MABA-010721-CF1670

1:1 dB Transformer
5 - 400 MHz

Features
- 1:1 Transformer with Centre Tap
- Surface Mount Package
- Excellent Temperature Stability
- 260°C Reflow Compatible
- RoHS* Compliant & Lead Free
- Available on Tape & Reel

Description
The MABA-010721-CF1670 is a 1:1 RF transformer in a surface mount package.

Ideally suited for broadband CATV applications.

Schematic

Pin Configuration

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Output 1</td>
</tr>
<tr>
<td>2</td>
<td>No Connection</td>
</tr>
<tr>
<td>3</td>
<td>Output 2</td>
</tr>
<tr>
<td>4</td>
<td>Ground</td>
</tr>
<tr>
<td>5</td>
<td>Not connected</td>
</tr>
<tr>
<td>6</td>
<td>Input</td>
</tr>
</tbody>
</table>

Electrical Specifications: $P_{IN} = 0 \text{ dBm}, T_A = 25^\circ \text{C}, Z_0 = 75 \Omega$

<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 1 (Pin 6 to Pin 1)</td>
<td>5 - 400 MHz</td>
<td>dB</td>
<td>—</td>
<td>0.5</td>
<td>0.6</td>
</tr>
<tr>
<td>Insertion Loss 2 (Pin 6 to Pin 3)</td>
<td>5 - 400 MHz</td>
<td>dB</td>
<td>—</td>
<td>0.4</td>
<td>0.6</td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>5 - 400 MHz</td>
<td>dB</td>
<td>—</td>
<td>0.08</td>
<td>±0.5</td>
</tr>
<tr>
<td>Phase Balance</td>
<td>5 - 400 MHz</td>
<td>dB</td>
<td>—</td>
<td>0.4</td>
<td>±2.0</td>
</tr>
<tr>
<td>Input Return Loss (Pin 6)</td>
<td>5 - 200 MHz</td>
<td>dB</td>
<td>20</td>
<td>28</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>200 - 400 MHz</td>
<td>dB</td>
<td>19</td>
<td>22</td>
<td>—</td>
</tr>
</tbody>
</table>

Ordering Information

<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MABA-010721-CF1670</td>
<td>900 piece reel</td>
</tr>
<tr>
<td>MABA-010721-CF16TB</td>
<td>customer evaluation board</td>
</tr>
</tbody>
</table>

Recommended Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input power</td>
<td>250 mW</td>
</tr>
<tr>
<td>DC Current</td>
<td>1200 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. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

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DC-0000425
Typical Performance Curves: $P_{IN} = 0$ dBm, $T_A = 25^\circ$C, $Z_0 = 75\, \Omega$

6. Temperature plots available on request
Application Circuit

![Application Circuit Diagram]

Recommended Board Layout

![Recommended Board Layout Diagram]

Outline Drawing

![Outline Drawing Diagram]

Tape & Reel Information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qty per reel</td>
<td>-</td>
<td>900</td>
</tr>
<tr>
<td>Reel Size</td>
<td>mm</td>
<td>330</td>
</tr>
<tr>
<td>Tape Width</td>
<td>mm</td>
<td>16.00</td>
</tr>
<tr>
<td>Pitch</td>
<td>mm</td>
<td>12.00</td>
</tr>
<tr>
<td>Orientation</td>
<td>-</td>
<td>F15</td>
</tr>
</tbody>
</table>

Reference Application Note ANI-019 for orientation

Carrier Tape Orientation

![Carrier Tape Orientation Diagram]

7. Dimensions in mm.
8. Tolerance: ±0.2 mm unless otherwise noted.
9. Model number and lot code printed on reel.

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