MACP-007741-CG09E0

17 dB Coupler, Broadband CATV
5 - 1200 MHz

Rev. V3

Features
- Surface Mount
- 17 dB Coupler
- 260°C Reflow Compatible
- RoHS* Compliant version of EMDC-17-1-75
- Available on Tape and Reel. Reel quantity 2000

Description
MACOM’s MACP-007741-CG09E0 is a high performance 75 Ω coupler, in a SM-22 low cost, surface mount package. This coupler is designed for use in high volume CATV applications. Typical applications include Set-top Boxes, Network Interface Units, Broadband Amplifiers and Headend equipment.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MACP-007741-CG09E0</td>
<td>2000 piece reel</td>
</tr>
<tr>
<td>MACP-007741-CG09TB</td>
<td>Customer Test Board</td>
</tr>
</tbody>
</table>

1. Reference Application Note M513 for reel size information.

Functional Schematic

Pin Configuration

<table>
<thead>
<tr>
<th>Pin Number</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coupled</td>
</tr>
<tr>
<td>2</td>
<td>Ground</td>
</tr>
<tr>
<td>3</td>
<td>Input</td>
</tr>
<tr>
<td>4</td>
<td>Output</td>
</tr>
<tr>
<td>5</td>
<td>Isolated</td>
</tr>
</tbody>
</table>

*(external 75 Ω termination)*

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5 - 1200 MHz

Electrical Specifications: $T_A = +25^\circ$C, $Z_0 = 75$ Ω

<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>Coupling</td>
<td>5 - 1200 MHz</td>
<td>dB</td>
<td>—</td>
<td>17</td>
<td>±1.5</td>
</tr>
<tr>
<td>Coupling Flatness</td>
<td>5 - 1200 MHz</td>
<td>dB</td>
<td>—</td>
<td>—</td>
<td>±1.2</td>
</tr>
</tbody>
</table>
| Main Line Loss     | 5 - 50 MHz
|                    | 50 - 1000 MHz
|                    | 1000 - 1200 MHz       | dB    | 25   | 7    | —    |
| Directivity        | 5 - 50 MHz
|                    | 50 - 500 MHz
|                    | 500 - 1200 MHz        | dB    | 27   | 15   | —    |
| Return Loss        | 5 - 50 MHz
|                    | 50 - 500 MHz
|                    | 500 - 1000 MHz
|                    | 1000 - 1200 MHz       | dB    | 23   | 15   | —    |

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Power</td>
<td>250 mV</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>
<tr>
<td>Storage Temperature</td>
<td>-55°C to +100°C</td>
</tr>
</tbody>
</table>

Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.
Typical Performance Curves

**Coupling**

- dB vs. Frequency (MHz)

**Main Line Loss**

- dB vs. Frequency (MHz)

**Input Return Loss**

- dB vs. Frequency (MHz)

**Output Return Loss**

- dB vs. Frequency (MHz)

**Coupled Return Loss**

- dB vs. Frequency (MHz)

**Directivity**

- dB vs. Frequency (MHz)
Recommended PCB Configuration

Outline Drawing, Case Style SM-22

Dimensions in inches [mm] Tolerance: .xx ± .02, .xxx ± .010
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