MAPDCC0009

Low Cost Four-Way GMIC SMT Power Divider
824 – 960 MHz

Features

- Low Cost
- Small Size and Low Profile
- Superior Repeatability (Lot-to-Lot Variation)
- Typical Insertion Loss: 0.8 dB
- Typical Isolation: 24 dB
- Typical Amplitude Balance: 0.3 dB
- Lead-Free SOIC-8 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS54-0005

Description

M/A-COM’s MAPDCC0009 is an IC-based monolithic power divider using M/A-COM’s GMIC technology in a low cost SOIC-8 plastic package. This 4-way power divider is ideally suited for applications where PCB real estate is at a premium and standard packaging for automated assembly and low cost are critical. Typical applications include infrastructure, portables, and peripheral devices (PCMCIA cards) for wireless standards such as GSM, AMPS, CDPD, RAM, and ARDIS. Available in tape and reel.

The MAPDCC0009 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAPDCC0009</td>
<td>Bulk Packaging</td>
</tr>
<tr>
<td>MAPDCC0009-TR</td>
<td>2000 piece reel</td>
</tr>
<tr>
<td>MAPDCC0009-TB</td>
<td>Sample Test Board</td>
</tr>
</tbody>
</table>

Note: Reference Application Note M513 for reel size information.

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Electrical Specifications: \( T_A = +25^\circ C, Z_0 = 50\Omega \)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion Loss Above 6.0 dB</td>
<td>dB</td>
<td>—</td>
<td>0.8</td>
<td>1.1</td>
</tr>
<tr>
<td>Isolation</td>
<td>dB</td>
<td>20</td>
<td>24</td>
<td>—</td>
</tr>
<tr>
<td>VSWR Input</td>
<td>—</td>
<td>—</td>
<td>1.4:1</td>
<td>1.7:1</td>
</tr>
<tr>
<td>VSWR Output</td>
<td>—</td>
<td>—</td>
<td>1.25:1</td>
<td>1.5:1</td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>dB</td>
<td>—</td>
<td>0.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Phase Balance</td>
<td>*</td>
<td>—</td>
<td>3</td>
<td>6</td>
</tr>
</tbody>
</table>

Absolute Maximum Ratings \(^2,3\)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Power(^4)</td>
<td>1W CW</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-65°C to +150°C</td>
</tr>
</tbody>
</table>

2. Exceeding any one or combination of these limits may cause permanent damage to this device.
3. M/A-COM does not recommend sustained operation near these survivability limits.
4. With internal load dissipation of 0.125 W maximum.

Handling Procedures
Please observe the following precautions to avoid damage:

Static Sensitivity
GMIC Circuits 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

**Insertion Loss vs. Frequency**
*(Dashed lines show amplitude balance window)*

![Insertion Loss vs. Frequency](image1)

**VSWR vs. Frequency**

![VSWR vs. Frequency](image2)

**Isolation vs. Frequency**

![Isolation vs. Frequency](image3)

**Phase Balance vs. Frequency** *(Relative to RF1)*

![Phase Balance vs. Frequency](image4)
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Lead-Free, SOIC-8†

NOTES:
1. REFERENCE JEDEC MS-012-AA, FOR ADDITIONAL DIMENSIONAL AND TOLERANCE INFORMATION.
2. REFERENCE M536 APPLICATION NOTE, FOR FOOTPRINT INFORMATION.
3. ALL DIMENSIONS SHOWN AS INCHES; MILLIMETERS.

† Reference Application Note M538 for lead-free solder reflow recommendations.
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