



**THE DATASHEET OF
MAPDCC0003**



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.

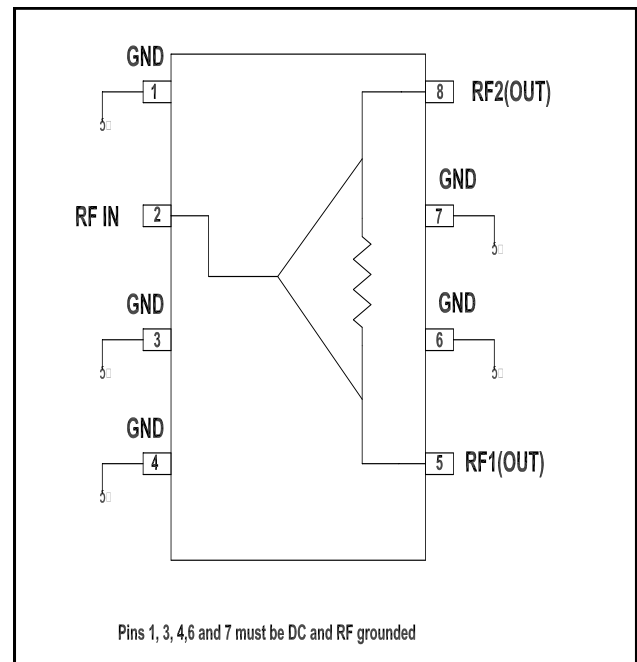
The MAPDCC0003 is fabricated using a passive-integrated circuit process. The process features full -chip passivation for increased performance and reliability.

Ordering Information

| Part Number | Package |
|---------------|-------------------|
| MAPDCC0003 | Bulk Packaging |
| MAPDCC0003-TR | 1000 Piece Reel |
| MAPDCC0003-TB | Sample Test Board |

Note: Reference Application Note M513 for reel size information.

Functional Diagram



Pin Configuration

| Pin No. | Function |
|---------|------------|
| 1 | GND |
| 2 | RF-IN |
| 3 | GND |
| 4 | GND |
| 5 | RF-1 (out) |
| 6 | GND |
| 7 | GND |
| 8 | RF-2 (out) |

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

Electrical Specifications¹: T_A = +25°C

| Parameter | Units | Min | Typ | Max |
|-------------------|-------------|-----|-------|-------|
| Insertion Loss | Above 3.0dB | — | 0.4 | 0.6 |
| Isolation | | 15 | 20 | — |
| VSWR | Input RL | — | 1.3:1 | 1.5:1 |
| VSWR | Output RL | — | 1.4:1 | 1.6:1 |
| Amplitude Balance | | — | 0.1 | 0.2 |
| Phase Balance | | — | 1.0 | 3.0 |

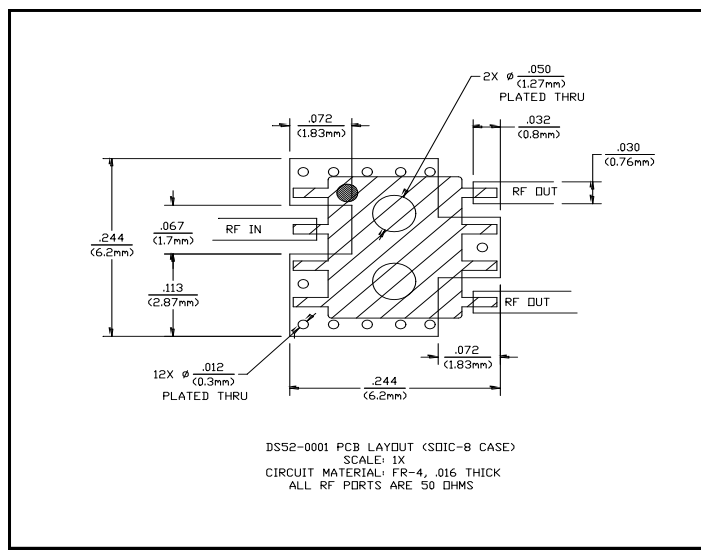
1. All specifications apply with a 50-Ohm source and load impedance.

Absolute Maximum Ratings^{2,3}

| Parameter | Absolute Maximum |
|--------------------------|------------------|
| Input Power ⁴ | 1 W CW |
| Operating Temperature | -40°C to +85°C |
| Storage Temperature | -65°C to +150°C |

- 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.
- With Internal load dissipation of 0.125 W maximum.

Recommended PCB Configuration



Handling Procedures

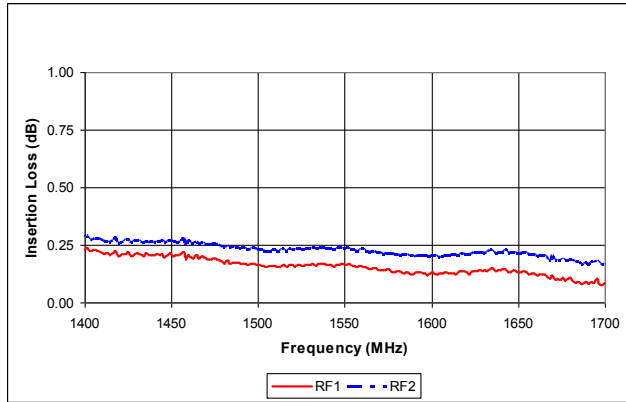
Please observe the following precautions to avoid damage:

Static Sensitivity

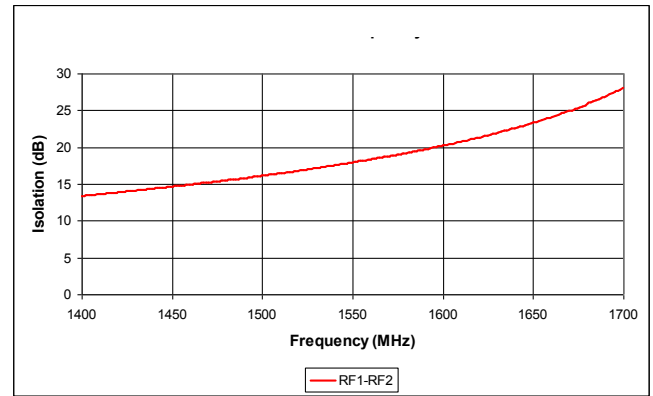
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Typical Performance @ 25°C

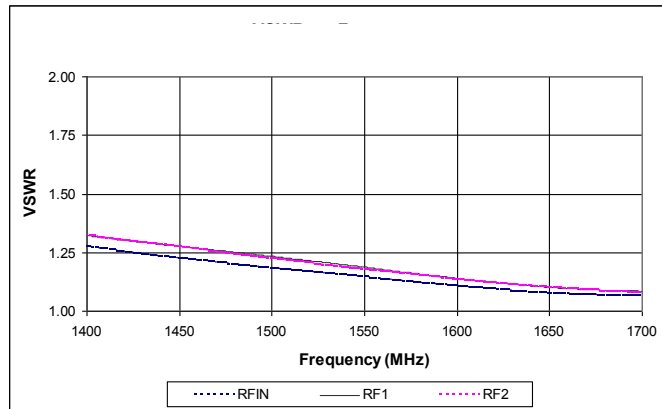
Insertion Loss vs. Frequency



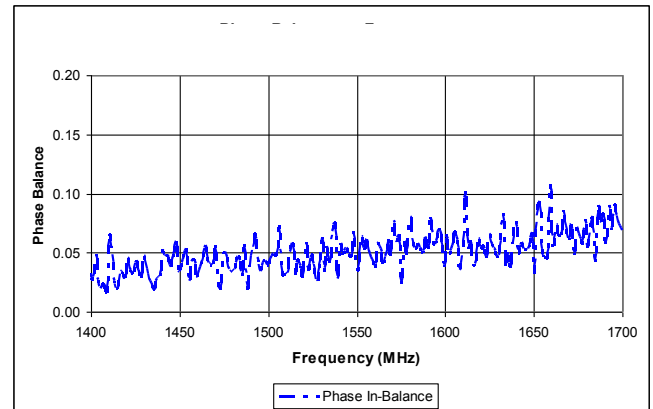
Isolation vs. Frequency



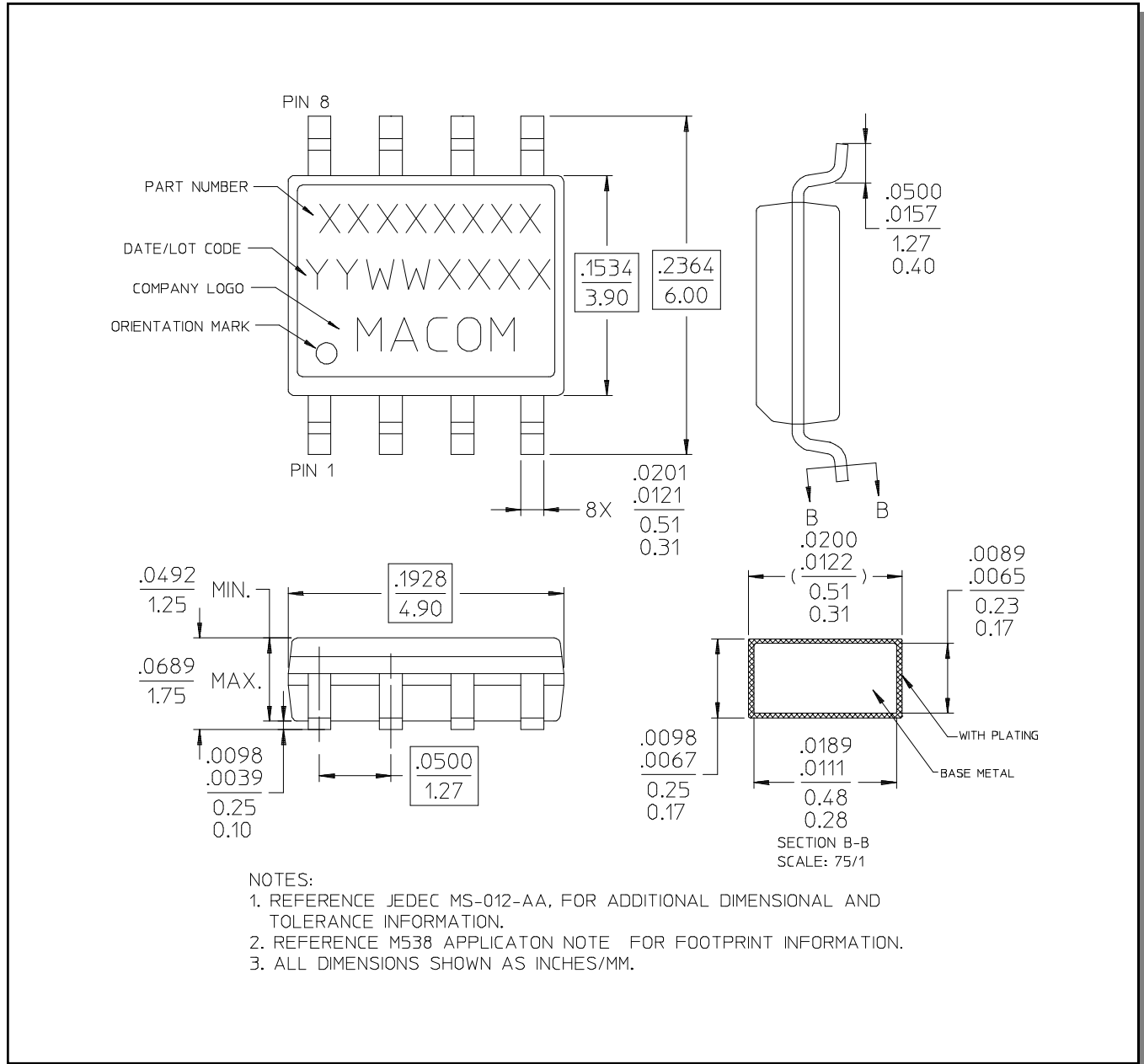
VSWR vs. Frequency



Phase Balance vs. Frequency



Lead-Free, SOIC-8[†]



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

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