

MABA-009180-500MHZ



E-Series RF 1:1 Transformer 0.4-500 MHz

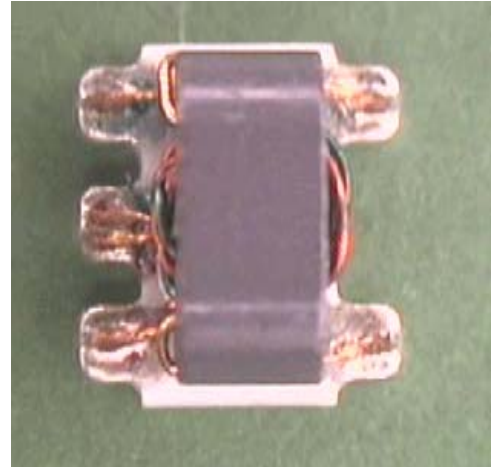
MABA-009180-500MHZ
V2

Features

- Surface Mount
- 1:1 Impedance Ratio
- CT on Secondary
- RoHS* Compliant 1:1 transformer
- Tape and reel packaging available

Description

M/A-COM's MABA-009180-500MHZ is a RoHS compliant 1:1 RF flux coupled transformer in a low cost, surface mount package. Ideally suited for high volume cellular and wireless applications. Typical applications include single to balanced mode conversion and impedance matching. The MABA-009180-500MHZ transformer is offered in an SM-22 surface mount package and is designed to be utilized in both standard reflow and high temperature soldering reflow profiles.



Electrical Specifications: $T_A = 25^\circ\text{C}$, $Z_0 = 50\Omega$ ¹

Parameter	Test Conditions	Frequency	Units	Min	Typ	Max
RF Frequency	—	0.4 - 500	MHz	—	—	—
Insertion Loss	—	1-100 0.5 - 300 .4-500	dB dB dB	—	—	1 2 3
Amplitude Imbalance	—	1-100 0.5 - 300	dB dB	— —	0.1 0.6	— —
Phase Imbalance	—	1-100 0.5 - 300	Degrees Degrees	— —	2 5	— —
				— —		

Ordering Information

Part Number	Package
MABA-009180-500MHZ	Tape and Reel (2000 piece reels)

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

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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Pin Configuration

Pin No.	Function
1	Secondary Dot
2	Secondary CT
3	Secondary
4	Primary
5	Primary Dot

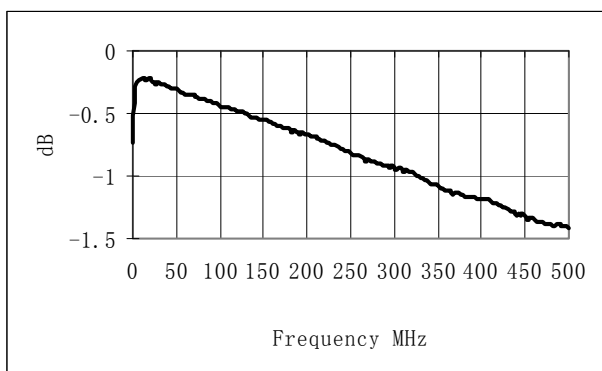
Absolute Maximum Ratings ¹

Parameter	Absolute Maximum
RF Power	250 mW
DC Current	240 mA ²
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +125°C

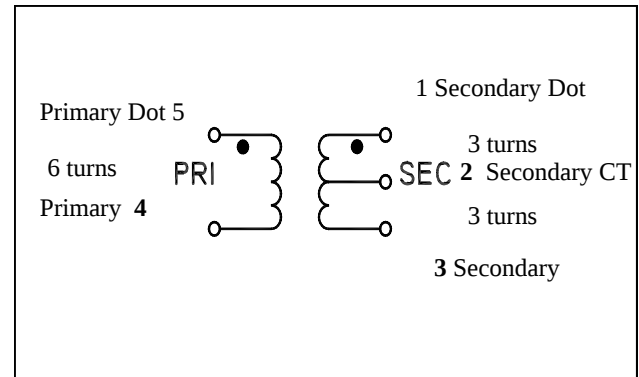
1. Operation of this device above any one of these parameters may cause permanent damage.
2. The maximum DC current applies to the secondary center tap in applications where the secondary is balanced.

Typical Performance Curves Over Extended

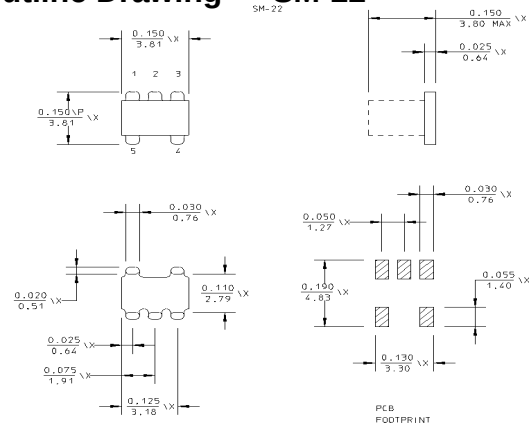
Insertion Loss



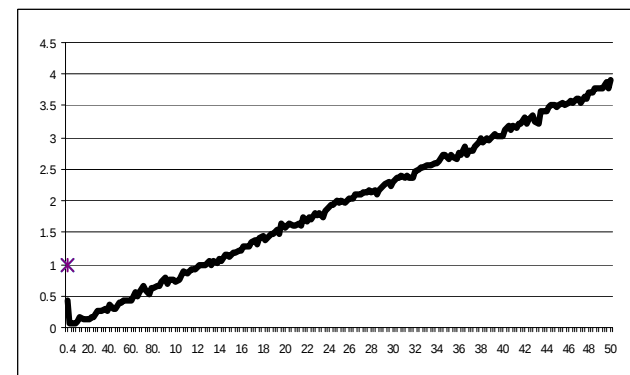
Schematic



Outline Drawing — SM-22

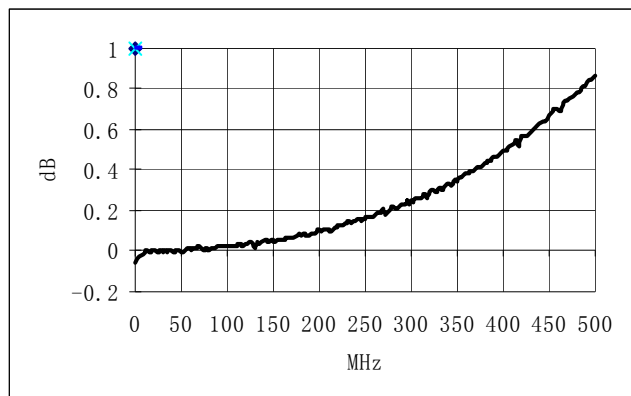


Phase Unbalance

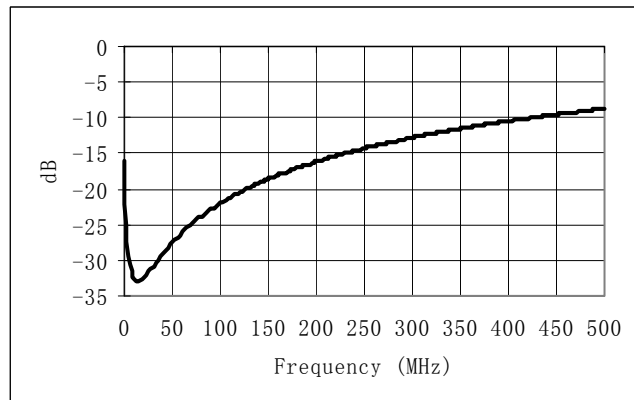


Typical Performance Curves Over Extended Bandwidth (0.4MHz - 500MHz)

Amplitude Unbalance



Input Return Loss



Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R.LOSS (dB)	AMPLITUDE BALANCE (dB)	PHASE BALANCE (Deg.)
0.40	0.73	16.13	0.09	0.41
2.00	0.33	27.28	0.05	0.06
5.00	0.25	30.53	0.04	0.08
10.00	0.22	32.76	0.04	0.11
50.00	0.31	27.46	0.03	0.38
100.00	0.44	21.95	0.02	0.73
200.00	0.67	16.18	0.03	1.59
300.00	0.93	12.79	0.18	2.31
400.00	1.19	10.46	0.44	3.02
500.00	1.41	8.72	0.86	3.91