MACP-011015

8 dB Coupler
40 - 1250 MHz

Rev. V3

Features
- 8 dB Coupling Ratio
- Surface Mount Package
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible
- Available on Tape & Reel

Description
The MACP-011015 is an 8 dB coupler assembled in a surface mount package.

Ideally suited for CATV applications.

Functional Schematic

Pin Configuration

<table>
<thead>
<tr>
<th>Pin #</th>
<th>Function</th>
<th>Pin #</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coupled</td>
<td>4</td>
<td>Output</td>
</tr>
<tr>
<td>2</td>
<td>Ground</td>
<td>5</td>
<td>External 75 Ω</td>
</tr>
<tr>
<td>3</td>
<td>Input</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 40 - 1250 MHz, \( T_A = +25°C \), \( Z_0 = 75 \Omega \), \( P_{IN} = 0 \) dBm

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Frequency Test Conditions (MHz)</th>
<th>Units</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coupling (pin 3 - pin 1)</td>
<td>40 - 1250</td>
<td>dB</td>
<td>7.5</td>
<td>8.0</td>
<td>8.5</td>
</tr>
<tr>
<td>Main Line Loss (pin 3 - pin 4)</td>
<td>40 - 870 ( ) 870 - 1250</td>
<td>dB</td>
<td></td>
<td>1.5</td>
<td>1.9</td>
</tr>
<tr>
<td>Input Return Loss (pin 3)</td>
<td>40 - 1250</td>
<td>dB</td>
<td>17</td>
<td>19</td>
<td>—</td>
</tr>
<tr>
<td>Output Return Loss (pin 4)</td>
<td>40 - 1250</td>
<td>dB</td>
<td>18</td>
<td>30</td>
<td>—</td>
</tr>
<tr>
<td>Coupled Return Loss (pin 1)</td>
<td>40 - 1250</td>
<td>dB</td>
<td>17</td>
<td>20</td>
<td>—</td>
</tr>
<tr>
<td>Isolation (pin 3 - pin 5)</td>
<td>40 - 500 ( ) 500 - 1250</td>
<td>dB</td>
<td>23.0</td>
<td>27.0</td>
<td>—</td>
</tr>
<tr>
<td>Directivity</td>
<td>40 - 500 ( ) 500 - 1250</td>
<td>dB</td>
<td>15</td>
<td>18</td>
<td>—</td>
</tr>
</tbody>
</table>

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACP-011015</td>
<td>2000 piece reel</td>
</tr>
<tr>
<td>MACP-011015-TB</td>
<td>Sample Board</td>
</tr>
</tbody>
</table>

1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Power</td>
<td>250 mW</td>
</tr>
<tr>
<td>DC Current</td>
<td>30 mA</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°C</td>
</tr>
</tbody>
</table>

4. Exceeding any one or combination of these limits may cause permanent damage to this device.
5. MACOM does not recommend sustained operation near these survivability limits.

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Typical Performance Curves

6. Full temperature plots available on request.

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Application Schematic

Outline Drawing

Carrier Tape Orientation

Tape & Reel Information

Parameter | Units | Value
--- | --- | ---
Tape Width | mm | 12.0
Pitch | mm | 8.0
Orientation | - | F31

Reference Application Note ANI-019 for orientation

Dimensions in mm.
Tolerance: ±0.2 mm unless otherwise noted.
Model number and lot code are printed on the reel.
Finish: Electroless nickel immersion gold (ENIG).

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