MAPD-011032

2 Way 0° Power Divider, Surge Compliant
5 - 1250 MHz

Rev. V1

Features
- Surface Mount
- 2 way 0 degree
- Suitable for all CATV, Broadband and FTTx applications.
- Available on Tape and Reel
- RoHS Compliant and Lead free
- 260°C Reflow Compatible
- Surge Compliant as per IEC 60728-4.4.8

Description
This device is a 2 way 0 degree power divider in a low cost surface mount package. Ideally suited for all CATV Broadband and FTTx applications.

Functional Schematic

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAPD-011032</td>
<td>Tape &amp; Reel</td>
</tr>
<tr>
<td>MAPD-011032-TB</td>
<td>Customer test Board</td>
</tr>
</tbody>
</table>

Pin Configuration

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ground</td>
</tr>
<tr>
<td>2</td>
<td>Connect to Pin5 &amp; isolate from ground</td>
</tr>
<tr>
<td>3</td>
<td>Output 1</td>
</tr>
<tr>
<td>4</td>
<td>Output 2</td>
</tr>
<tr>
<td>5</td>
<td>Connect to Pin2 &amp; isolate from ground</td>
</tr>
<tr>
<td>6</td>
<td>Input</td>
</tr>
</tbody>
</table>
2 Way 0° Power Divider, Surge Compliant
5 - 1250 MHz

Electrical Specifications:  \( T_A = 25°C, \ Z_0 = 75 \ \Omega, \ P_{in} = 0\text{dBm} \)

<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>Frequency Range</td>
<td></td>
<td>MHz</td>
<td>5</td>
<td>-</td>
<td>1250</td>
</tr>
<tr>
<td>Impedance</td>
<td></td>
<td>Ω</td>
<td>-</td>
<td>75</td>
<td>-</td>
</tr>
<tr>
<td>Power Split</td>
<td></td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Insertion Loss 1 (Pin 6-3)</td>
<td>5 - 600 MHz</td>
<td>dB</td>
<td>-</td>
<td>0.2</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>600 - 1000 MHz</td>
<td>dB</td>
<td>-</td>
<td>0.6</td>
<td>1.1</td>
</tr>
<tr>
<td></td>
<td>1000 - 1250 MHz</td>
<td>dB</td>
<td>-</td>
<td>1.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Insertion Loss 2 (Pin 6-4)</td>
<td>5 - 600 MHz</td>
<td>dB</td>
<td>-</td>
<td>0.2</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>600 - 1000 MHz</td>
<td>dB</td>
<td>-</td>
<td>0.4</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>1000 - 1250 MHz</td>
<td>dB</td>
<td>-</td>
<td>0.6</td>
<td>1.1</td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>5 - 600 MHz</td>
<td>dB</td>
<td>-</td>
<td>0.01</td>
<td>±0.3</td>
</tr>
<tr>
<td></td>
<td>600 - 1250 MHz</td>
<td>dB</td>
<td>-</td>
<td>0.2</td>
<td>±0.7</td>
</tr>
<tr>
<td>Phase Balance (ref value 0°)</td>
<td>5 - 1000 MHz</td>
<td>°</td>
<td>-</td>
<td>0.4</td>
<td>±3.0</td>
</tr>
<tr>
<td></td>
<td>1000 - 1250 MHz</td>
<td>°</td>
<td>-</td>
<td>0.7</td>
<td>±4.0</td>
</tr>
<tr>
<td>Input Return Loss Pin 6</td>
<td>5 - 600 MHz</td>
<td>dB</td>
<td>19</td>
<td>31</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>600 - 1250 MHz</td>
<td>dB</td>
<td>13</td>
<td>26</td>
<td>-</td>
</tr>
<tr>
<td>Output Return Loss 1 (Pin 3)</td>
<td>5 - 1250 MHz</td>
<td>dB</td>
<td>12</td>
<td>33</td>
<td>-</td>
</tr>
<tr>
<td>Output Return Loss 2 (Pin 4)</td>
<td>5 - 1000 MHz</td>
<td>dB</td>
<td>14</td>
<td>41</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>1000 - 1250 MHz</td>
<td>dB</td>
<td>10</td>
<td>16</td>
<td>-</td>
</tr>
<tr>
<td>Isolation (Pin 3-4)</td>
<td>5 - 1250 MHz</td>
<td>dB</td>
<td>18</td>
<td>25</td>
<td>-</td>
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</table>

Recommended Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input RF Power</td>
<td>W</td>
<td>-</td>
<td>0.5</td>
</tr>
<tr>
<td>DC Current</td>
<td>mA</td>
<td>-</td>
<td>500</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>°C</td>
<td>-40</td>
<td>+85</td>
</tr>
</tbody>
</table>

Full temperature plots available on request
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Parts List

<table>
<thead>
<tr>
<th>REF</th>
<th>DESCRIPTION</th>
<th>P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>RES,0402, ±1%</td>
<td>160 Ω</td>
</tr>
<tr>
<td>L1</td>
<td>IND,0402, ±5%</td>
<td>15 nH</td>
</tr>
<tr>
<td>C3</td>
<td>CAP,0402, ±5%</td>
<td>470 pF</td>
</tr>
<tr>
<td>C1</td>
<td>CAP,0402, ±5%</td>
<td>0.5 pF</td>
</tr>
<tr>
<td>C2</td>
<td>CAP,0402, ±5%</td>
<td>0.5 pF</td>
</tr>
</tbody>
</table>

PCB land pattern dimensions

Connect center pads together and isolate them from ground as shown above.

For further information and support please visit:
https://www.macom.com/support
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Typical Performance Curves

Electrical Specifications: $T_A = 25°C$, $Z_0 = 75\ \Omega$, $P_{in} = 0\text{dBm}$
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**Outline Drawing**

- Dimensions in mm.
- Tolerance: ±0.2mm unless otherwise noted.
- Model number and lot code are printed on the reel.
- Lead plating: (CuSn6) Lead finish SAC-305

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**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>8.00</td>
</tr>
<tr>
<td>Orientation</td>
<td>-</td>
<td>F39</td>
</tr>
</tbody>
</table>

Reference App Note ANI-019 for orientation

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**Carrier Tape Orientation**

- Orientation Notch

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