# MABA-009210-CT1760



# 1:1 Transmission Line Balun 50 - 1200 MHz

Rev. V3

#### **Features**

- Surface Mount
- 1:1 Impedance
- · Excellent temperature stability
- RoHS Compliant
- 260°C Reflow compatible

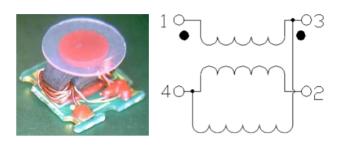
## **Description**

The MABA-009210-CT1760 is a 1:1 RF transmission line Transformer in a low cost surface mount package. Ideally suited for high volume CATV/Broadband application. Suitable for use in 50 Ohm and 75 Ohm systems.

### **Ordering Information**

Part Number	Package
MABA-009210-CT1760	900 piece reel
MABA-009210-CT17TB	Sample Board

#### **Functional Schematic**



#### **Pin Configuration**

Pin Number	Function
1	Primary Dot (input)
2	Secondary (o/p coupled)
3	Secondary Dot (o/p through)
4	Primary (ground)

# Electrical Specifications: Freq. = 50 - 1200 MHz, $T_A$ = +25°C, $Z_0$ = 75 $\Omega$

Parameter	Test Conditions	Units	Min.	Тур.	Max.
Insertion Loss 1 (Through) Pin 3 to pin 1	50 MHz 870 MHz 1002 MHz 1200 MHz	dB	_	0.13 0.53 0.63 0.83	0.33 0.93 1.18 1.93
Insertion Loss 2 (Coupled) Pin 2 to pin 1	50 MHz 870 MHz 1002 MHz 1200 MHz	dB	_	0.43 0.33 0.43 0.63	0.62 0.63 0.78 1.33
Amplitude Balance	50 MHz 870 MHz 1002 MHz 1200 MHz	dB	_	0.3 -0.1 -0.2 -0.2	-0.6 +0.7 +0.7 +0.8
Phase Balance	50 - 1002 MHz 1002 - 1200 MHz	۰	_	1.2 3.2	± 4.0 ± 8.0
Input Return Loss	50 - 500 MHz 500 - 1002 MHz 1002 - 1200 MHz	dB	18.0 17.5 11.0	23.0 19.0 18.0	_

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#### 1:1 Transmission Line Balun

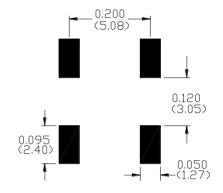
# 50 - 1200 MHz

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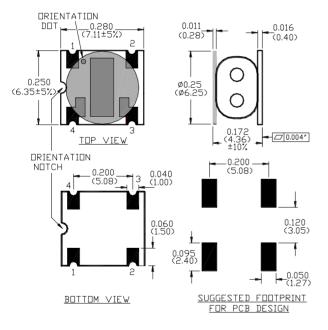
# **Absolute Maximum Ratings**

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	-	900		
Reel Size	mm	330		
Tape Width	mm	16.00		
Pitch	mm	12.00		
Ao	mm	6.80		
Во	mm	7.60		
Ko	mm	5.30		
Orientation	-	F24		
Reference Application Note ANI-019 for orientation				

- 1. Dimensions in inches (mm).
- 2. Tolerance: .xx ±0.02, .xxx 0.01 unless otherwise noted.
- 3. Model number and lot code are printed on the reel.
- 4. Plating finish: ENIG on both sides, 0.05 to 0.1  $\mu$ m gold over 3 to 6  $\mu$ m nickel

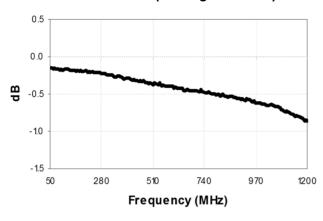


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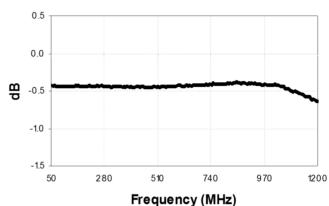
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# Typical Performance Curves: Electrical Specifications: $Z_0 = 75 \Omega$ , $T_A = 25$ °C, $P_{in} = 0 \text{ dBm}$

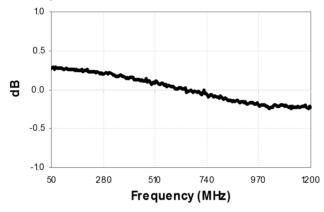
#### Insertion Loss 1: (through Pin 3-1)



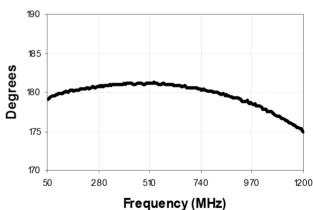
## Insertion Loss 2: (coupled Pin 2-1)



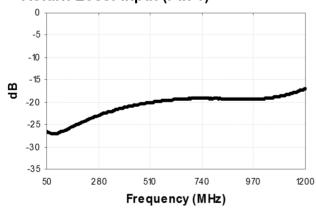
#### **Amplitude Balance**



#### **Phase Balance**



#### **Return Loss: Input (Pin 1)**



<u>Note:</u> The insertion loss graphs have minimum loss pad loss value subtracted from data. Loss value = -10.67dB.

Full temperature plots available on request

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