

## Features

- Small Size, Low Profile
- Superior Repeatability (Lot-to-lot Variation)
- Industry Standard SOW-16 SMT Plastic Package
- Typical Isolation: 25 dB
- Typical Insertion Loss: 0.3 dB
- Low Cost
- 1 Watt Power Handling
- SOW-16 Package

## Description

M/A-COM's DS56-0001 is an IC-based monolithic power divider in a low cost SOW-16 plastic package. This 6-way power divider is ideally suited for applications where PCB real estate is at a premium and part count reduction and cost are critical. Typical applications include base station switching networks and other cellular equipment, including subscriber units. Available in tape and reel.

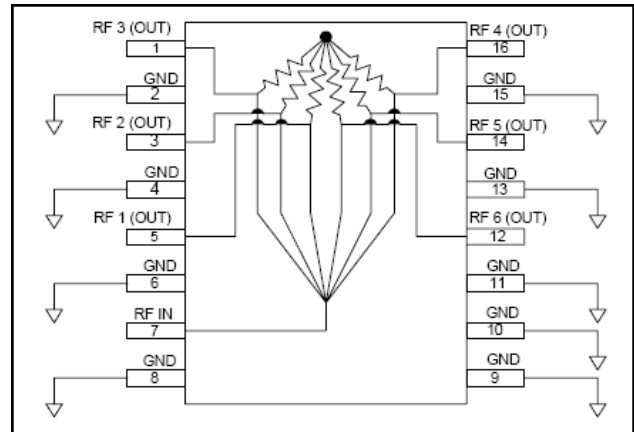
The DS56-0001 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

## Ordering Information

| Part Number  | Package           |
|--------------|-------------------|
| DS56-0001    | Bulk Packaging    |
| DS56-0001-TR | 1000 piece reel   |
| DS56-0001SAM | Sample Test Board |

Note: Reference Application Note M513 for reel size information.

## Functional Diagram<sup>1</sup>



1. Pins 2, 4, 6, 8, 9, 10, 11, 13, and 15 must be DC and RF grounded.

## Pin Configuration

| Pin No. | Function  | Pin No. | Function  |
|---------|-----------|---------|-----------|
| 1       | RF3 (OUT) | 9       | GND       |
| 2       | GND       | 10      | GND       |
| 3       | RF2 (OUT) | 11      | GND       |
| 4       | GND       | 12      | RF6 (OUT) |
| 5       | RF1 (OUT) | 13      | GND       |
| 6       | GND       | 14      | RF5 (OUT) |
| 7       | RF IN     | 15      | GND       |
| 8       | GND       | 16      | RF4 (OUT) |

## Electrical Specifications: $T_A = 25^\circ\text{C}$ , $Z_0 = 50\Omega$

| Parameter                   | Units | Min | Typ   | Max   |
|-----------------------------|-------|-----|-------|-------|
| Insertion Loss Above 7.8 dB | dB    | —   | 1.3   | 1.5   |
| Isolation                   | dB    | 20  | 25    | —     |
| VSWR                        | —     | —   | 1.4:1 | 1.6:1 |
| Amplitude Balance           | dB    | —   | 0.2   | 0.5   |
| Phase Balance               | Deg.  | —   | 6     | 8     |

## 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.

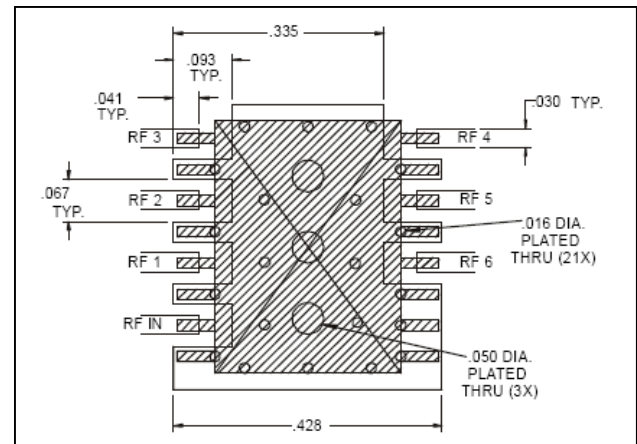
## Handling Procedures

Please observe the following precautions to avoid damage:

## Static Sensitivity

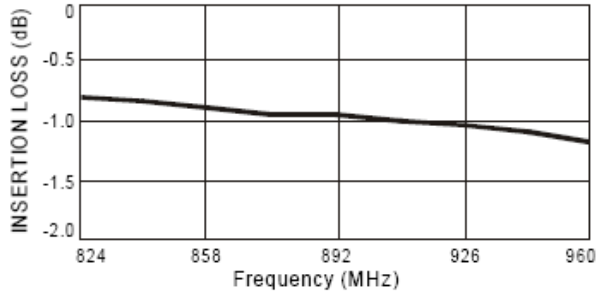
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

## Recommended PCB Configuration

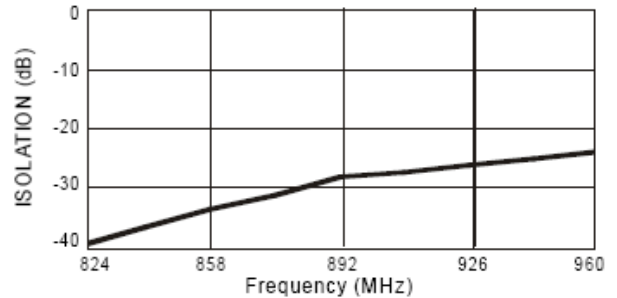


## Typical Performance Curves

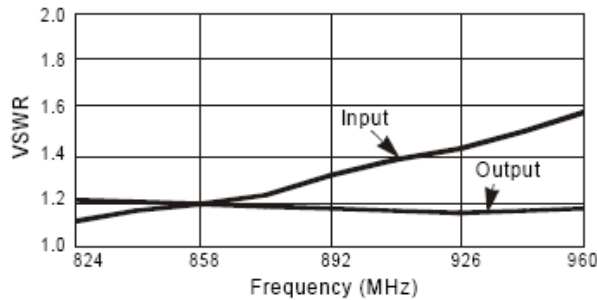
*Insertion Loss vs. Frequency*



*Isolation vs. Frequency*



*VSWR vs. Frequency*

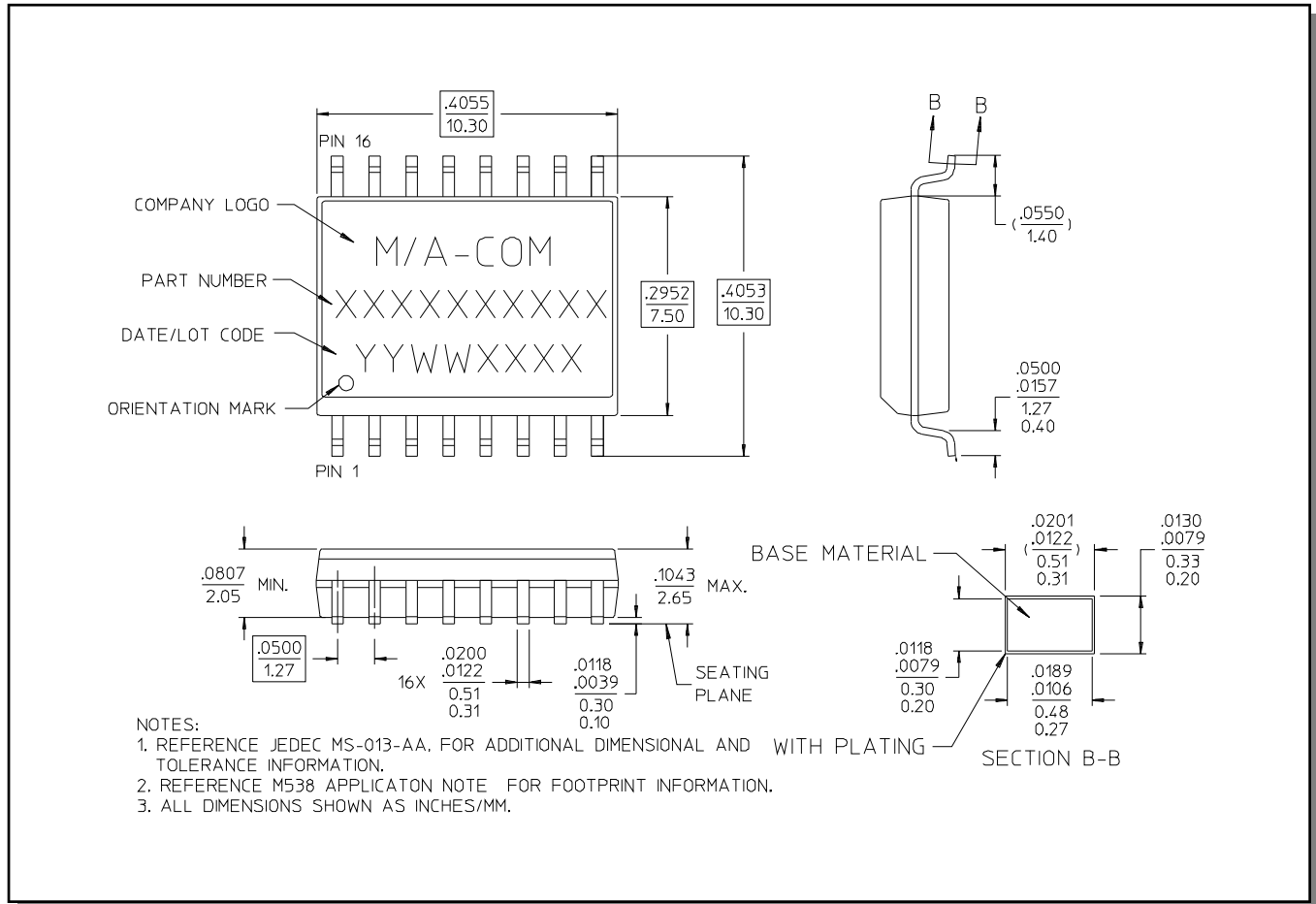


# DS56-0001

## Low Cost Six-Way SMT Power Divider 824 - 960 MHz

Rev. V5

### SOW-16<sup>†</sup>



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