### Low Cost Four-Way SMT Power Splitter/Combiner, 1700 - 2000 MHz



Rev. V5

#### **Features**

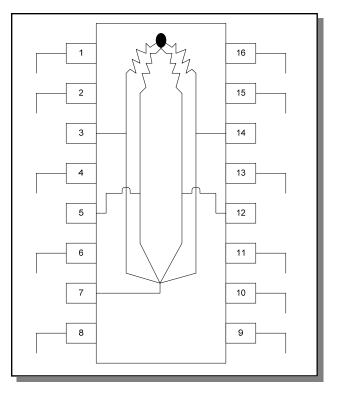
- Small Size and Low Profile •
- Industry Standard SOW-16 SMT Plastic Package
- Excellent Repeatability (Lot-to-Lot Variation)
- Typical Isolation: 18 dB
- Typical Amplitude Balance: 0.1 dB
- Low Cost
- Typical Insertion Loss: 1.0 dB
- SOW-16 Package

#### 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 passiveintegrated circuit process. The process features fullchip passivation for increased performance and reliability.

# **Functional Block Diagram**



# **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	

#### **Ordering Information**

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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.

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PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

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

Parameter	Test Conditions	Frequency	Units	Min	Тур	Max
Insertion Loss (Above 6.0 dB)	_	_	dB	—	1.0	1.5
Isolation	_	1700 - 1800 MHz 1801 - 2000 MHz	dB dB	18 17	23 22	
Input VSWR	_	_	Ratio	_	1.5:1	1.7:1
Output VSWR	_	1700 - 1800 MHz 1801 - 2000 MHz	Ratio Ratio	_	_	1.3:1 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		

2. 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.
- 4. With internal load dissipation of 0.125W maximum.

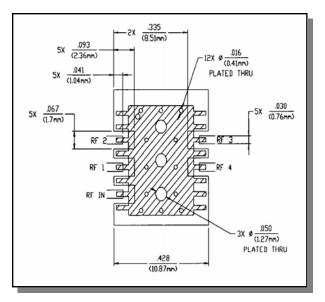
#### Handling Procedures

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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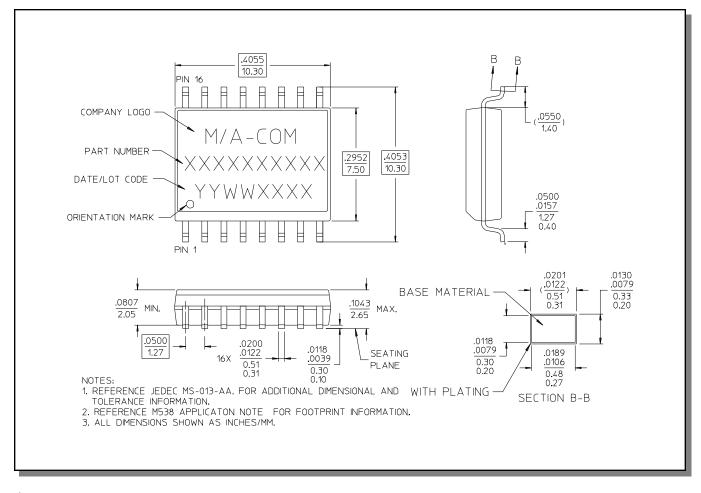
# DS54-0002



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# SOW-16<sup>†</sup>



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

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