MAPDCC0011

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

Rev. V2

Features
- Small Size and Low Profile
- Industry Standard SOT-26 SMT Plastic Package
- Typical Insertion Loss: 0.6 dB
- Typical Isolation: 15 dB
- 1 Watt Power Handling
- Lead-Free SOT-26 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS52-0008

Description
M/A-COM’s MAPDCC0011 is an IC-based monolithic power divider using M/A-COM’s GMIC technology in a low cost SOT-26 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 personal communication systems and other communication applications where size and PCB real estate are at a premium. Available in tape and reel.

The MAPDCC0011 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>MAPDCC0011</td>
<td>Bulk Packaging</td>
</tr>
<tr>
<td>MAPDCC0011-TR</td>
<td>1000 piece reel</td>
</tr>
<tr>
<td>MAPDCC0011-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:  $T_A = 25^\circ\text{C}$

<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 Above 3.0 dB</td>
<td>dB</td>
<td>—</td>
<td>0.6</td>
<td>0.8</td>
</tr>
<tr>
<td>Isolation</td>
<td>dB</td>
<td>13</td>
<td>15</td>
<td>—</td>
</tr>
<tr>
<td>VSWR Input</td>
<td>—</td>
<td>—</td>
<td>1.3:1</td>
<td>1.4:1</td>
</tr>
<tr>
<td>RF1, RF2 Outputs</td>
<td>—</td>
<td>—</td>
<td>1.3:1</td>
<td>1.5:1</td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>dB</td>
<td>—</td>
<td>0.1</td>
<td>0.25</td>
</tr>
<tr>
<td>Phase Balance</td>
<td>Deg.</td>
<td>—</td>
<td>3</td>
<td>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$^4$</td>
<td>1W CW</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°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
(Dashed lines show amplitude balance window)

VSWR vs. Frequency

Insertion Loss dB vs. Frequency MHz

VSWR vs. Frequency

Isolation vs. Frequency

Phase Balance vs. Frequency
(Relative to RF1)

Insertion Loss vs. Frequency

VSWR vs. Frequency

Isolation dB vs. Frequency MHz

Phase, degrees vs. Frequency MHz
Lead-Free SOT-26†

NOTES: 1. REFERENCE JEDEC MO-178-AB FOR ADDITIONAL DIMENSIONAL AND TOLERANCE INFORMATION.
2. REFERENCE M538 APPLICATION NOTE FOR PCB FOOTPRINT INFORMATION.
3. ALL DIMENSIONS SHOWN AS INCHES/MM.

† Reference Application Note M538 for lead-free solder reflow recommendations.
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