

2:1 Transmission Line Balun Transformer  
5 - 1200MHz

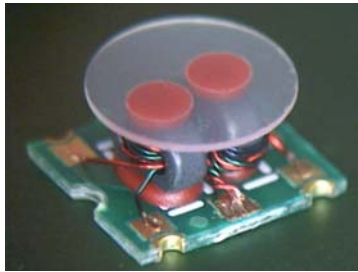
M/A-COM Products  
Part Status: Released Rev V1

## Features

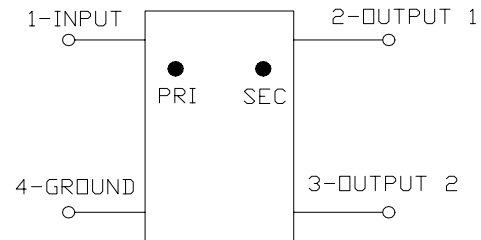
- Surface Mount
- 2:1 Impedance
- 75 Ohm
- Excellent temperature stability
- RoHS Compliant and lead free

## Description

M/A-COM's MABA-007681-CT2010 is a 2:1 RF Transmission line transformer in a low cost, surface mount package. Ideally suited for high volume CATV/Broadband applications.



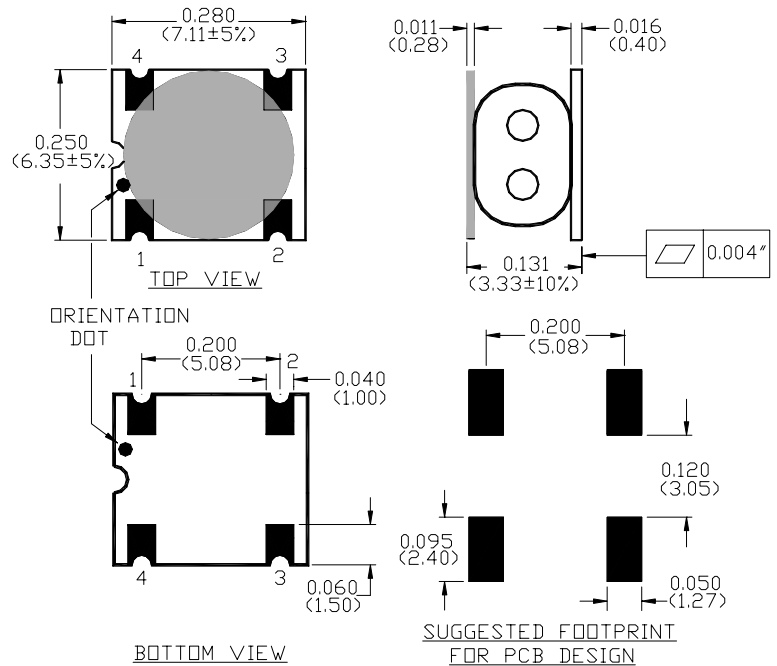
## Functional Block Diagram



## Pin Configuration

Pin No.	Function
1	Input (PRI dot)
2	Output 1 (SEC dot)
3	Output 2 (SEC)
4	Ground (PRI)

## Case Style: SM-118



Unless otherwise stated, dimensions in inches [mm]  
Tolerance: .xx ± .02, .xxx ± .010

## Ordering Information

Part Number	Description
MABA-007681-CT2010	900 piece reel
MABA-007681-CT20TB	Customer test board

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

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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:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75\Omega$**

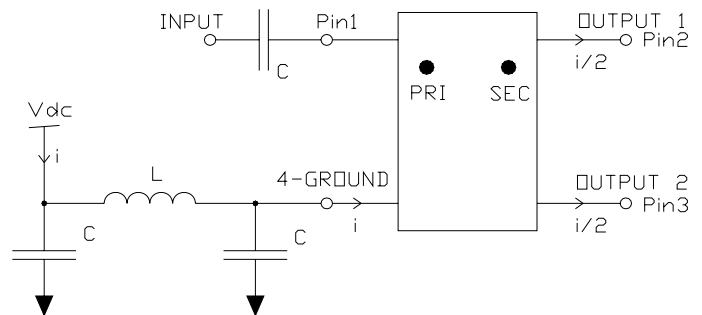
Parameter	Test Conditions	Units	Min	Typ	Max
Insertion Loss 1 Pin 1 to pin 2	5 - 50 MHz	dB	-	0.35	0.50
	50 - 1000 MHz	dB	-	0.60	1.10
	1000 - 1200 MHz	dB	-	0.60	1.40
Insertion Loss 2 Pin 1 to pin 3	5 - 50 MHz	dB	-	0.5	0.70
	50 - 1000 MHz	dB	-	0.9	1.50
	1000 - 1200 MHz	dB	-	1.8	2.20
Amplitude Unbalance	5 - 50 MHz	dB	-	$\pm 0.10$	$\pm 0.40$
	50 - 1000 MHz	dB	-	$\pm 0.30$	$\pm 1.50$
	1000 - 1200 MHz	dB	-	$\pm 0.60$	$\pm 1.80$
Phase Unbalance	5 - 50 MHz	$^\circ$	-	$\pm 0.2$	$\pm 1.50$
	50 - 1200 MHz	$^\circ$	-	$\pm 3.0$	$\pm 7.00$
Input Return Loss Single ended	5 - 50 MHz	dB	22	25	-
	50 - 1000 MHz	dB	14	22	-
	1000 - 1200 MHz	dB	8	17	-

**Absolute Maximum Ratings <sup>1,2</sup>**

Parameter	Absolute Maximum
RF Power	250mW
DC current	30mA
Operating Temperature	$-40^\circ\text{C}$ to $+85^\circ\text{C}$
Storage Temperature	$-40^\circ\text{C}$ to $+85^\circ\text{C}$

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

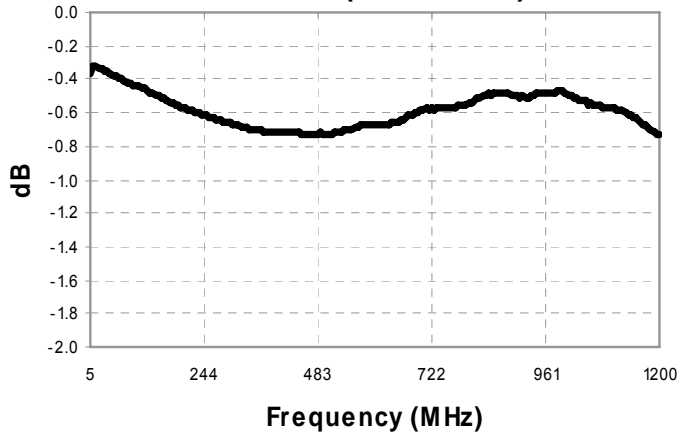
**Recommended DC bias circuit**



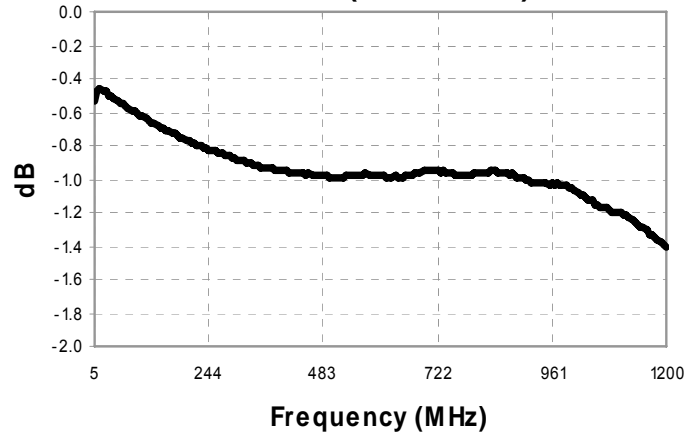
Cap/Ind	5-50MHz	50-1200MHz
C	100nF	10nF
L	10 $\mu\text{H}$	1 $\mu\text{H}$

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

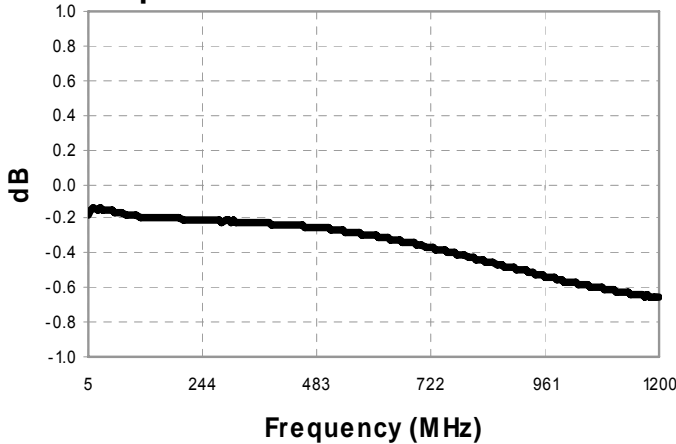
Insertion Loss 1 (Pin1 - Pin2)



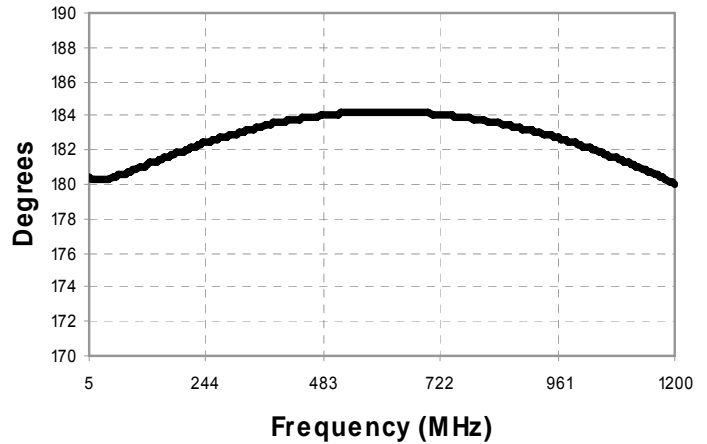
Insertion Loss 2 (Pin1 - Pin3)



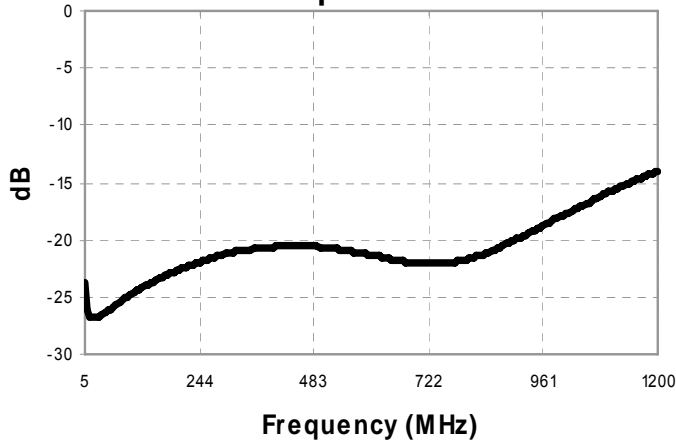
Amplitude Balance



Phase Balance



Return Loss: Input



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