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.

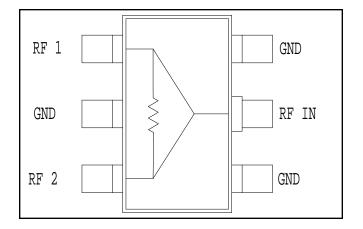
The MAPDCC0011 is fabricated using a passiveintegrated circuit process. The process features fullchip passivation for increased performance and reliability.

Ordering Information

| Part Number | Package | |
|---------------|-------------------|--|
| MAPDCC0011 | Bulk Packaging | |
| MAPDCC0011-TR | 1000 piece reel | |
| MAPDCC0011-TB | Sample Test Board | |

Note: Reference Application Note M513 for reel size information.

Functional Diagram



Pin Configuration

| Pin No. | Function | Pin No. | Function |
|---------|----------|---------|----------|
| 1 | RF1 | 4 | GND |
| 2 | GND | 5 | RF IN |
| 3 | RF2 | 6 | GND |

* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

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Electrical Specifications: T_A = 25°C¹

| Parameter | Units | Min | Тур | Max |
|--------------------------------|-------|-----|----------------|----------------|
| Insertion Loss Above 3.0 dB | dB | _ | 0.6 | 0.8 |
| Isolation | dB | 13 | 15 | — |
| VSWR Input RF1, RF2 Outputs | _ | _ | 1.3:1 1.3:1 | 1.4:1 1.5:1 |
| Amplitude Balance | dB | _ | 0.1 | 0.25 |
| Phase Balance | Deg. | _ | 3 | 5 |

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

Absolute Maximum Ratings ^{2,3}

| Parameter | Absolute Maximum | |
|--------------------------|------------------|--|
| Input Power ⁴ | 1W CW | |
| Operating Temperature | -40°C to +85°C | |

2. Exceeding any one or combination of these limits may cause permanent damage to this device.

M/A-COM does not recommend sustained operation near these survivability limits.

4. With internal load dissipation of 0.125 W maximum.

Handling Procedures

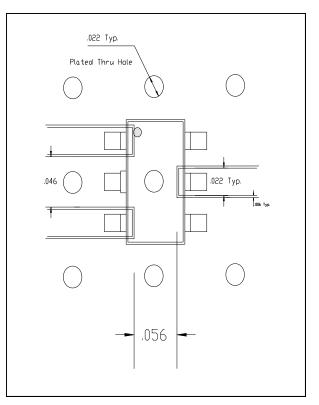
Please observe the following precautions to avoid damage:

Static Sensitivity

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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



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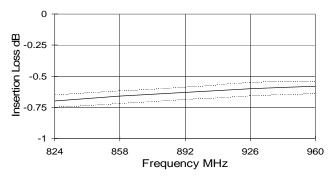
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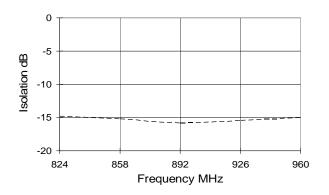
Typical Performance Curves @ 25°C

Insertion Loss vs. Frequency

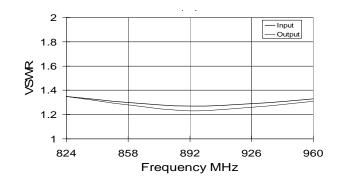




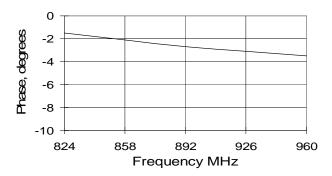
Isolation vs. Frequency



VSWR vs. Frequency



Phase Balance vs. Frequency (Relative to RF1)



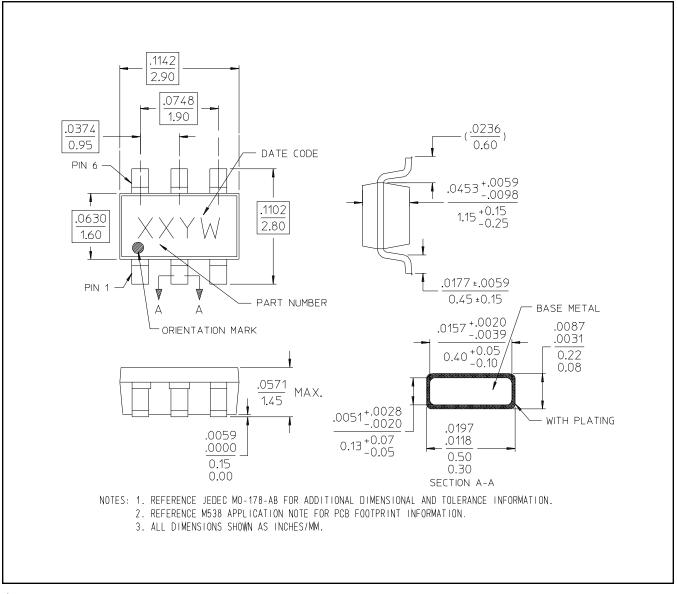
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Lead-Free SOT-26[†]



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

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