MAPDCC0003

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

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.

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

<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>dB</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>—</td>
<td>—</td>
<td>1.3:1</td>
<td>1.5:1</td>
</tr>
<tr>
<td>VSWR Output RL</td>
<td>—</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.
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Typical Performance @ 25°C

**Insertion Loss vs. Frequency**

- Frequency (MHz)
- Insertion Loss (dB)

**Isolation vs. Frequency**

- Frequency (MHz)
- Isolation (dB)

**VSWR vs. Frequency**

- Frequency (MHz)
- VSWR

**Phase Balance vs. Frequency**

- Frequency (MHz)
- Phase Balance

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For further information and support please visit:
[https://www.macom.com/support](https://www.macom.com/support)
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.