

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

Rev. V4

Features

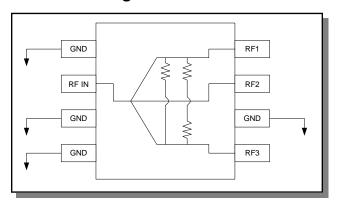
- Small Size and Low Profile
- SOIC-8 Package
- **Excellent Amplitude and Phase Balance**
- Superior Repeatability
- Typical Insertion Loss: 1.0 dB
- Typical Isolation: 18 dB
- 1 Watt Power Handling

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.

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

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

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

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Absolute Maximum Ratings ^{2,3}

Parameter	Absolute Maximum		
Input Power 4	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 2. 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.

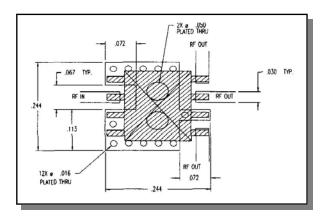
Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

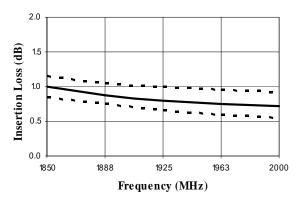
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Recommended PIN Configuration

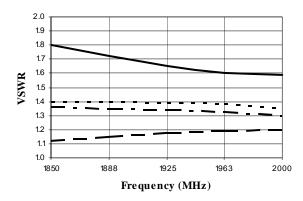


Typical Performance Curves

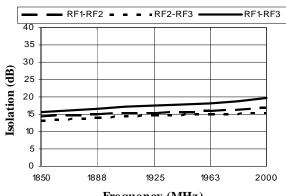
Insertion Loss (Dashed lines show amplitude balance window)



VSWR



Isolation



Frequency (MHz)

- North America Tel: 800.366.2266 Europe Tel: +353.21.244.6400
- India Tel: +91.80.4155721
- China Tel: +86.21.2407.1588

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

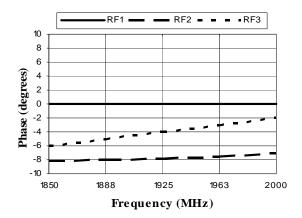


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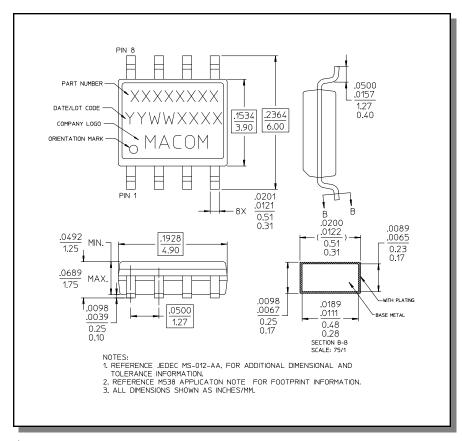
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Typical Performance Curves

Phase Balance (Relative to RF1)



SOIC-8[†]



Reference Application Note M538 for lead-free solder reflow recommendations.

typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed. PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are

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