

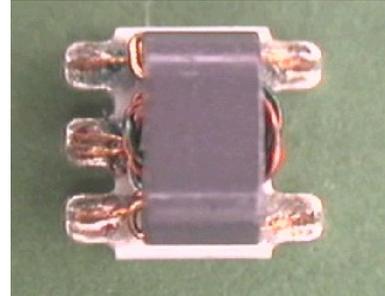
Features

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

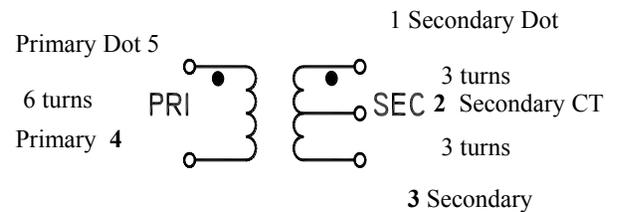
Description

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.



Schematic



Ordering Information

| Part Number | Package |
|--------------------|------------------|
| MABA-009180-500MHZ | 2000 piece reels |

Pin Configuration

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

* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

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

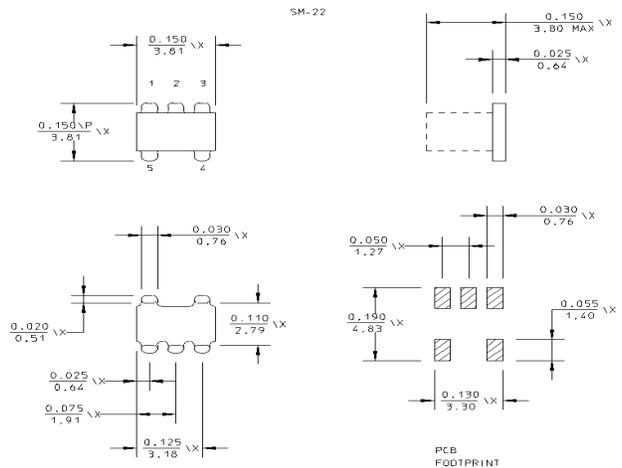
| Parameter | Test Conditions | Units | Min | Typ | Max |
|---------------------|-----------------|---------|-----|-----|-----|
| RF Frequency | 0.4 - 500 | MHz | — | — | — |
| Insertion Loss | 1-100 | dB | — | — | 1 |
| | 0.5 - 300 | | | | 2 |
| | 0.4-500 | | | | 3 |
| Amplitude Imbalance | 1-100 |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

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.

Outline Drawing — SM-22

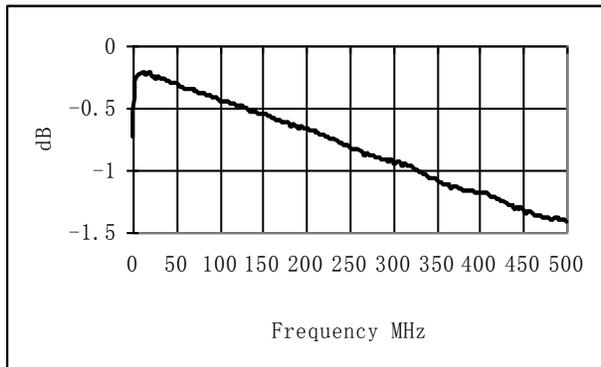


E-Series RF 1:1 Transformer 0.4 - 500 MHz

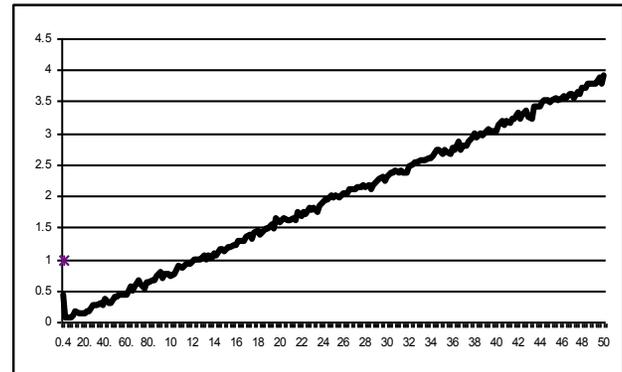
Rev. V2

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

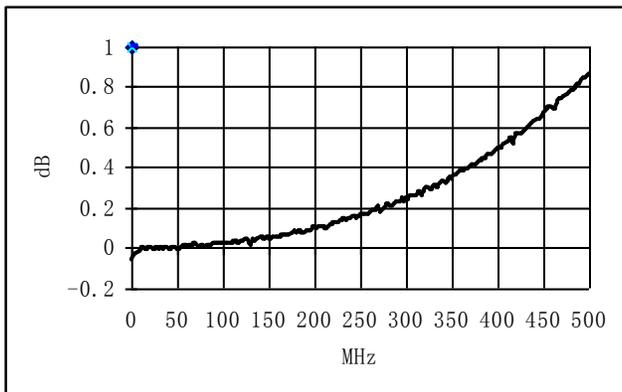
Insertion Loss



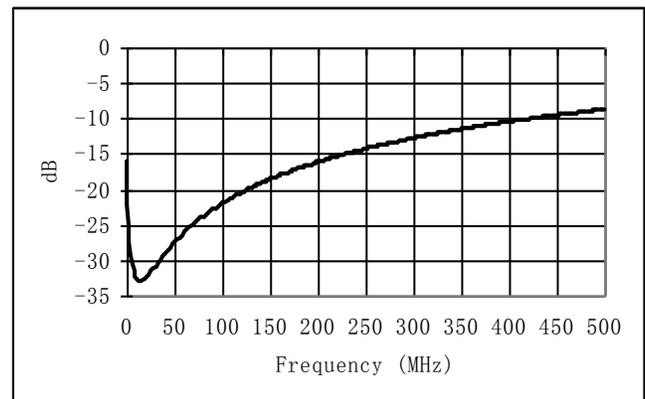
Phase Unbalance



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 |

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