Low Cost Six-Way Power Divider 824 – 960 MHz



Rev. V4

### Features

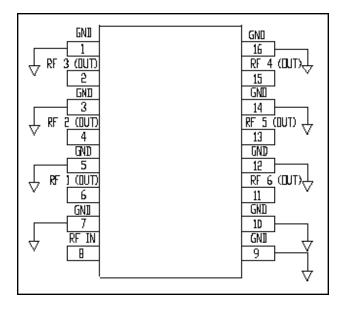
- Small Size, Low Profile
- Superior Repeatability (Lot-to-Lot Variation)
- Typical Isolation 25 dB
- Typical Insertion Loss 0.8 dB
- Low Cost
- SOIC-16 Package

### Description

M/A-COM's DS56-0005 is an IC-based monolithic power divider in a low cost SOIC-16 plastic package. The 6-way power divider is ideally suited for applications where PCB real estate is at a premium and part count reduction and cost are critical. Typical applications include base station switching networks and other cellular equipment, including subscriber units. Available in Tape and Reel.

The DS56-0005 is fabricated using a passiveintegrated circuit process. The process features fullchip passivation for increased performance and reliability.

## Functional Block Diagram<sup>1</sup>



1. All unused pins must be RF and DC grounded.

# **Pin Configuration**

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

# **Ordering Information**

Part Number	Package	
DS56-0005	Bulk Packaging	
DS56-0005-TR	1000 piece reel	

Note: Reference Application Note M513 for reel size information.

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

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# Electrical Specifications: $T_A = 25^{\circ}C$ , $Z_0 = 50\Omega$

Parameter	Units	Min	Тур	Мах
Insertion Loss above 7.8 dB	dB	—	0.8	1.2
Isolation	dB	20	25	—
VSWR Input Output			1.4:1 1.3:1	1.8:1 1.5:1
Amplitude Balance	dB	—	0.5	0.9
Phase Balance	Deg.	—	4	8

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

Parameter	Absolute Maximum		
Input Power <sup>4</sup>	1 W CW		
Operating Temperature	-40°C to +85°C		
Storage Temperature	-65°C to +150°C		

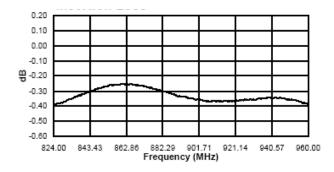
2. Exceeding any one or combination of these limits may cause permanent damage to this device.

 M/A-COM does not recommend sustained operation near these survivability limits.

4. With internal load dissipation of 0.125 W maximum.

# **Typical Performance Curves**

#### Insertion Loss vs. Frequency



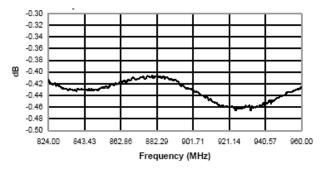
### **Handling Procedures**

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.

#### Amplitude Imbalance vs. Frequency



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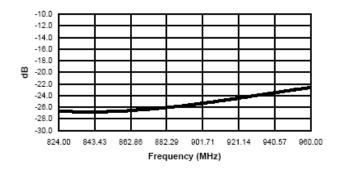
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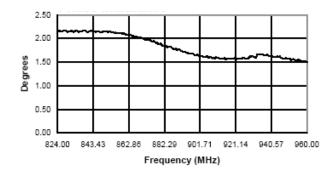


# **Typical Performance Curves**

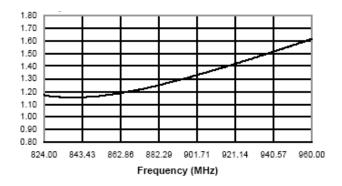
#### Isolation vs. Frequency



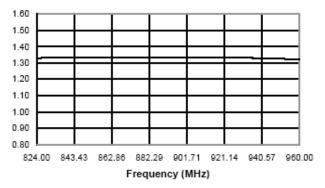
#### Phase Imbalance vs. Frequency



#### Input VSWR vs. Frequency



**Output VSWR vs. Frequency** 



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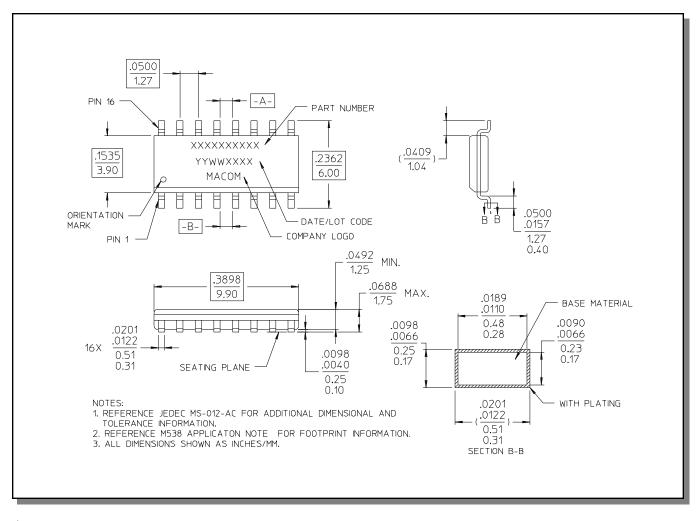
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### SOIC-16<sup>†</sup>



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

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