

## Low Cost Three-Way GMIC SMT Power Divider, 1850 - 1990 MHz

Rev. V4

#### Features

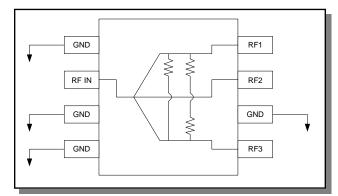
- Small Size and Low Profile
- SOIC-8 Package
- Excellent Amplitude and Phase Balance
- Superior Repeatability
- Typical Insertion Loss: 1.0 dB
- Typical Isolation: 18 dB
- 1 Watt Power Handling

## Description

M/A-COM's DS53-0005 is an IC-based monolithic power divider using M/A-COM's GMIC technology in a low cost SOIC-8 plastic package. This 3-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 personal communication systems and other communication applications where size and PCB real estate are at a premium. Available in tape and reel.

The DS53-0005 is fabricated using a passiveintegrated circuit process. The process features fullchip passivation for increased performance and reliability.

## **Functional Diagram**



## **Pin Configuration**

Pin No.	Function	Pin No.	Function
1	GND	5	RF3
2	RF IN	6	GND
3	GND	7	RF2
4	GND	8	RF1

## **Ordering Information**

Part Number	Package	
DS53-0005	Bulk Packaging	
DS53-0005-TR	1000 piece reel	

Note: Reference Application Note M513 for reel size information.

Parameter	Units	Min	Тур	Max
Insertion Loss above 4.8 dB	dB		1.0	1.4
Isolation	dB	12	18	
VSWR Input	Ratio	_	1.8:1	2.0:1
Amplitude Balance	dB	_	0.3	0.6
Phase Balance	Deg.	_	7	14

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

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

Commitment to produce in volume is not guaranteed.

Visit www.macomtech.com for additional data sheets and product information.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.

<sup>1</sup> 

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 China Tel: +86.21.2407.1588



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## 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.

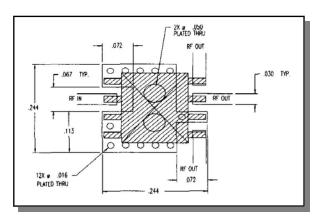
#### **Handling Procedures**

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.

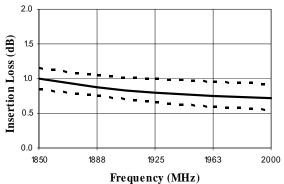
## **Recommended PIN Configuration**

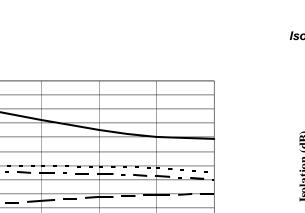


## **Typical Performance Curves**

## Insertion Loss

(Dashed lines show amplitude balance window)





1963

2000

VSWR

2.0

1.9

1.8

1.7

1.6

1.5

1.4 1.3

1.2

1.1

1.0

1850

1888

VSWR

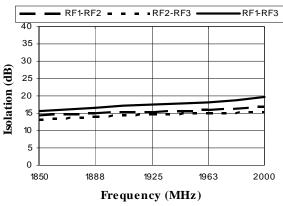
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1925

Frequency (MHz)

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#### Isolation



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## DS53-0005

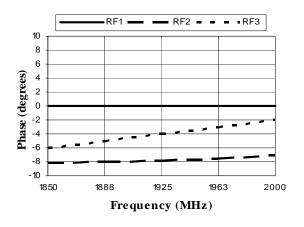
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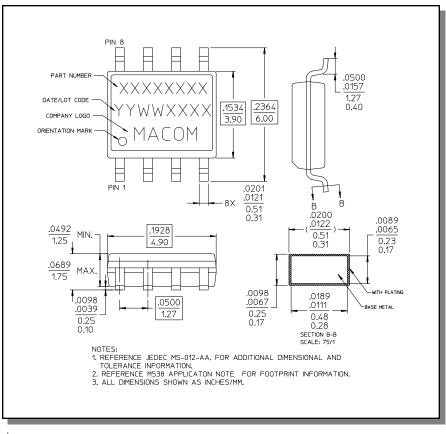
## **Typical Performance Curves**

#### Phase Balance (Relative to RF1)





3



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

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