MACP-011038

16 dB Coupler
5 - 1225 MHz
Rev. V2

Features
- 16 dB Coupling Ratio
- Surface Mount
- Available on Tape and Reel
- Excellent Temperature Stability
- RoHS Compliant and lead free
- 260°C Reflow Compatible

Description
The MACP-011038 is a 16 dB coupler in a low cost, surface mount package. Ideally suited for broadband CATV applications.

Functional Schematic

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACP-011038</td>
<td>900 piece reel</td>
</tr>
<tr>
<td>MACP-011038-TB</td>
<td>Sample 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>Input</td>
</tr>
<tr>
<td>2</td>
<td>Ground</td>
</tr>
<tr>
<td>3</td>
<td>Coupled</td>
</tr>
<tr>
<td>4</td>
<td>Isolated</td>
</tr>
<tr>
<td>5</td>
<td>Output</td>
</tr>
</tbody>
</table>
Electrical Specifications: Freq. = 5 - 1225 MHz, $T_A = 25^\circ C$, $Z_0 = 75 \, \Omega$, $P_{in} = 0 \, dBm$

<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>Coupling Ratio</td>
<td>—</td>
<td>dB</td>
<td>16</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Coupling (Pin 1- Pin 3)</td>
<td>5 - 1225 MHz</td>
<td>dB</td>
<td>16.5</td>
<td>16.0</td>
<td>15.5</td>
</tr>
<tr>
<td>Main Line Loss (Pin 1- Pin 5)</td>
<td>5 - 1000MHz 1000 - 1225 MHz</td>
<td>dB</td>
<td>0.7</td>
<td>0.9</td>
<td>1.0</td>
</tr>
<tr>
<td>Isolation (Pin 1- Pin 4)</td>
<td>5 - 1225 MHz</td>
<td>dB</td>
<td>30</td>
<td>33</td>
<td>-</td>
</tr>
<tr>
<td>Input Return Loss (Pin 1)</td>
<td>5 - 1000 MHz 1000 - 1225 MHz</td>
<td>dB</td>
<td>19</td>
<td>21</td>
<td>-</td>
</tr>
<tr>
<td>Output Return Loss (Pin 5)</td>
<td>5 - 1000 MHz 1000 - 1225 MHz</td>
<td>dB</td>
<td>18</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>Coupling Return Loss (Pin 3)</td>
<td>5 - 1000 MHz 1000 - 1225 MHz</td>
<td>dB</td>
<td>18</td>
<td>20</td>
<td>-</td>
</tr>
</tbody>
</table>

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
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</thead>
<tbody>
<tr>
<td>Input Power</td>
<td>1.5 W</td>
</tr>
<tr>
<td>DC Current</td>
<td>500 mA</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°C</td>
</tr>
</tbody>
</table>
Typical Performance Curves

1. Full temperature plots available on request.
16 dB Coupler
5 - 1225 MHz

Outline Drawing

PCB Layout

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

Carrier Tape Orientation

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>F59</td>
</tr>
</tbody>
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Reference Application Note ANI-019 for orientation
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