Features

- Small Size and Low Profile
- Industry Standard SOIC-8 SMT Plastic Package
- Excellent Amplitude and Phase Balance
- Superior Repeatability
- Typical Insertion Loss 0.4 dB
- Typical Isolation 20 dB
- 1 Watt Power Handling
- Frequency Coverage for GPS and LEO Programs
- Lead-Free SOIC-8 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS52-0004

Description

M/A-COM’s MAPDCC0003 is an IC-based monolithic power divider in a low cost SOIC-8 plastic package. This 2-way power divider is ideally suited for applications where small size, low insertion loss, superior phase/amplitude tracking and low cost are required. Typical applications include base station switching networks and other communication applications where size and PCB real estate are a premium. Available in tape and reel.

The MAPDCC0003 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>MAPDCC0003</td>
<td>Bulk Packaging</td>
</tr>
<tr>
<td>MAPDCC0003-TR</td>
<td>1000 Piece Reel</td>
</tr>
<tr>
<td>MAPDCC0003-TB</td>
<td>Sample Test Board</td>
</tr>
</tbody>
</table>

Note: Reference Application Note M513 for reel size information.

Low Cost Two-Way SMT Power Divider
1510-1660 MHz

Electrical Specifications\(^1\): \( T_A = +25\degree C \)

<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</td>
<td>Above 3.0dB</td>
<td>—</td>
<td>0.4</td>
<td>0.6</td>
</tr>
<tr>
<td>Isolation</td>
<td>dB</td>
<td>15</td>
<td>20</td>
<td>—</td>
</tr>
<tr>
<td>VSWR Input RL</td>
<td>dB</td>
<td>—</td>
<td>1.3:1</td>
<td>1.5:1</td>
</tr>
<tr>
<td>VSWR Output RL</td>
<td>dB</td>
<td>—</td>
<td>1.4:1</td>
<td>1.6:1</td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>dB</td>
<td>—</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Phase Balance</td>
<td>Deg</td>
<td>—</td>
<td>1.0</td>
<td>3.0</td>
</tr>
</tbody>
</table>

1. All specifications apply with a 50-Ohm source and load impedance.

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>1 W 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.

Recommended PCB Configuration
Typical Performance @ 25°C

**Insertion Loss vs. Frequency**

![Insertion Loss vs. Frequency Graph](image)

**Isolation vs. Frequency**

![Isolation vs. Frequency Graph](image)

**VSWR vs. Frequency**

![VSWR vs. Frequency Graph](image)

**Phase Balance vs. Frequency**

![Phase Balance vs. Frequency Graph](image)
Low Cost Two-Way SMT Power Divider
1510-1660 MHz

Lead-Free, SOIC-8†

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

† Reference Application Note M538 for lead-free solder reflow recommendations.
Low Cost Two-Way SMT Power Divider
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