Features
- Low Cost
- Small Size and Low Profile
- Excellent Repeatability (Lot-to-Lot Variation)
- Typical Isolation: 23 dB
- Typical Amplitude Balance: 0.8 dB
- Typical Insertion Loss: 1.4 dB
- Lead-Free SOIC-16 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS54-0006

Description
M/A-COM’s MAPDCC0014 is an IC-based monolithic power splitter/combiner in a low cost SOIC-16 plastic package. This device 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 PCS, PCN, DECT, PHS, and DCS-1800. Available in Tape and Reel.

The MAPDCC0014 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>MAPDCC0014</td>
<td>Bulk Packaging</td>
</tr>
<tr>
<td>MAPDCC0014-TR</td>
<td>1000 piece reel</td>
</tr>
<tr>
<td>MAPDCC0014-TB</td>
<td>Sample Test Board</td>
</tr>
</tbody>
</table>

Note: Reference Application Note M513 for reel size information.

Four Way SMT Power Splitter/Combiner
1700 – 2000 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>1.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Isolation 1700 - 2000</td>
<td>dB</td>
<td>18</td>
<td>23</td>
<td>—</td>
</tr>
<tr>
<td>VSWR Output</td>
<td>—</td>
<td>—</td>
<td>1.2:1</td>
<td>1.7:1</td>
</tr>
<tr>
<td>Input 1700 – 1880</td>
<td>—</td>
<td>—</td>
<td>1.6:1</td>
<td>2.0:1</td>
</tr>
<tr>
<td>Input 1880 – 2000</td>
<td>—</td>
<td>—</td>
<td>1.4:1</td>
<td>1.7:1</td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>dB</td>
<td>—</td>
<td>0.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Phase Balance</td>
<td>Deg</td>
<td>—</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>

Absolute Maximum Ratings

<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 Curves @25°C

**Insertion Loss vs. Frequency**

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

**Amplitude Balance vs. Frequency**

![Amplitude Balance vs. Frequency Graph](image)
Typical Performance Curves @25°C

**Isolation vs. Frequency**

![Graph showing isolation vs. frequency]

**Phase Balance vs. Frequency**

![Graph showing phase balance vs. frequency]

**I/P VSWR vs. Frequency**

![Graph showing input VSWR vs. frequency]

**O/P VSWR vs. Frequency**

![Graph showing output VSWR vs. frequency]
Lead-Free, SOIC-16†

† Reference Application Note M538 for lead-free solder reflow recommendations.
Four Way SMT Power Splitter/Combiner
1700 – 2000 MHz

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