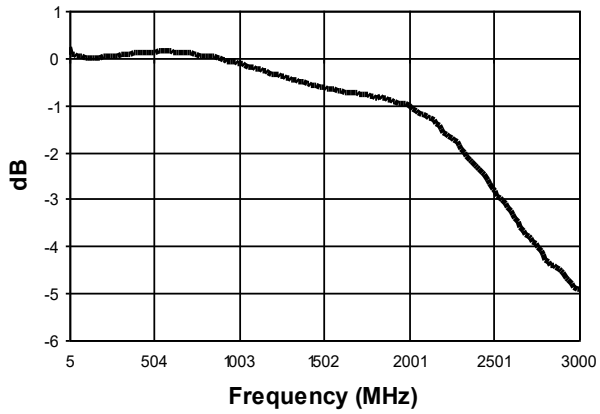
Absolute Maximum Ratings

Parameter	Absolute Maximum
RF Power	500 mW
DC Current	500 mA
Operating/Storage Temperature	-40°C to +95°C

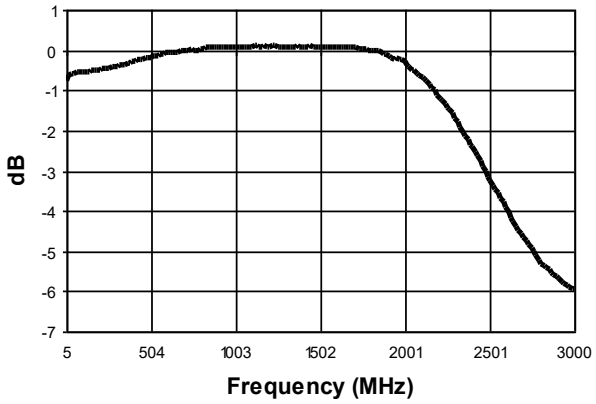
* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

Typical Performance Curves: Electrical Specifications: Z_0 = 75 Ω, T_A = 25°C, P_{IN} = 0 dBm

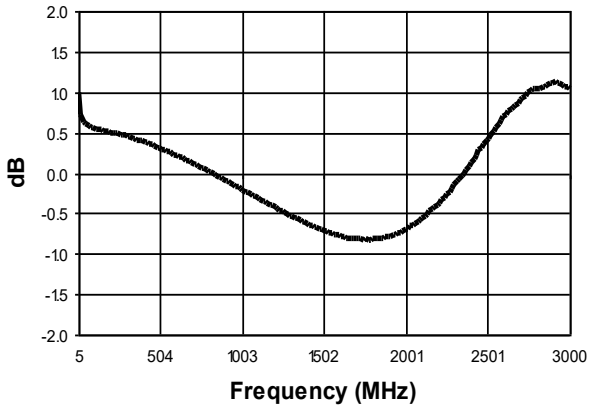
Insertion Loss 1 (Pin4 - Pin3)



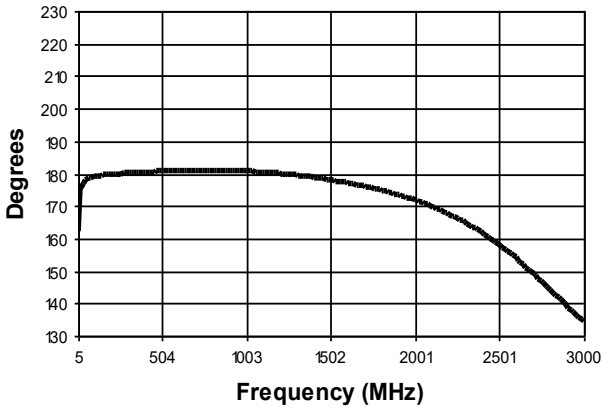
Insertion Loss 2 (Pin4 - Pin1)



Amplitude Balance

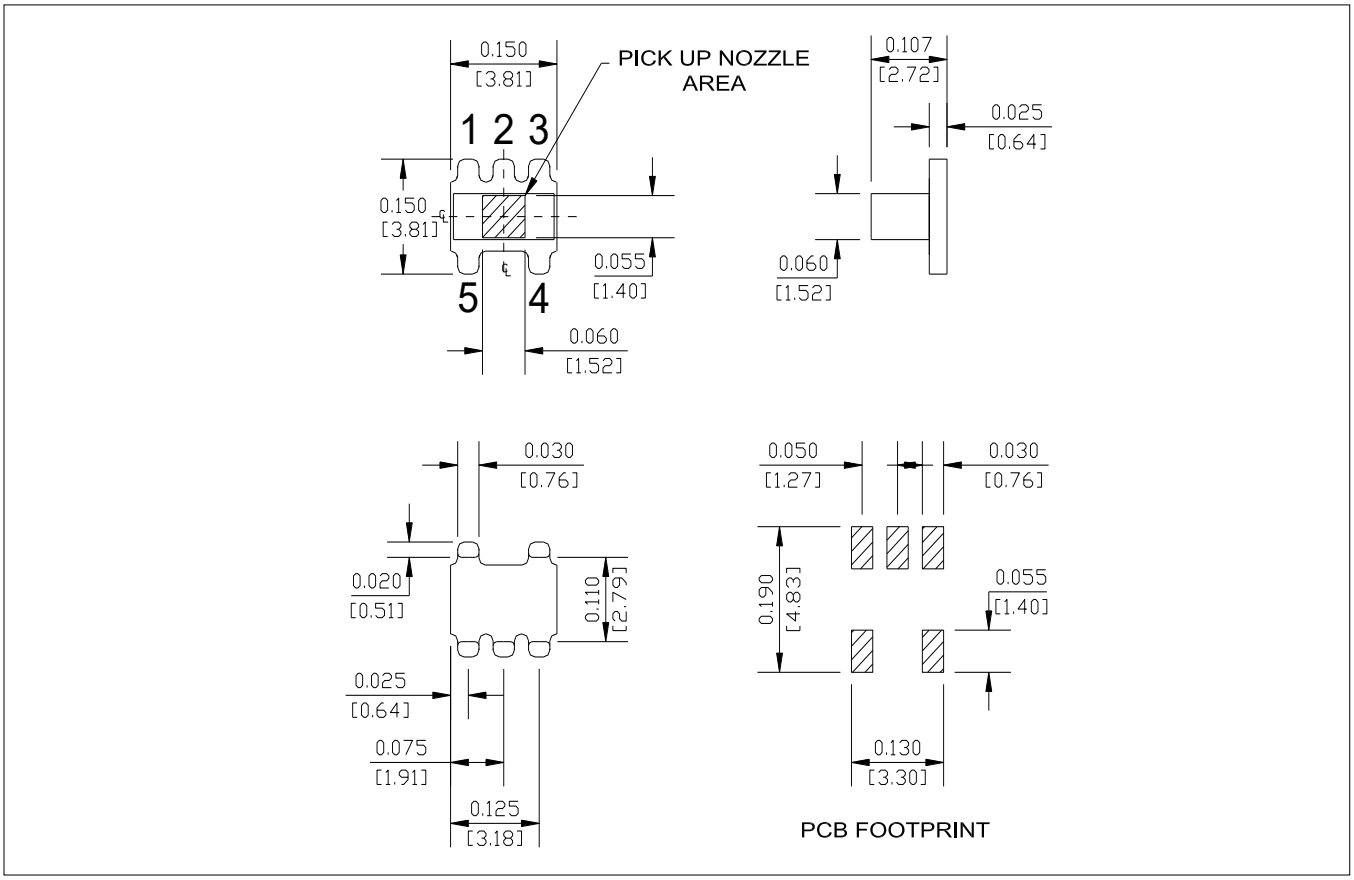


Phase Balance



Full temperature plots available on request

Outline Drawing



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 µm

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		