

## 1:9 Flux Coupled Transformer 5 - 90 MHz

Rev. V3

### Features

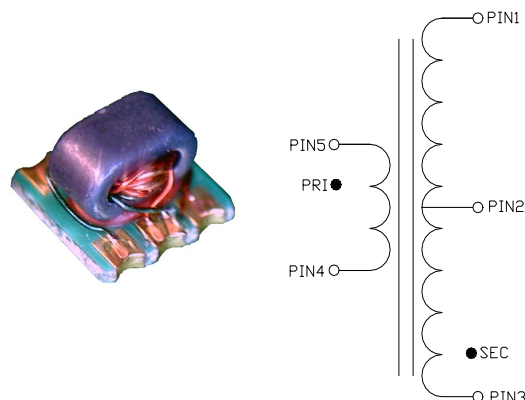
- 1:9 Impedance Ratio
- Surface Mount Package
- Excellent Temperature Stability
- Excellent Amplitude & Phase Balance
- Can Be Used In Both 50  $\Omega$  & 75  $\Omega$  Systems
- 260°C Reflow Compatible
- RoHS\* Compliant & Lead Free
- Available on Tape & Reel

### Description

The MABA-010181-CT9A40 is a 1:9 RF flux coupled transformer in a surface mount package.

Ideally suited for broadband CATV applications.

### Schematic



### Pin Configuration

| Pin # | Function             |
|-------|----------------------|
| 1     | Secondary            |
| 2     | Secondary Centre Tap |
| 3     | Secondary Dot        |
| 4     | Primary              |
| 5     | Primary Dot          |

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

| Parameter                          | Frequency (MHz)   | Units | Min.     | Typ.     | Max.      |
|------------------------------------|-------------------|-------|----------|----------|-----------|
| Insertion Loss                     | 5 - 90            | dB    | —        | 1.3      | 1.8       |
| Amplitude Unbalance (Nominal 0 dB) | 5 - 90            | dB    | —        | 0.1      | $\pm 0.3$ |
| Phase Unbalance (Nominal 180°)     | 5 - 90            | °     | —        | 0.2      | $\pm 2.0$ |
| Input Return Loss                  | 5 - 90<br>50 - 90 | dB    | 13<br>10 | 16<br>13 | —         |

### Ordering Information

| Part #             | Description         |
|--------------------|---------------------|
| MABA-010181-CF9A40 | 2000 piece reel     |
| MABA-010181-CF9ATB | customer test board |

### Recommended Maximum Ratings

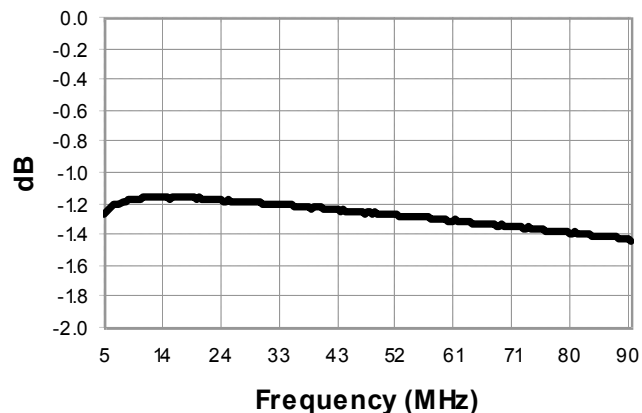
| Parameter                  | Value            |
|----------------------------|------------------|
| Input Power                | >28 dBm (631 mW) |
| DC Current, (tested @ 5 V) | >600 mA          |
| Operating Temperature      | -40°C to +85°C   |
| Storage Temperature        | -55°C to +100°C  |

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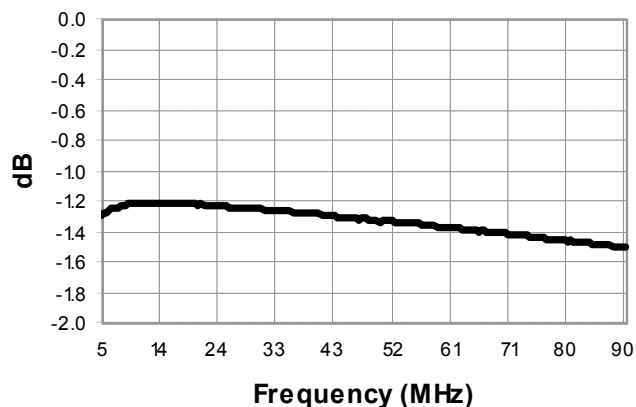
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Typical Performance Curves:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 75\ \Omega$ ,  $P_{IN} = 0\ \text{dBm}$

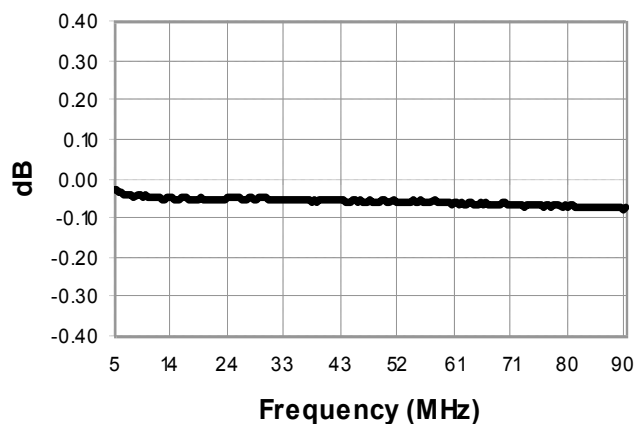
Insertion Loss 1: (Pin 5 to 3)



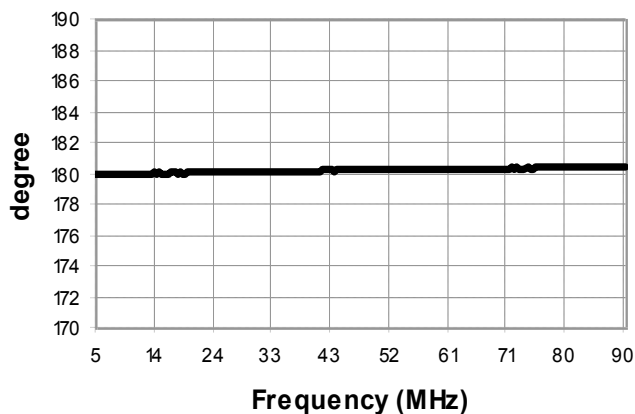
Insertion Loss 2: (Pin 5 to 1)



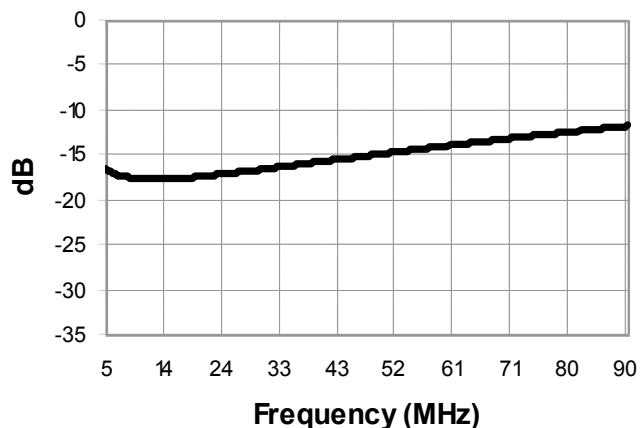
Amplitude Balance



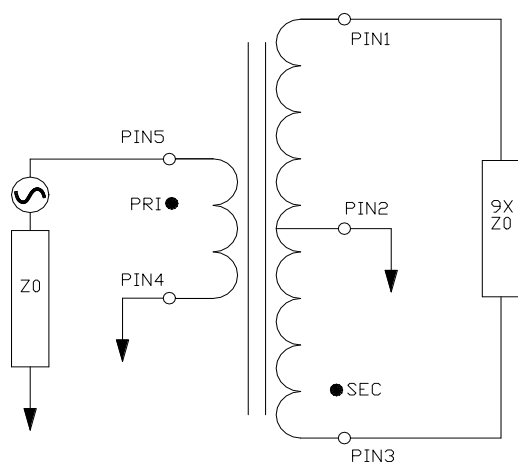
Phase Balance



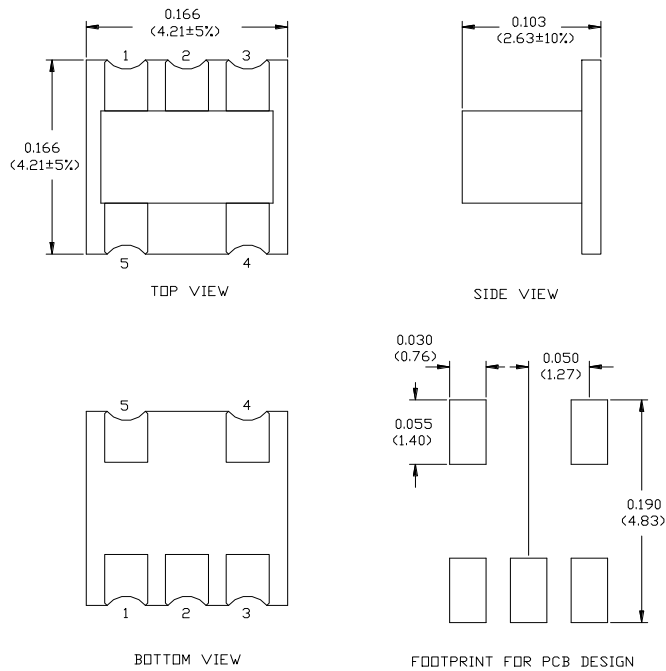
Return Loss: Input (Pin 5)



### Application Circuit

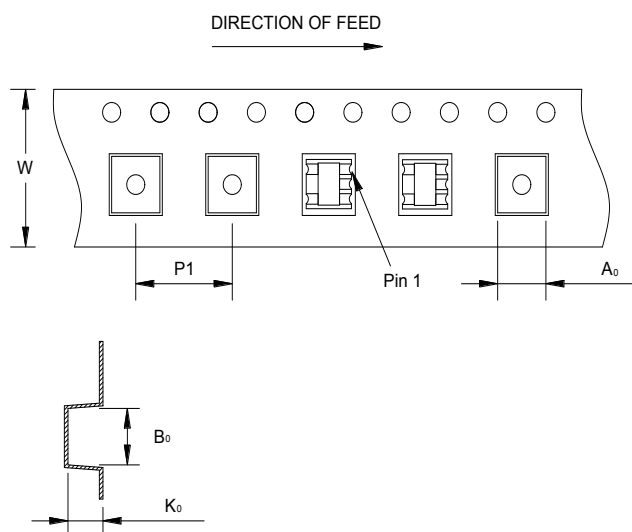


### Outline Drawing



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

### Reel Orientation



### Tape & Reel Information

| Item | Dimension          |
|------|--------------------|
| Ao   | 4.50 mm, +/-0.1 mm |
| Bo   | 4.50 mm, +/-0.1 mm |
| Ko   | 2.73 mm, +/-0.1 mm |
| W    | 12.0 mm, +/-0.3 mm |
| P1   | 8.0 mm, +/-0.1 mm  |

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