

## Features

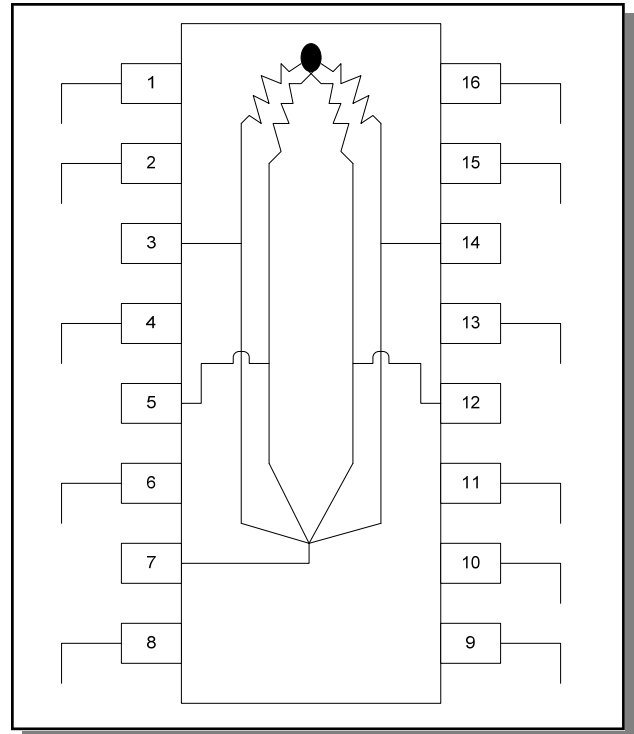
- Small Size and Low Profile
- Industry Standard SOW-16 SMT Plastic Package
- Excellent Repeatability (Lot-to-Lot Variation)
- Typical Isolation: 18 dB
- Typical Amplitude Balance: 0.1 dB
- Low Cost
- Typical Insertion Loss: 1.0 dB
- SOW-16 Package

## Description

M/A-COM's DS54-0002 is an IC-based monolithic power splitter/combiner in a low cost SOW-16 plastic package. This device is ideally suited for applications where PCB real estate is at a premium and standard packaging for automated assembly and low cost are critical. Typical applications include infrastructure, portables and peripheral devices (PCMCIA cards) for wireless standards such as GSM, AMPS, CDPD, RAM and ARDIS. Available in tape and reel.

The DS54-0002 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           |
|--------------|-------------------|
| DS54-0002    | Bulk Packaging    |
| DS54-0002-TR | 1000 piece reel   |
| DS54-0002SAM | Sample Test Board |

Note: Reference Application Note M513 for reel size information.

## Pin Configuration

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

## Electrical Specifications: $T_A = 25^\circ\text{C}^1$

| Parameter                        | Test Conditions | Frequency       | Units | Min | Typ   | Max   |
|----------------------------------|-----------------|-----------------|-------|-----|-------|-------|
| Insertion Loss<br>(Above 6.0 dB) | —               | —               | dB    | —   | 1.0   | 1.5   |
| Isolation                        | —               | 1700 - 1800 MHz | dB    | 18  | 23    | —     |
|                                  |                 | 1801 - 2000 MHz | dB    | 17  | 22    | —     |
| Input VSWR                       | —               | —               | Ratio | —   | 1.5:1 | 1.7:1 |
| Output VSWR                      | —               | 1700 - 1800 MHz | Ratio | —   | —     | 1.3:1 |
|                                  |                 | 1801 - 2000 MHz | Ratio | —   | —     | 1.5:1 |
| Amplitude Balance                | —               | —               | dB    | —   | 0.1   | 0.7   |
| Phase Balance                    | —               | —               | Deg   | —   | 4     | 7     |

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> | 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.

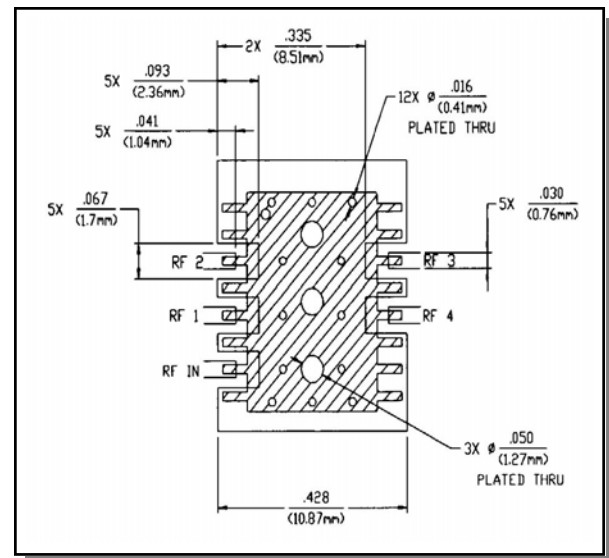
## Handling Procedures

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





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