MACP-011056

16 dB Coupler
5 - 1225 MHz

Features
- 16 dB Coupling Ratio
- Surface Mount
- Available on Tape and Reel
- High isolation from 100 - 700 MHz
- Low insertion loss
- Excellent Temperature Stability
- RoHS Compliant and Pb Free
- 260°C Reflow Compatible

Description
The MACP-011056 is a 16 dB coupler in a low cost, surface mount package.

Ideally suited for CATV, Full Duplex and DOCSIS 3.1 applications.

Ordering Information
- MACP-011056
- MACP-011056-TB

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Features

Functional Schematic

MACOM recommends connecting unused package pins to ground.

Electrical Specifications: Freq. = 5 - 1225 MHz, T_A = 25°C, Z_0 = 75 Ω, 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 Ratio</td>
<td>-</td>
<td>dB</td>
<td>—</td>
<td>16</td>
<td>—</td>
</tr>
<tr>
<td>Coupling</td>
<td>5 - 1225</td>
<td>dB</td>
<td>15.5</td>
<td>16</td>
<td>16.5</td>
</tr>
<tr>
<td>Main Line Loss</td>
<td>5 - 700, 700 - 1225</td>
<td>dB</td>
<td>—</td>
<td>0.55</td>
<td>0.65</td>
</tr>
<tr>
<td>Isolation</td>
<td>5 - 100, 100 - 700, 700 - 1225</td>
<td>dB</td>
<td>37</td>
<td>40</td>
<td>43</td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>5 - 700, 700 - 1225</td>
<td>dB</td>
<td>18</td>
<td>23</td>
<td>—</td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>5 - 700, 700 - 1225</td>
<td>dB</td>
<td>19</td>
<td>24</td>
<td>—</td>
</tr>
<tr>
<td>Coupling Return Loss</td>
<td>5 - 700, 700 - 1225</td>
<td>dB</td>
<td>14</td>
<td>19</td>
<td>—</td>
</tr>
</tbody>
</table>

Ordering Information

MACOM-011056
- 900 piece reel
MACOM-011056-TB
- Sample Board

1. Reference Application Note M513 for reel size information.
2. All sample boards include 5 loose parts.
3. MACOM recommends connecting unused package pins to ground.

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Power^6</td>
<td>2 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>

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.
6. Specified at +25°C only.
Typical Performance Curves

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

8. Recommended PCB layout shown above uses 1.6 mm FR4, Grounded coplanar wave guide, transmission line width 0.70 mm and gap 0.57 mm.

9. Dimensions in mm.
10. Tolerance: ±0.2 mm unless otherwise noted.
11. Model number and lot code printed on reel.

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