MACP-010250-C808A0

Coupler 8dB
5 – 1218 MHz

Rev. V2

Features
- Surface mount
- Typical Coupling 8dB
- 260º reflow compatible
- RoHS compliant and lead free
- Stable over large temperature range

Description
MACP-010250-C808A0 is a 8dB broadband Coupler in a low cost surface mount package. It offers low loss, good Isolation, good input/output matching and exceptional coupling repeatability. Ideally suited for high volume CATV and Broadband applications.

Functional Schematic

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACP-010250-C808A0</td>
<td>Tape &amp; Reel</td>
</tr>
<tr>
<td>MACP-010250-C808TB</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>Output</td>
</tr>
<tr>
<td>3</td>
<td>Isolation (external 75 Ohm load)</td>
</tr>
<tr>
<td>4</td>
<td>Coupling</td>
</tr>
<tr>
<td>5</td>
<td>Ground</td>
</tr>
<tr>
<td>6</td>
<td>Input</td>
</tr>
</tbody>
</table>
## Electrical Specifications: $T_A = 25^\circ C$, $Z_0 = 75 \, \Omega$, $P_{in} = 0 \, dBm$

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Units</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>MHz</td>
<td></td>
<td>5</td>
<td>1218</td>
<td></td>
</tr>
<tr>
<td>Impedance</td>
<td>$\Omega$</td>
<td></td>
<td>75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coupling</td>
<td></td>
<td></td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coupling (Pin6 - Pin4)</td>
<td>5 - 1218 MHz dB</td>
<td></td>
<td>-</td>
<td>8.6</td>
<td>±0.8</td>
</tr>
<tr>
<td>Main Line Loss (Pin6 - Pin1)</td>
<td>5 - 500 MHz dB</td>
<td></td>
<td>-</td>
<td>1.5</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>500 - 1218 MHz dB</td>
<td></td>
<td>-</td>
<td>1.6</td>
<td>2.3</td>
</tr>
<tr>
<td>Input Return Loss (Pin6)</td>
<td>5 - 1218 MHz dB</td>
<td></td>
<td>14</td>
<td>19</td>
<td>-</td>
</tr>
<tr>
<td>Output Return Loss (Pin1)</td>
<td>5 - 1218 MHz dB</td>
<td></td>
<td>18</td>
<td>37</td>
<td>-</td>
</tr>
<tr>
<td>Coupling Return Loss (Pin4)</td>
<td>5 - 1218 MHz dB</td>
<td></td>
<td>14</td>
<td>18</td>
<td>-</td>
</tr>
<tr>
<td>Isolation Return Loss (Pin3)</td>
<td>5 - 1218 MHz dB</td>
<td></td>
<td>18</td>
<td>32</td>
<td>-</td>
</tr>
<tr>
<td>Isolation (Pin6-3)</td>
<td>5 - 250 MHz dB</td>
<td></td>
<td>25</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>250 - 1218 MHz dB</td>
<td></td>
<td>18</td>
<td>24</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 Power</td>
<td>$mW$</td>
<td>631</td>
<td></td>
</tr>
<tr>
<td>DC Current</td>
<td>$mA$</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>$^\circ C$</td>
<td>-40</td>
<td>105</td>
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</tbody>
</table>

Full temperature plots available on request
PCB Layout

Application Schematic
Typical Performance Curves

**Coupling (pin6-4)**

**Main Line Loss (pin6-1)**

**Input Return Loss (pin6)**

**Output Return Loss (pin1)**

**Coupling Return Loss (pin4)**

**Isolation (pin6-3)**

**Electrical Specifications:** $T_A = 25^\circ C$, $Z_0 = 75 \Omega$, $P_{in} = 0$ dBm
Coupler 8dB
5 – 1218 MHz

Outline Drawing

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>6.1</td>
</tr>
<tr>
<td>Bo</td>
<td>mm</td>
<td>4.6</td>
</tr>
<tr>
<td>Ko</td>
<td>mm</td>
<td>4.0</td>
</tr>
<tr>
<td>Orientation</td>
<td>-</td>
<td>F26</td>
</tr>
</tbody>
</table>

Reference Application Note ANI-019 for orientation

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

Carrier Tape Orientation