1:2 Flux Coupled Transformer
5 - 200 MHz

Features
- Surface Mount
- 1:2 Impedance
- Excellent amplitude and phase Balance
- Available on Tape and Reel
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible

Description
The MABACT0068 is a 1:2 RF Flux coupled balun transformer in a low cost surface mount package. Ideally suited for all CATV Broadband and FTTx applications. Suitable for use in 50 and 75 Ohm systems.

Functional Schematic

Pin Configuration

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Secondary Dot (output 1)</td>
</tr>
<tr>
<td>2</td>
<td>Centre Tap (ground)</td>
</tr>
<tr>
<td>3</td>
<td>Secondary (output 2)</td>
</tr>
<tr>
<td>4</td>
<td>Primary (output 2)</td>
</tr>
<tr>
<td>5</td>
<td>Primary Dot (input)</td>
</tr>
</tbody>
</table>

Electrical Specifications: Freq. = 5 - 200 MHz, $T_A = 25^\circ C$, $Z_0 = 75 \, \Omega$, $P_{in} = 0 \, dBm$

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Conditions</th>
<th>Units</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance Ratio</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>1:2</td>
<td>—</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>5 - 65 MHz</td>
<td>dB</td>
<td>0.3</td>
<td>0.4</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>65 - 200 MHz</td>
<td></td>
<td>0.5</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>5 - 65 MHz</td>
<td>dB</td>
<td>0.02</td>
<td>±0.15</td>
<td></td>
</tr>
<tr>
<td>Phase Balance (ref value 180°)</td>
<td>5 - 50 MHz</td>
<td>dB</td>
<td>0.0</td>
<td>±2.0</td>
<td></td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>5 - 200 MHz</td>
<td>dB</td>
<td>18</td>
<td>22</td>
<td>—</td>
</tr>
</tbody>
</table>

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MABACT0068</td>
<td>2000 piece reel</td>
</tr>
</tbody>
</table>

1. All sample boards include 5 loose parts.

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input RF Power</td>
<td>250 mW</td>
</tr>
<tr>
<td>DC Current</td>
<td>240 mA</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°C</td>
</tr>
</tbody>
</table>

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5 - 200 MHz

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

**Insertion Loss 1 (through pin 5 to pin 1)**

![Insertion Loss 1 graph](image1)

**Insertion Loss 2 (coupled pin 5 to pin 3)**

![Insertion Loss 2 graph](image2)

**Amplitude Unbalance**

![Amplitude Unbalance graph](image3)

**Phase Balance**

![Phase Balance graph](image4)

**Input Return Loss (Pin5)**

![Input Return Loss graph](image5)

Full temperature plots available on request.
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Part Outline Drawing

PCB layout

Application Schematics

Carrier Tape Orientation

Tape & Reel Information

1. Dimensions in mm
2. Tolerance: ±0.2 mm unless otherwise noted
3. Model number and lot code are printed on the reel
4. Plating finish: ENIG

Parameter | Units | Value
--- | --- | ---
Qty per reel | - | 2000
Reel Size | mm | 330
Tape Width | mm | 12.00
Pitch | mm | 8.00
Orientation | - | F31

Reference Application Note ANI-019 for orientation
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