MAPD-011039

2 Way 0° Power Divider
5 – 1218 MHz

Features
- 2 Way 0 Degree
- Surface mount
- Available on tape and reel
- 260° reflow compatible
- RoHS compliant and Pb free
- Excellent temperature stability
- Suitable for all CATV, Broadband and FTTX applications

Description
The MAPD-011039 is a 2 way 0 degree power divider in a low cost surface mount package.

Ideally suited for high volume CATV/VSAT applications.

Functional Schematic

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAPD-011039</td>
<td>Tape &amp; Reel</td>
</tr>
<tr>
<td>MAPD-011039-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>External 0.5 pF Capacitor</td>
</tr>
<tr>
<td>3</td>
<td>Output 2</td>
</tr>
<tr>
<td>4</td>
<td>Output 1</td>
</tr>
<tr>
<td>5</td>
<td>External 0.5 pF Capacitor</td>
</tr>
<tr>
<td>6</td>
<td>Input</td>
</tr>
</tbody>
</table>
### Electrical Specifications: $T_A = 25^\circ C$, $Z_0 = 75 \, \Omega$, $P_{in} = 0 \, \text{dBm}$

<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>Impedance</td>
<td>-</td>
<td>$\Omega$</td>
<td>-</td>
<td>75</td>
<td>-</td>
</tr>
<tr>
<td>Power Split</td>
<td>-</td>
<td>dB</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Insertion Loss (Above 3dB)</td>
<td>5 - 50 MHz</td>
<td>dB</td>
<td>-</td>
<td>0.60</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
<td>50 - 500 MHz</td>
<td></td>
<td></td>
<td>0.70</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>500 - 1218 MHz</td>
<td></td>
<td></td>
<td>1.20</td>
<td>1.3</td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>5 - 1000 MHz</td>
<td>dB</td>
<td>-</td>
<td>0.5</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td>1000 - 1218 MHz</td>
<td></td>
<td></td>
<td>0.6</td>
<td>$\pm$0.6</td>
</tr>
<tr>
<td>Phase Balance</td>
<td>5 - 1218 MHz</td>
<td>$^\circ$</td>
<td>-</td>
<td>2.5</td>
<td>$\pm$4</td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>5 - 1218 MHz</td>
<td>dB</td>
<td>20</td>
<td>22</td>
<td>-</td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>5 - 50 MHz</td>
<td>dB</td>
<td>18</td>
<td>20</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>50 - 1218 MHz</td>
<td></td>
<td>20</td>
<td>22</td>
<td>-</td>
</tr>
<tr>
<td>Isolation (between outputs)</td>
<td>5 - 50 MHz</td>
<td>dB</td>
<td>26</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>50 - 1218 MHz</td>
<td></td>
<td>28</td>
<td>29</td>
<td>-</td>
</tr>
</tbody>
</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 Power</td>
<td>W</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Internal Load Dissipation</td>
<td>W</td>
<td>-</td>
<td>0.125</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>$^\circ\text{C}$</td>
<td>-40</td>
<td>+85</td>
</tr>
</tbody>
</table>

Full temperature plots available on request.
2 Way 0° Power Divider
5 – 1218 MHz

PCB Layout

![PCB Layout diagram]

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</td>
<td>240 Ω</td>
</tr>
<tr>
<td>L1</td>
<td>IND,0402</td>
<td>12 nH</td>
</tr>
<tr>
<td>C1</td>
<td>CAP,0402</td>
<td>0.5 pF</td>
</tr>
<tr>
<td>C2</td>
<td>CAP,0402</td>
<td>0.5 pF</td>
</tr>
<tr>
<td>C3</td>
<td>CAP,0402</td>
<td>560 pF</td>
</tr>
</tbody>
</table>

Application Circuit

![Application Circuit diagram]
Typical Performance Curves

Electrical Specifications: \( T_A = 25^\circ C, \ Z_0 = 75 \ \Omega, \ P_{in} = 0 \text{dBm} \)
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5 – 1218 MHz

Typical Performance Curves

Electrical Specifications: \( T_A = 25^\circ C, Z_0 = 75 \, \Omega, P_{in} = 0\,dBm \)
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Outline Drawing

Carrier Tape Orientation

1. Dimensions in mm.
2. Tolerance: ±0.2mm unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Plating finish: ENIG on both sides, 0.05 to 0.1 µm gold over 3 to 6 µm nickel

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>2000</td>
</tr>
<tr>
<td>Reel Size</td>
<td>mm</td>
<td>330</td>
</tr>
<tr>
<td>Tape Width</td>
<td>mm</td>
<td>12.00</td>
</tr>
<tr>
<td>Pitch</td>
<td>mm</td>
<td>8.00</td>
</tr>
<tr>
<td>Ao</td>
<td>mm</td>
<td>4.50</td>
</tr>
<tr>
<td>Bo</td>
<td>mm</td>
<td>4.40</td>
</tr>
<tr>
<td>Ko</td>
<td>mm</td>
<td>3.70</td>
</tr>
<tr>
<td>Orientation</td>
<td></td>
<td>F27</td>
</tr>
</tbody>
</table>

Reference Application Note ANI-019 for orientation
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