

1:1 Transmission Line Balun Transformer
50 - 1200 MHz

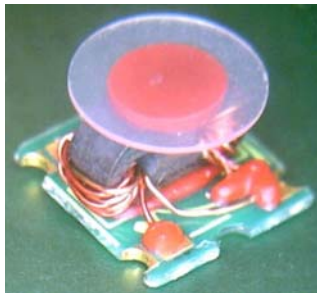
M/A-COM Products
Part Status: Released Rev V1

Features

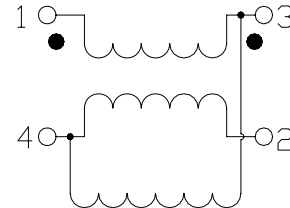
- Surface Mount
- 1:1 Impedance
- Excellent temperature stability
- RoHS Compliant
- 260°C Reflow compatible

Description

M/A-COM's 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



Schematic



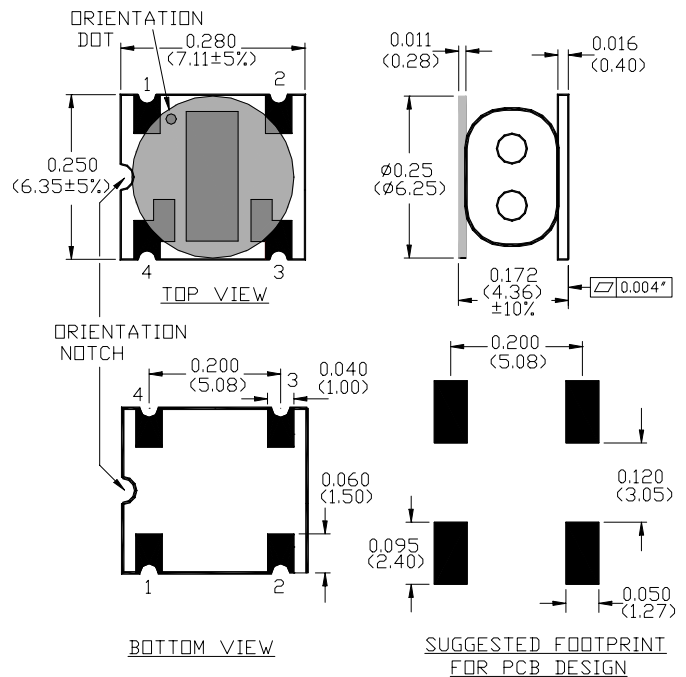
Pin Configuration

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

Ordering Information

Part Number	Package
MABA-009210-CT1760	900
MABA-009210-CT17TB	Customer Test Board

Case Style SM-118A



Dimensions in inches [mm] Tolerance: .xx ± .02, .xxx ± .010

Note: Reference Application Note **M513** for reel size information.

* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

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- **North America** Tel: 800.366.2266 / Fax: 978.366.2266
- **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
- **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298

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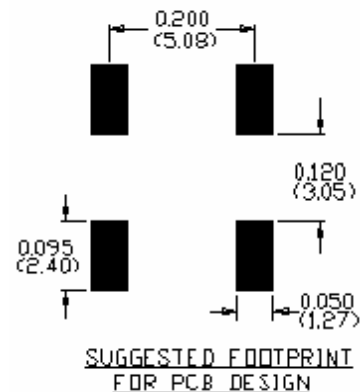
Electrical Specifications: $T_A = 25^\circ\text{C}$, 0dBm, $Z_0 = 75\Omega$

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

Absolute Maximum Ratings ^{1,2}

Parameter	Absolute Maximum
RF Power	250 mW
DC Current	30 mA
Operating/Storage Temperature	-40°C to +85°C

Recommended PCB Configuration



- Exceeding any one or combination of these limits may cause permanent damage to this device.
- M/A-COM does not recommend sustained operation near these survivability limits.

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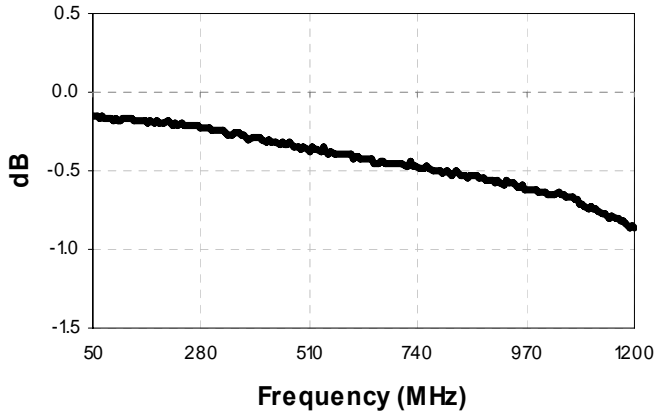
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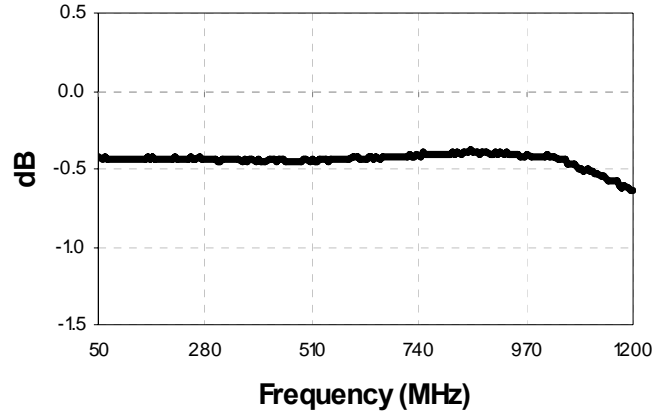
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Typical Performance: $T_A = 25^\circ\text{C}$, 0dBm, $Z_0 = 75\Omega$

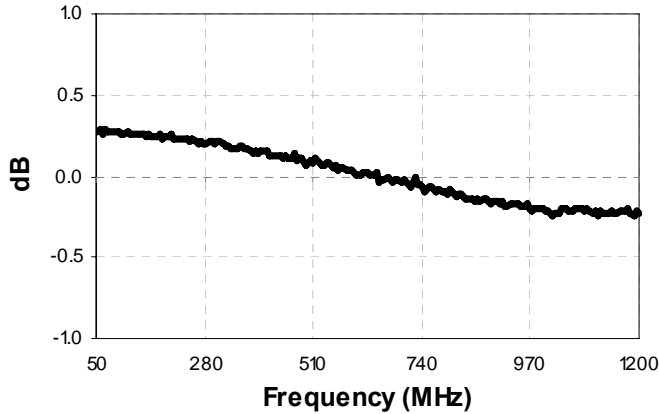
Insertion Loss 1: (through Pin 3-1)



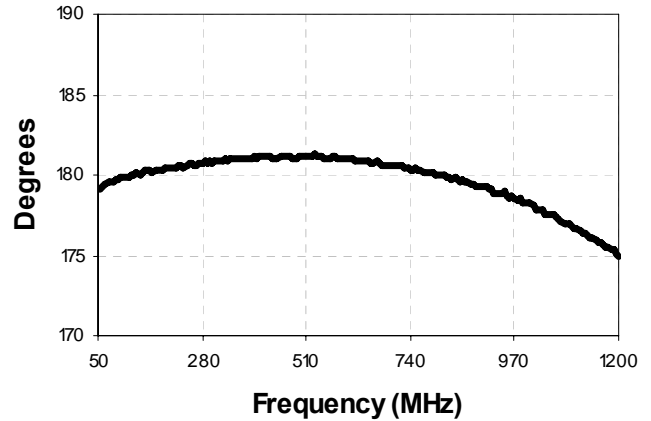
Insertion Loss 2: (coupled Pin 2-1)



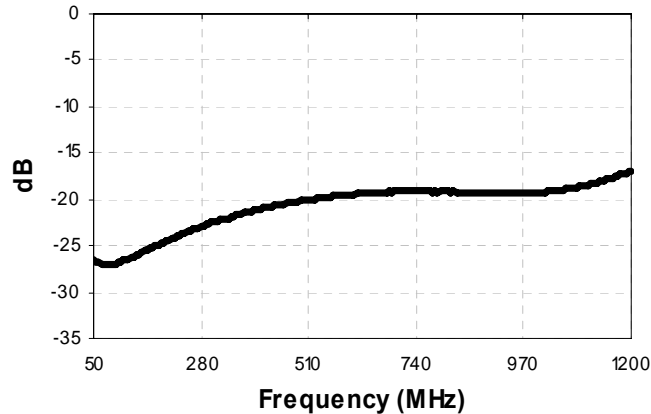
Amplitude Balance



Phase Balance



Return Loss: Input (Pin 1)



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

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