

Features

- Small Size and Low Profile
- Industry Standard SOIC-8 SMT Plastic Package
- Excellent Amplitude and Phase Balance
- Superior Repeatability
- Typical Insertion Loss 0.7 dB
- Typical Isolation 21 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 DS52-0002

Description

M/A-COM's MAPDCC0002 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.

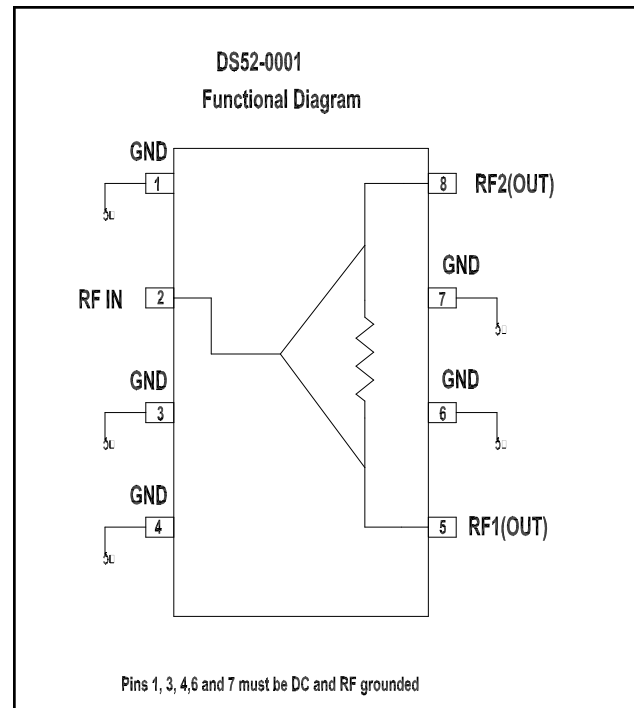
The MAPDCC0002 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

Ordering Information

| Part Number | Package |
|---------------|-------------------|
| MAPDCC0002 | Bulk Packaging |
| MAPDCC0002TR | 1000 piece reel |
| MAPDCC0002-TB | Sample Test Board |

Note: Reference Application Note M513 for reel size information.

Functional Block 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 | Test Conditions | Frequency | Units | Min | Typ | Max |
|-------------------|-----------------|-------------|-------|-----|-------|-------|
| Insertion Loss | Above 3.0 dB | 1850 - 1990 | dB | — | 0.5 | 0.6 |
| Isolation | — | 1850 - 1990 | dB | 15 | 21 | — |
| VSWR | Input RL | 1850 - 1990 | Ratio | — | 1.2:1 | 1.4:1 |
| VSWR | Output RL | 1850 - 1990 | Ratio | — | 1.4:1 | 1.6:1 |
| Amplitude Balance | — | 1850 - 1990 | dB | — | 0.05 | 0.15 |
| Phase Balance | — | 1850 - 1990 | Deg. | — | 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 | 1W 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 0.125W maximum

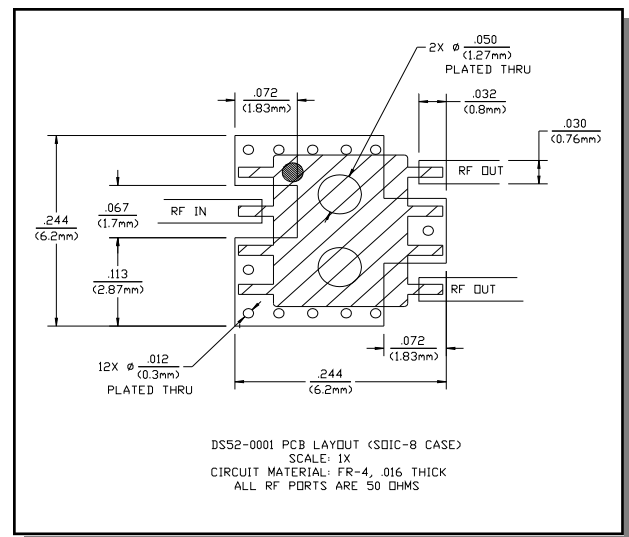
Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

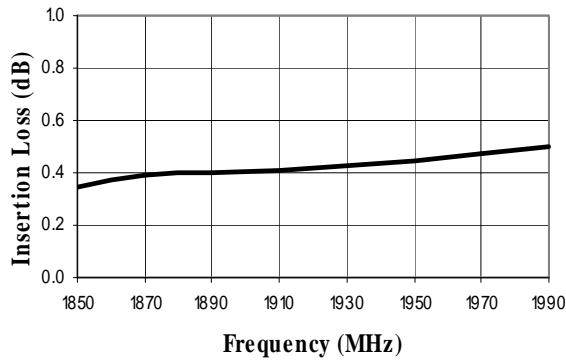
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Recommended PCB Configuration

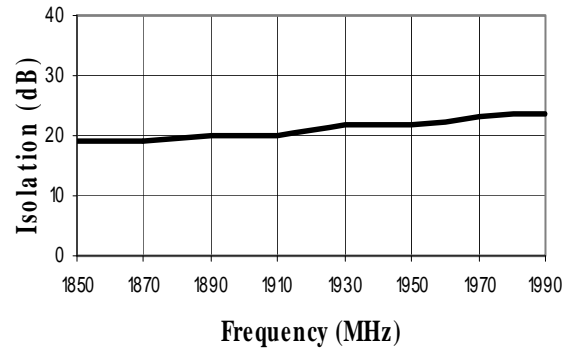


Typical Performance Curves

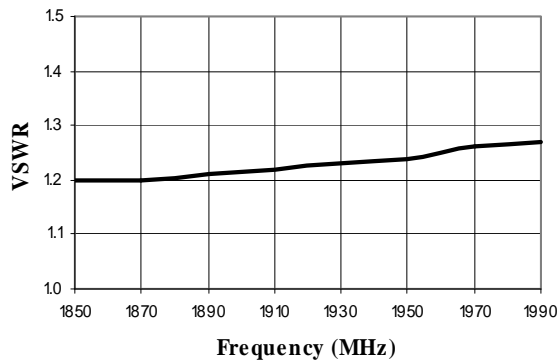
Insertion Loss vs. Frequency
(above theoretical split loss)



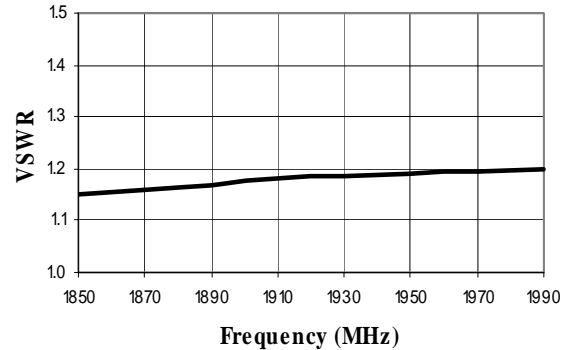
Isolation vs. Frequency



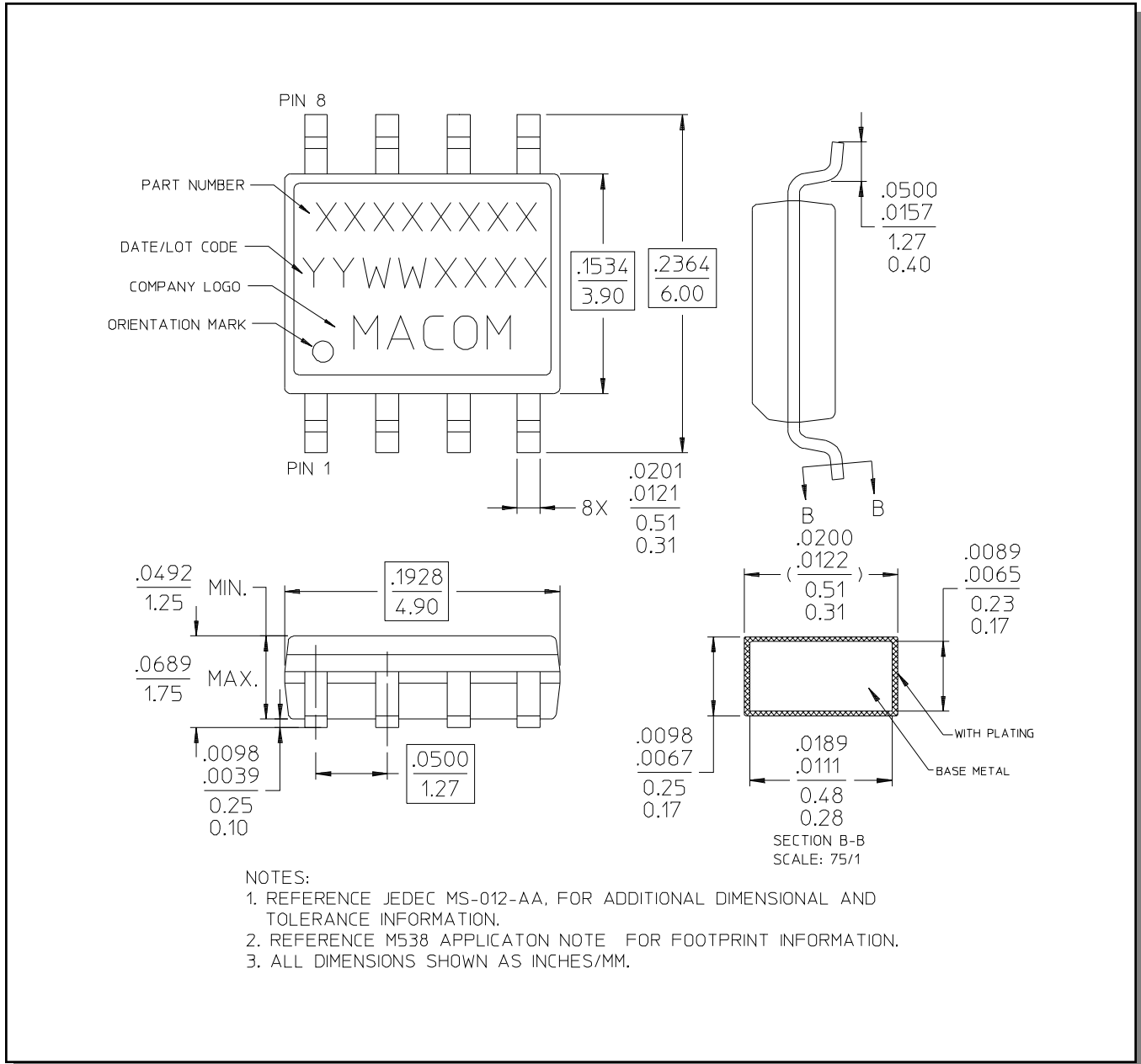
Input VSWR vs. Frequency



Output VSWR vs. Frequency



Lead-Free, SOIC-8[†]



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