4:1 Step-down Flux Coupled Transformer
5 - 200 MHz

Features
- 4:1 Step-down Flux Coupled
- Surface Mount Package
- All Wires are Welded to the PCB Carrier
- 260°C Reflow Compatible
- RoHS v Compliant

Description
The MABA-008354-CF4A40 is a 4:1 flux coupled step down transformer in a surface mount package.

Ideally suited for high volume CATV/Broadband applications. Suitable for use in 50 Ω and 75 Ω systems.

Electrical Specifications: $T_A = 25°C$, $Z_0 = 75$ Ω, $P_{IN} = 0$ dBm

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency</th>
<th>Units</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion Loss</td>
<td>5 - 35 MHz</td>
<td>dB</td>
<td>0.8</td>
<td>1.1</td>
<td>1.6</td>
</tr>
<tr>
<td></td>
<td>35 - 85 MHz</td>
<td></td>
<td>1.1</td>
<td>2.2</td>
<td>3.6</td>
</tr>
<tr>
<td></td>
<td>85 - 200 MHz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>5 - 85 MHz</td>
<td>dB</td>
<td>—</td>
<td>±0.01</td>
<td>±0.4</td>
</tr>
<tr>
<td></td>
<td>5 - 200 MHz</td>
<td></td>
<td>±0.09</td>
<td>±0.4</td>
<td>±0.8</td>
</tr>
<tr>
<td>Phase Balance</td>
<td>5 - 85 MHz</td>
<td>°</td>
<td>—</td>
<td>±0.2</td>
<td>±4</td>
</tr>
<tr>
<td></td>
<td>85 - 200 MHz</td>
<td></td>
<td>±0.4</td>
<td>±5</td>
<td></td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>5 - 35 MHz</td>
<td>dB</td>
<td>15</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>35 - 85 MHz</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>85 - 200 MHz</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ordering Information

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MABA-008354-CF4A40</td>
<td>2000 piece reel</td>
</tr>
<tr>
<td>MABA-008354-CF4ATB</td>
<td>customer test board</td>
</tr>
</tbody>
</table>

Reference Application Note M513 for reel size information.

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Power</td>
<td>1 W</td>
</tr>
<tr>
<td>DC current</td>
<td>250 mA per arm</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +60°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C to +85°C</td>
</tr>
</tbody>
</table>
Typical Performance Curves: \( T_A = 25^\circ C\), \( Z_0 = 75 \, \Omega\), \( P_{in} = 0 \, \text{dBm} \)

**Insertion Loss 1 (pin 4 - pin 1)**

\[
\text{Frequency (MHz)} \quad \text{dB}
\]

\[
5 \quad -0.0 \quad -0.5 \quad -1.0 \quad -1.5 \quad -2.0 \quad -2.5 \quad -3.0 \quad -3.5 \quad -4.0 \quad -4.5 \quad -5.0
\]

**Insertion Loss 2 (pin 4 - pin 3)**

\[
\text{Frequency (MHz)} \quad \text{dB}
\]

\[
5 \quad -0.0 \quad -0.5 \quad -1.0 \quad -1.5 \quad -2.0 \quad -2.5 \quad -3.0 \quad -3.5 \quad -4.0 \quad -4.5 \quad -5.0
\]

**Amplitude Balance**

\[
\text{Frequency (MHz)} \quad \text{dB}
\]

\[
5 \quad -1.0 \quad -0.8 \quad -0.6 \quad -0.4 \quad -0.2 \quad 0.0 \quad 0.2 \quad 0.4 \quad 0.6 \quad 0.8 \quad 1.0
\]

**Phase Balance**

\[
\text{Frequency (MHz)} \quad \text{degree}
\]

\[
5 \quad 175 \quad 176 \quad 177 \quad 178 \quad 179 \quad 180 \quad 181 \quad 182 \quad 183 \quad 184 \quad 185
\]

**Return Loss: Input**

\[
\text{Frequency (MHz)} \quad \text{dB}
\]

\[
5 \quad -2.5 \quad -2.0 \quad -1.5 \quad -1.0 \quad -0.5 \quad 0.0
\]
Outline Drawing (SM-164)

Dimensions in inches [mm] Tolerance: .xx ± .02, .xxx ± .010, unless otherwise stated
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