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.

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

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>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 Graph](image)

**VSWR vs. Frequency**

![VSWR vs. Frequency Graph](image)

**Isolation vs. Frequency**

![Isolation vs. Frequency Graph](image)

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

![Phase Balance vs. Frequency Graph](image)
Low Cost Four-Way GMIC SMT Power Divider
824 – 960 MHz

Lead-Free, SOIC-8†

NOTES:
1. REFERENCE JEDEC MS-012-44, FOR ADDITIONAL DIMENSIONAL AND TOLERANCE INFORMATION.
2. REFERENCE M538 APPLICATION NOTE FOR FOOTPRINT INFORMATION.
3. ALL DIMENSIONS SHOWN AS INCHES:MIN.

† Reference Application Note M538 for lead-free solder reflow recommendations.
Low Cost Four-Way GMIC SMT Power Divider
824 – 960 MHz

MAPDCC0009

M/A-COM Technology Solutions Inc. All rights reserved.
Information in this document is provided in connection with M/A-COM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.