MABA-009387-ES0040

RF 2:1 Flux Coupled Transformer
1.0 - 350 MHz

Features
- Surface mount
- 2:1 impedance
- CT on Secondary
- RoHS* Compliant
- 260°C reflow compatible.
- Available on Tape and Reel

Description
MABAES0040 is a 2:1 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.

Schematic

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MABA-009387-ES0040</td>
<td>2000 piece reel</td>
</tr>
</tbody>
</table>

Pin Configuration

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Secondary Dot</td>
</tr>
<tr>
<td>2</td>
<td>Secondary CT</td>
</tr>
<tr>
<td>3</td>
<td>Secondary</td>
</tr>
<tr>
<td>4</td>
<td>Primary</td>
</tr>
<tr>
<td>5</td>
<td>Primary Dot</td>
</tr>
</tbody>
</table>

Absolute Maximum Ratings\(^1\),\(^2\)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC Power</td>
<td>250 mW</td>
</tr>
<tr>
<td>DC Current</td>
<td>30 mA</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55°C to +125°C</td>
</tr>
</tbody>
</table>

1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

SM-138 package

Electrical Specifications: \( T_A = 25°C, Z_0 = 50 \, \Omega \)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Units</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Frequency</td>
<td>1 - 350</td>
<td>MHz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>1 - 150</td>
<td>dB</td>
<td>0.7</td>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>150 - 250</td>
<td></td>
<td>1.6</td>
<td>2.6</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>250 - 350</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amplitude Unbalance</td>
<td>1 - 150</td>
<td>dB</td>
<td>0.3</td>
<td>0.7</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>150 - 250</td>
<td></td>
<td>0.7</td>
<td>1.5</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>250 - 350</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase Unbalance</td>
<td>1 - 250</td>
<td>Degree</td>
<td>2.5</td>
<td>8.0</td>
<td>12.0</td>
</tr>
<tr>
<td></td>
<td>250 - 350</td>
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</table>

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Typical Performance Curves

Insertion Loss

-3.0  -2.5  -2.0  -1.5  -1.0  -0.5  0.0
1  59  117  175  233  292  350
Frequency (MHz)

Phase Unbalance

200.0  190.0  180.0  170.0  160.0  150.0  140.0
1  59  117  175  233  292  350
Frequency (MHz)

Amplitude Unbalance

-0.5  0.0  0.5  1.0  1.5  2.0
1  59  117  175  233  292  350
Frequency (MHz)
RF 2:1 Flux Coupled Transformer
1.0 - 350 MHz

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