MABA-011002

4:1 Step Down Balun Transformer
5 - 200 MHz

Features
- Surface Mount Package
- 4:1 Step Down Transformer
- Excellent performance under DC bias current, also when current flows is imbalanced through outputs
- 260°C Reflow Compatible
- RoHS* Compliant, lead free
- Available on Tape and Reel.

Description
The MABA-011002 is a 4:1 step down balun transformer. This transformer is ideally suited for CATV Broadband applications.

Electrical Specifications: Freq. = 5 - 200 MHz, T<sub>A</sub> = +25°C, Z<sub>0</sub> = 75 Ω, P<sub>IN</sub> = 0 dBm

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency Test Conditions (MHz)</th>
<th>Units</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance Ratio</td>
<td>—</td>
<td>ratio</td>
<td>—</td>
<td>4:1</td>
<td>—</td>
</tr>
<tr>
<td>Insertion Loss (pin 6 - pin 1)</td>
<td>5 - 50 50 - 150 150 - 200</td>
<td>dB</td>
<td>—</td>
<td>0.4</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>5 - 50 50 - 150 150 - 200</td>
<td></td>
<td>1.0</td>
<td>2.2</td>
<td>3.1</td>
</tr>
<tr>
<td>Insertion Loss (pin 6 - pin 3)</td>
<td>5 - 50 50 - 150 150 - 200</td>
<td>dB</td>
<td>—</td>
<td>0.4</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>5 - 50 50 - 150 150 - 200</td>
<td></td>
<td>1.1</td>
<td>2.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>5 - 50 50 - 150 150 - 200</td>
<td>dB</td>
<td>—</td>
<td>0.0</td>
<td>±0.4</td>
</tr>
<tr>
<td></td>
<td>5 - 50 50 - 150 150 - 200</td>
<td></td>
<td>0.0</td>
<td>±1.0</td>
<td>±1.4</td>
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<tr>
<td>Phase Balance</td>
<td>5 - 50 50 - 200</td>
<td>°</td>
<td>—</td>
<td>0.6</td>
<td>±4</td>
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<tr>
<td></td>
<td>5 - 25 25 - 50 50 - 150 150 - 200</td>
<td></td>
<td>0.8</td>
<td>±9</td>
<td></td>
</tr>
<tr>
<td>Input Return Loss (pin 6)</td>
<td>5 - 25 25 - 50 50 - 150 150 - 200</td>
<td>dB</td>
<td>17</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 15 5 9 3 5</td>
<td></td>
<td>12</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17 15 5 9 3 5</td>
<td></td>
<td>12</td>
<td>15</td>
<td></td>
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<td></td>
<td>17 15 5 9 3 5</td>
<td></td>
<td>17</td>
<td>20</td>
<td></td>
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</tbody>
</table>

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>MABA-011002</td>
<td>900 piece reel</td>
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<tr>
<td>MABA-011002-TB</td>
<td>Customer Evaluation Board</td>
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Recommended Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
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<tbody>
<tr>
<td>Input RF Power</td>
<td>1 W</td>
</tr>
<tr>
<td>Internal Load Dissipation</td>
<td>0.125 W</td>
</tr>
<tr>
<td>DC Bias Current</td>
<td>&gt;900 mA</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C - +85°C</td>
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</tbody>
</table>
Typical Performance Curves

**Insertion loss (Pin6-1)**

**Insertion loss (pin6-3)**

**Amplitude Balance**

**Phase Balance**

**Input Return Loss (pin6)**
4:1 Step Down Balun Transformer
5 - 200 MHz

Application Circuit

Outline Drawing

PCB Layout

Outline Drawing

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

Tape & Reel Information

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<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Value</th>
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<tbody>
<tr>
<td>Qty per reel</td>
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<td>900</td>
</tr>
<tr>
<td>Reel Size</td>
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<tr>
<td>Tape Width</td>
<td>mm</td>
<td>16.00</td>
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<tr>
<td>Pitch</td>
<td>mm</td>
<td>12.00</td>
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<tr>
<td>Ao</td>
<td>mm</td>
<td>6.60</td>
</tr>
<tr>
<td>Bo</td>
<td>mm</td>
<td>7.40</td>
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<tr>
<td>Ko</td>
<td>mm</td>
<td>4.10</td>
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<tr>
<td>Orientation</td>
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Reference Application Note ANI-019 for orientation