

RF 1:1 Flux Coupled Transformer 0.3 - 200 MHz

Rev. V8

Features

- Surface Mount
- 1:1 impedance
- · Available on Tape and Reel
- · RoHS Compliant and Lead free
- 260°C Reflow Compatible

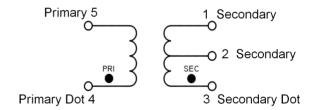
Description

MABAES0060 is a RoHS compliant device that is equivalent to the ETC1-1T transformer. This device is a 1:1 RF flux coupled transformer in a low cost, SM-22 surface mount package and is designed to be utilized in both standard reflow and high temperature soldering

Ideally suited for high volume cellular and wireless applications. Typical applications include single to balanced mode conversion and impedance matching.



Functional Schematic



Ordering Information

| Part Number | Package |
|-------------|-------------|
| MABAES0060 | Tape & Reel |

Pin Configuration

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



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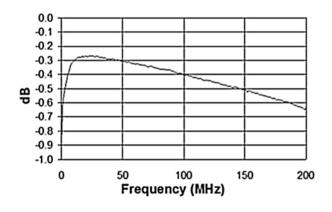
Rev. V8

Electrical Specifications: Freq. = 0.3 - 200 MHz, $T_A = 25$ °C, $Z_0 = 50 \Omega$, $P_{in} = 0 \text{ dBm}$

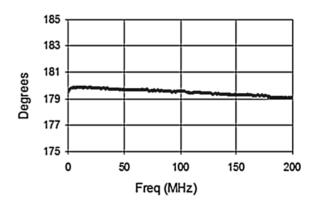
| Parameter | Test Conditions | Units | Min. | Тур. | Max. |
|-------------------|---|--------|------|------------|--------------|
| Insertion Loss | 0.3 - 200 MHz | dB | _ | _ | 1.5 |
| Amplitude Balance | 0.3 - 50 MHz 0.3 - 200 MHz | AB — — | | 0.1 0.5 | |
| Phase Balance | 0.3 - 50 MHz 0.3 - 200 MHz Degrees — | | _ | 1.0 5.0 | |
| Input Return Loss | 0.3 - 200 MHz 5 - 120 MHz | dB | _ | _ | 10.0 15.0 |

Typical Performance Curves

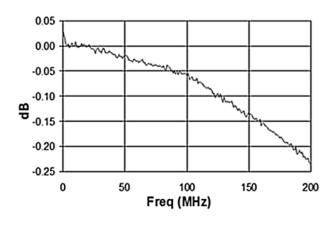
Insertion Loss



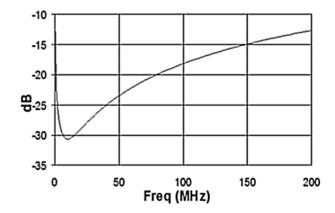
Phase Unbalance



Amplitude Unbalance



Input Return Loss





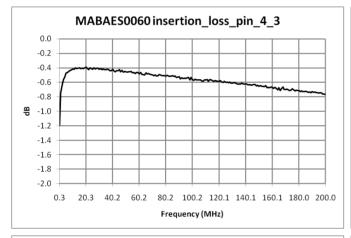
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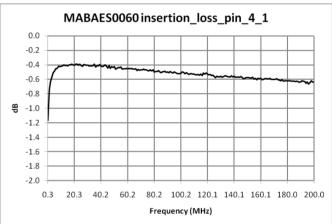
Rev. V8

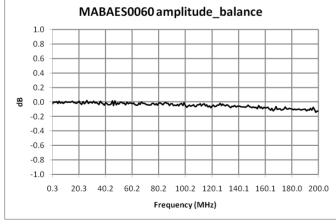
Electrical Specifications: Freq. = 0.3 - 200 MHz, T_A = 25°C, Z_0 = 75 Ω , P_{in} = 0 dBm

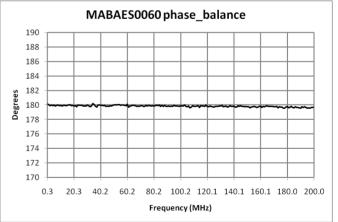
| Parameter | Test Conditions | Units | Min. | Тур. | Max. |
|-------------------|---|-------|---------------|------------|------------|
| Insertion Loss | 0.3 - 5 MHz 5 - 200 MHz | dB | _ | _ | 1.7 0.9 |
| Amplitude Balance | 0.3 - 50 MHz 0.3 - 200 MHz dB — | | _ | 0.1 0.5 | |
| Phase Balance | 0.3 - 50 MHz 0.3 - 200 MHz Degrees — | | _ | 2.0 5.0 | |
| Input Return Loss | | | 7 19 15 | _ | _ |

Typical Performance Curves









MABAES0060



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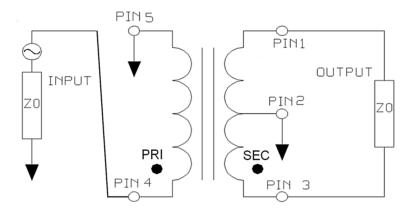
Rev. V8

Absolute Maximum Ratings^{1,2}

| Parameter | Units |
|-----------------------|----------------|
| Input RF Power | 500 mW |
| DC Current | 500 mA |
| Operating Temperature | -40°C to +85°C |

- 1. Exceeding any one or combination of these limits may cause permanent damage to this device.
- 2. The maximum DC current applies to the secondary center tap in applications where the secondary is balanced.

Application Schematic



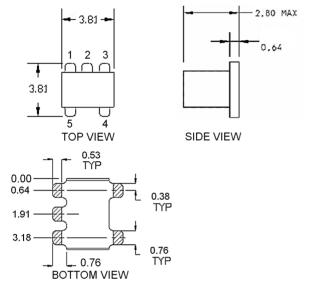
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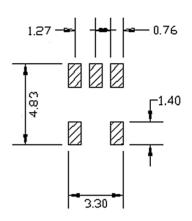
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Rev. V8

Outline Drawing



PCB Layout

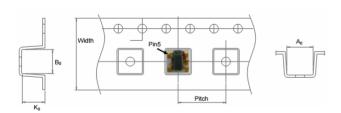


Dimensions in mm.

Tolerance: ±0.38 mm unless otherwise noted. Model number and lot code are printed on the reel.

Lead plating: ENIG on both sides, 0.05 to 0.1 μm gold over 3 to 6 μm nickel.

Carrier Tape Orientation



Tape & Reel Information

| Parameter | Units | Value | |
|--|-------|-------|--|
| Qty per reel | - | 2000 | |
| Reel Size | mm | 330 | |
| Tape Width | mm | 12 | |
| Pitch | 8 | | |
| Orientation | - | F5 | |
| Reference Application Note ANI-019 for orientation | | | |

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