

Low Cost Two-Way SMT Power Divider, 1850 - 1990 MHz

M/A-COM Products Rev. 5

#### **Features**

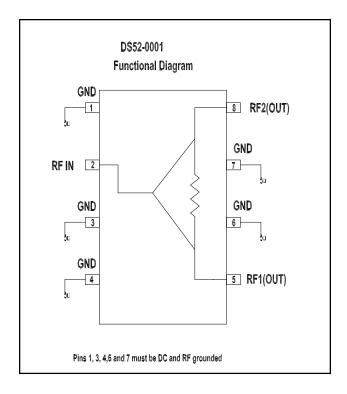
- Small Size and Low Profile
- SOIC-8 Package
- **Excellent Amplitude and Phase Balance**
- Superior Repeatability
- Typical Insertion Loss 0.7 dB
- Typical Isolation 21 dB
- 1 Watt Power Handling

#### **Description**

M/A-COM's DS52-0002 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 DS52-0002 is fabricated using a passiveintegrated circuit process. The process features fullchip passivation for increased performance and reliability.

#### **Functional Block Diagram**



## **Ordering Information**

Part Number	Package
DS52-0002	Bulk Packaging
DS52-0002-TR	1000 piece reel
DS52-0002SAM	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)		

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**PRELIMINARY:** Data Sheets contain information regarding a product M/A-COM 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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<sup>•</sup> Europe Tel: 44.1908.574.200 / Fax: 44.1908.574.300

Asia/Pacific Tel: 81.44.844.8296 / Fax: 81.44.844.8298 Visit www.macom.com for additional data sheets and product information.



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# Electrical Specifications<sup>1</sup>: $T_A = 25$ °C

Parameter	Test Conditions	Frequency	Units	Min	Тур	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

<sup>1.</sup> All specifications apply with a 50-ohm source and load impedance.

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

Parameter	Absolute Maximum		
Input Power 4	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

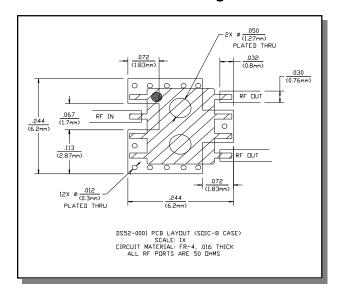
## **Handling Procedures**

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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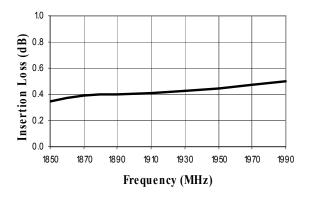


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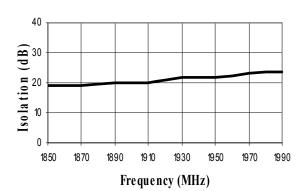
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## **Typical Performance Curves**

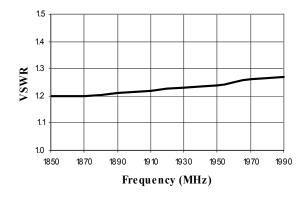
# Insertion Loss vs. Frequency (above theoretical split loss)



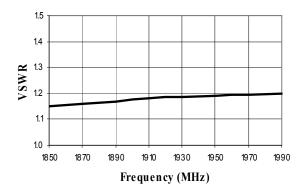
#### Isolation vs. Frequency



#### Input VSWR vs. Frequency



#### Output VSWR vs. Frequency



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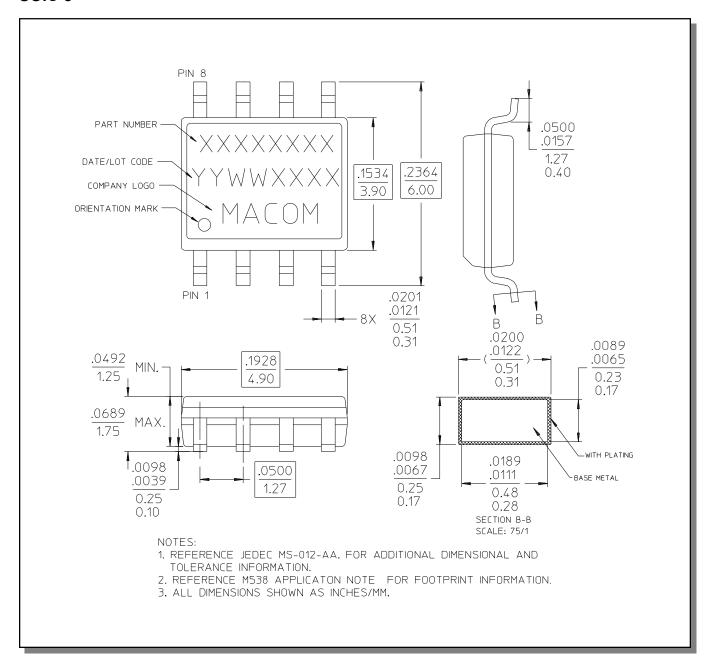
# DS52-0002



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### SOIC-8<sup>†</sup>



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

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