MACP-010249-CI08A0

Coupler, 18dB Coupler
5 to 1200 MHz

Features

• 18dB Impedance ratio
• Excellent Insertion Loss
• Surface mount
• Available on tape and reel
• 260°C reflow compatible
• RoHS* compliant and lead free
• Excellent temperature stability
• Can be used in both 50Ω and 75Ω systems

Description

M/A-Com Technology Solutions MACP-010249-CI08A0 is a 18 dB Coupler in a low cost, surface mount package. Ideally suited for broadband CATV applications.

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>Isolated port (Z₀ termination)</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>

Component Dimensions

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

<table>
<thead>
<tr>
<th>Parameter: Coupling (Pin 6 to Pin 4)</th>
<th>Frequency: 5 - 1200MHz</th>
<th>Units: dB</th>
<th>Min: -</th>
<th>Typ: 18</th>
<th>Max: ±1.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter: Main Line Loss (Pin 6 to Pin 1)</td>
<td>Frequency: 5 - 1200MHz</td>
<td>Units: dB</td>
<td>Min: -</td>
<td>Typ: 0.6</td>
<td>Max: 0.9</td>
</tr>
<tr>
<td>Parameter: Input Return Loss (Pin6)</td>
<td>Frequency: 5 - 1200MHz</td>
<td>Units: dB</td>
<td>Min: 18</td>
<td>Typ: 34</td>
<td>Max: -</td>
</tr>
<tr>
<td>Parameter: Output Return Loss (Pin1)</td>
<td>Frequency: 5 - 1200MHz</td>
<td>Units: dB</td>
<td>Min: 18</td>
<td>Typ: 33</td>
<td>Max: -</td>
</tr>
<tr>
<td>Parameter: Coupling Return Loss (Pin4)</td>
<td>Frequency: 5 - 1200MHz</td>
<td>Units: dB</td>
<td>Min: 18</td>
<td>Typ: 28</td>
<td>Max: -</td>
</tr>
<tr>
<td>Parameter: Isolation Return Loss (Pin3)</td>
<td>Frequency: 5 - 1200MHz</td>
<td>Units: dB</td>
<td>Min: 18</td>
<td>Typ: 34</td>
<td>Max: -</td>
</tr>
<tr>
<td>Parameter: Isolation (Pin6 - Pin3)</td>
<td>Frequency: 5 - 50MHz 50 - 1200MHz</td>
<td>Units: dB</td>
<td>Min: 35 24</td>
<td>Typ: 42 32</td>
<td>Max: -</td>
</tr>
</tbody>
</table>

Recommended Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input power</td>
<td>At least 250mW</td>
</tr>
<tr>
<td>DC current (tested at 5V)</td>
<td>At least 30mA</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55°C to +100°C</td>
</tr>
</tbody>
</table>

Application Circuit

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Typical Performance Curves: \( T_A = 25^\circ C, 0\text{dBm}, Z_0 = 75\Omega, P_{in} = 0\text{dBm} \)

**Coupling: (Pin 6 to 4)**

![Coupling Graph](image)

**Return Loss: Input (Pin6)**

![Return Loss Graph](image)

**Main Line Loss: (Pin 6 to 1)**

![Main Line Loss Graph](image)

**Return Loss: Output (Pin1)**

![Return Loss Graph](image)

**Isolation (Pin6 to 3)**

![Isolation Graph](image)

**Return Loss: Coupling (Pin4)**

![Return Loss Graph](image)

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- **North America** Tel: 800.366.2266
- **Europe** Tel: +353.21.244.6400
- **India** Tel: +91.80.43537383
- **China** Tel: +86.21.2407.1588

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Tape & Reel Information

<table>
<thead>
<tr>
<th>Item</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ao</td>
<td>6.1mm +/- 0.1mm</td>
</tr>
<tr>
<td>Bo</td>
<td>4.6mm +/- 0.1mm</td>
</tr>
<tr>
<td>Ko</td>
<td>4.0mm +/- 0.1mm</td>
</tr>
<tr>
<td>W</td>
<td>12.0mm +/- 0.3mm</td>
</tr>
<tr>
<td>P1</td>
<td>8.00mm +/- 0.1mm</td>
</tr>
</tbody>
</table>

Ordering Information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACP-010249-CI08A0</td>
<td>2000 piece reel</td>
</tr>
<tr>
<td>MACP-010249-CI08TB</td>
<td>Customer Test Board</td>
</tr>
</tbody>
</table>

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