

Transformer, 1:3 Flux Coupled Transformer 0.3 to 500 MHz

Rev. V3

#### **Features**

- Surface mount
- 1:3 Impedance ratio
- Centre tap on Secondary
- 260°C reflow compatible
- RoHS\* compliant and lead free
- Available on tape and reel

#### **Description**

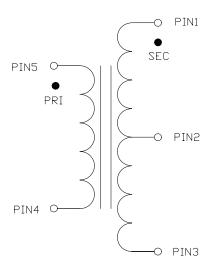
M/A-COM Technology Solutions MABA-009947-CF3160 is a 1:3 RF Flux coupled transformer in a low cost, surface mount package. Ideally suited for broadband CATV applications.



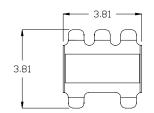
### **Pin Configuration**

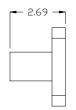
Pin no.	Function	
1	Secondary dot	
2	Secondary Centre Tap	
3	Secondary	
4	Primary	
5	Primary Dot	

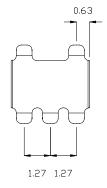
#### **Schematic**

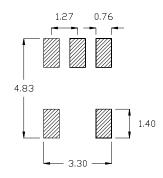


#### **Component Dimensions**









All Dimensions in mm. Tolerance ± 0.20mm Drawing not to scale

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- PRELIMINARY: Data Sheets containing information regarding a product MA-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.
- North America Tel: 800.366.2266 Europe Tel: +353.21.244.6400
- India Tel: +91.80.43537383
- China Tel: +86.21.2407.1588

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### Electrical Specifications: $T_A = 25$ °C, $Z_0 = 50\Omega$ , $P_{in} = 0$ dBm

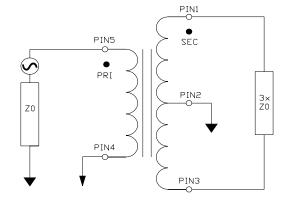
Parameter	Test Conditions	Units	Min	Тур	Max
Insertion Loss	0.3 - 5 MHz 5 - 250 MHz 250 - 500 MHz	dB dB dB	- - -	1.2 0.7 1.3	2.5 0.9 1.9
Amplitude Unbalance (Nominal 0dB)	0.3 - 100 MHz 100 - 250 MHz 250 - 500 MHz	dB dB dB	- - -	0.0 0.2 0.6	±0.2 ±0.4 ±1.5
Phase Unbalance (Nominal 180°)	0.3 - 100 MHz 100 - 250 MHz 250 - 500 MHz	0 0 0	- - -	0.0 0.8 3.5	±3 ±6 ±20
Input Return Loss	0.3 - 5 MHz 5 - 250 MHz 250 - 500 MHz	dB dB dB	7 18 10	11 22 15	- - -

## Recommended Maximum Ratings<sup>1,2</sup>

Parameter	Value
Input power	At least 250mW
DC current	At least 30mA
Operating Temperature	-20°C to +85°C
Storage Temperature	-55°C to +100°C

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

## **Application Circuit**



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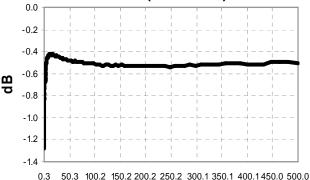


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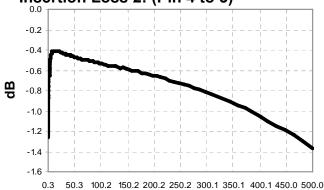
### Typical Performance Curves: $T_A = 25^{\circ}C$ , $Z_0 = 50\Omega$ , $P_{in} = 0$ dBm





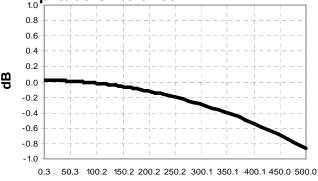
#### Frequency (MHz)

### Insertion Loss 2: (Pin 4 to 3)



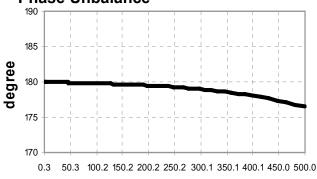
Frequency (MHz)

#### **Amplitude Unbalance**



#### Frequency (MHz)

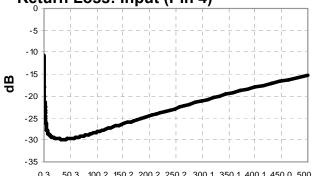
#### Phase Unbalance



Frequency (MHz)

#### **Return Loss: Input (Pin 4)**

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#### Frequency (MHz)

50.3 100.2 150.2 200.2 250.2 300.1 350.1 400.1 450.0 500.0

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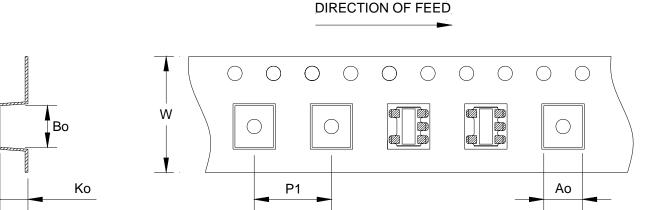
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#### **Tape & Reel Information**



Item	Dimension	
Ao	4.00mm +/- 0.1mm	
Во	4.00mm +/- 0.1mm	
Ko	2.90mm +/- 0.1mm	
W	12.00mm +/- 0.3mm	
P1	8.00mm +/- 0.1mm	

#### **Ordering Information**

Part number	Description		
MABA-009947-CF3160	2000 piece reel		
MABA-009947-CF31TB	Customer Test Board		

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