**MAPDCC0001**

Low Cost Two-Way SMT Power Divider
824-960 MHz

**Features**
- Small Size and Low Profile
- Excellent Amplitude and Phase Balance
- Superior Repeatability
- Typical Insertion Loss 0.5 dB
- Typical Isolation 23 dB
- 1 Watt Power Handling
- Lead-Free SOIC-8 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS52-0001

**Description**
M/A-COM’s MAPDCC0001 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 MAPDCC0001 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

**Functional Block Diagram**

**Pin Configuration**

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND</td>
</tr>
<tr>
<td>2</td>
<td>RF-IN</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
</tr>
<tr>
<td>5</td>
<td>RF-1 (out)</td>
</tr>
<tr>
<td>6</td>
<td>GND</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
</tr>
<tr>
<td>8</td>
<td>RF-2 (out)</td>
</tr>
</tbody>
</table>


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

<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>0.5</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Isolation</td>
<td>dB</td>
<td>15</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td>VSWR Input</td>
<td></td>
<td></td>
<td>1.35:1</td>
<td>1.5:1</td>
</tr>
<tr>
<td>VSWR Output</td>
<td></td>
<td></td>
<td>1.25:1</td>
<td>1.4:1</td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>dB</td>
<td></td>
<td>0.05</td>
<td>0.15</td>
</tr>
<tr>
<td>Phase Balance</td>
<td>Deg.</td>
<td></td>
<td>0.5</td>
<td>1.5</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</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.
Typical Performance @ +25°C

**Insertion Loss vs. Frequency**

**Isolation vs. Frequency**

**VSWR vs. Frequency**

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

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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.
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