

## Features

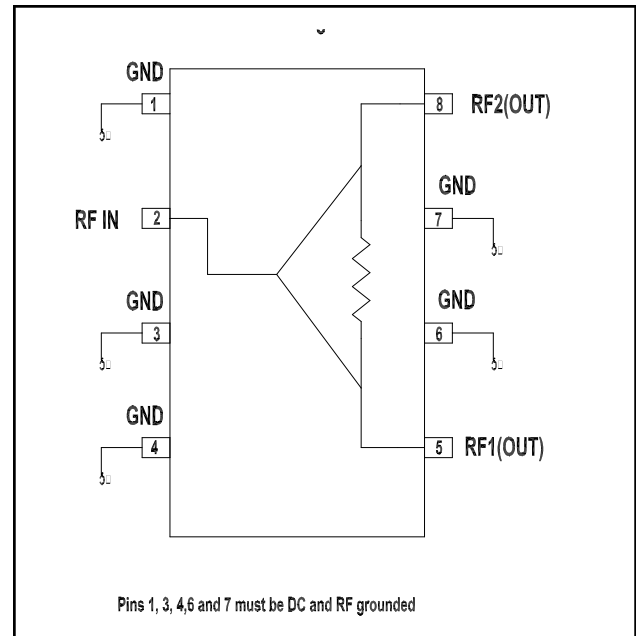
- Small Size and Low Profile
- Excellent Amplitude and Phase Balance
- Superior Repeatability
- Typical Insertion Loss 0.5 dB
- Typical Isolation 23 dB
- 1 Watt Power Handling
- SOIC-8 Package

## Description

M/A-COM's DS52-0001 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 DS52-0001 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

## Functional Block Diagram



## Ordering Information

| Part Number  | Package           |
|--------------|-------------------|
| DS52-0001    | Bulk Packaging    |
| DS52-0001TR  | 1000 piece reel   |
| DS52-0001SAM | Sample Test Board |

Note: Reference Application Note M513 for reel size information.

## 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) |

## Electrical Specifications<sup>1</sup>: $T_A = +25^\circ\text{C}$

| Parameter                  | Units | Min | Typ    | Max   |
|----------------------------|-------|-----|--------|-------|
| Insertion Loss Above 3.0dB | dB    | —   | 0.5    | 0.6   |
| Isolation                  | dB    | 15  | 23     | —     |
| VSWR Input                 | —     | —   | 1.35:1 | 1.5:1 |
| Output                     | —     | —   | 1.25:1 | 1.4:1 |
| Amplitude Balance          | dB    | —   | 0.05   | 0.15  |
| Phase Balance              | Deg.  | —   | 0.5    | 1.5   |

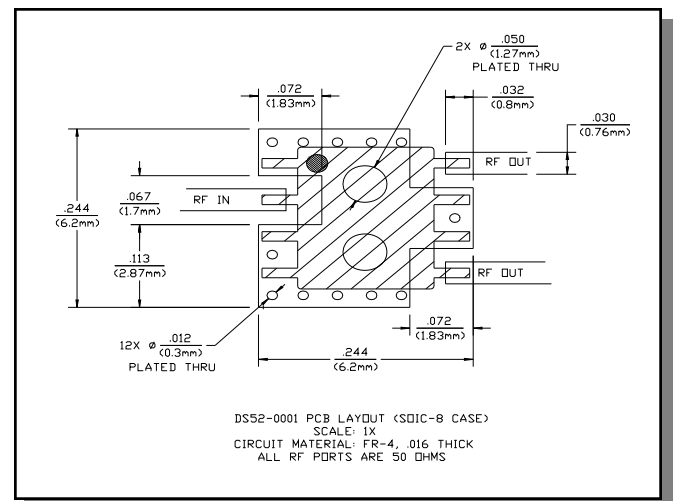
1. All specifications apply with a 50-Ohm source and load impedance.

## Absolute Maximum Ratings<sup>2,3</sup>

| Parameter                | Absolute Maximum |
|--------------------------|------------------|
| Input Power <sup>4</sup> | 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

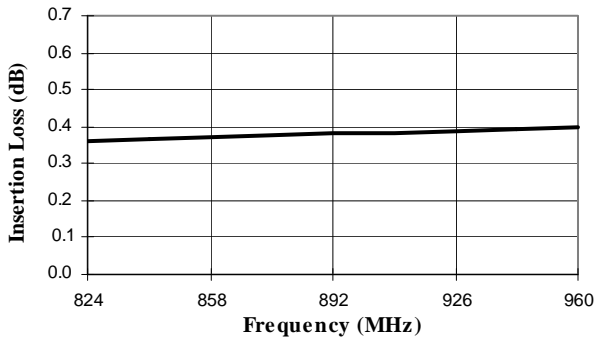
Please observe the following precautions to avoid damage:

## Static Sensitivity

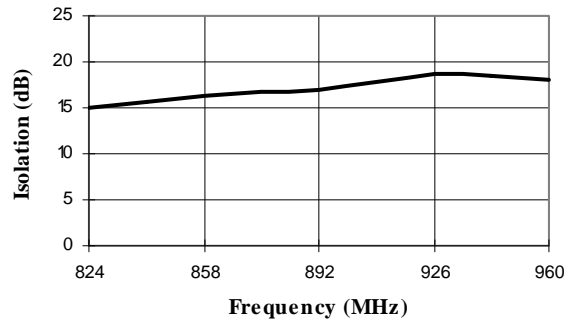
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

## Typical Performance @ +25°C

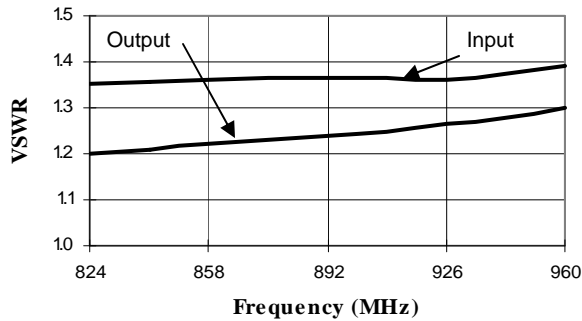
*Insertion Loss vs. Frequency*



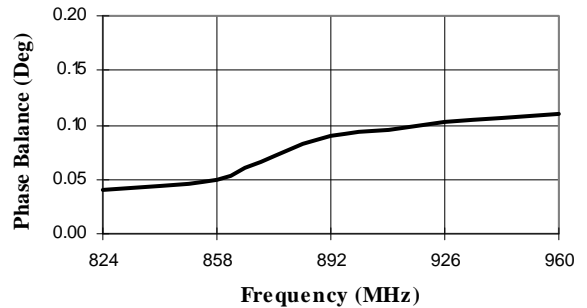
*Isolation vs. Frequency*



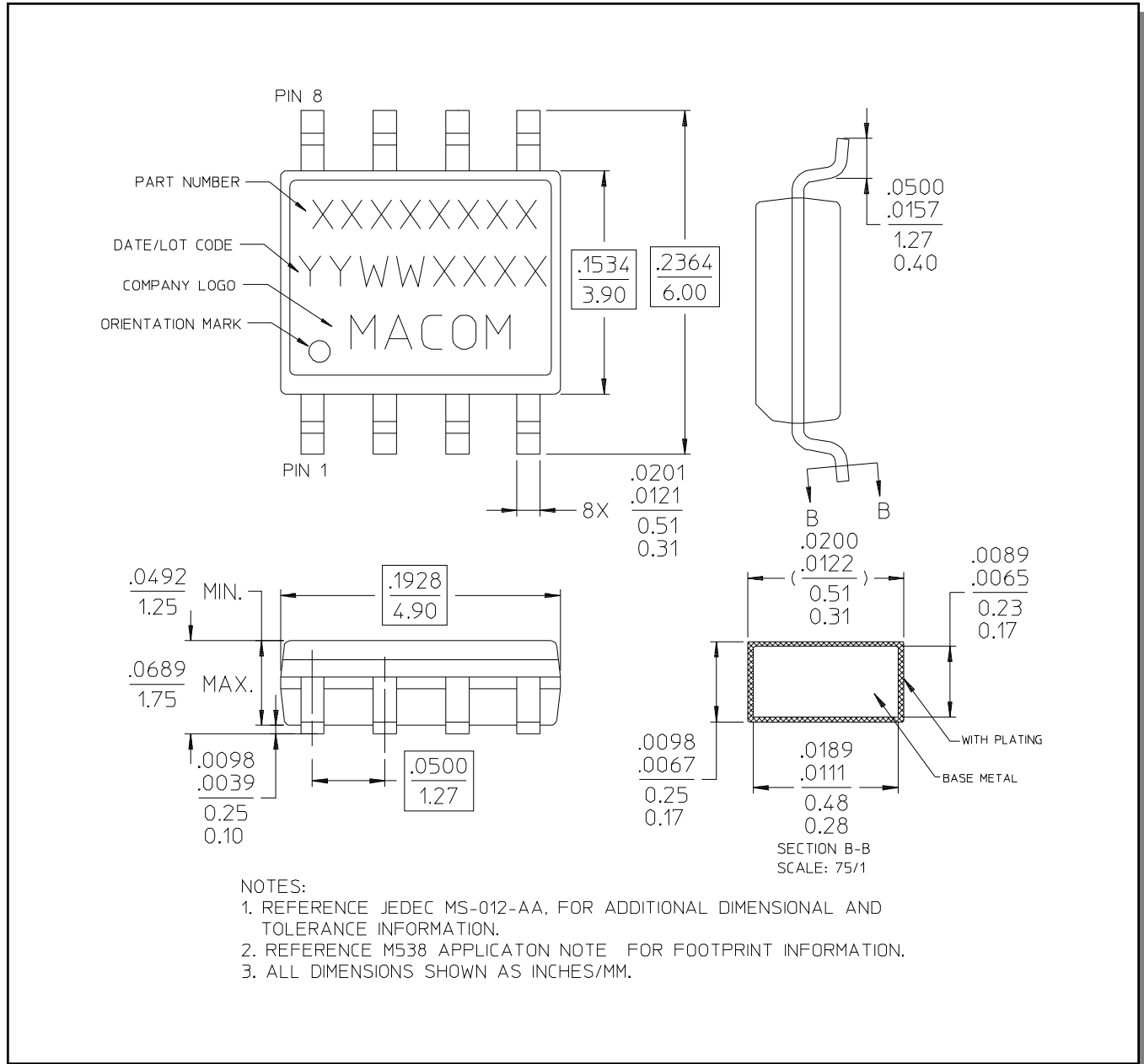
*VSWR vs. Frequency*



*Phase Balance vs. Frequency Relative to RF1*



## SOIC-8<sup>†</sup>



<sup>†</sup> Reference Application Note M538 for lead-free solder reflow recommendations.