Low Cost Six-Way Power Divider 824 – 960 MHz



Rev. V4

Features

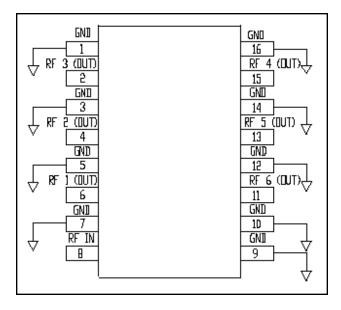
- Small Size, Low Profile
- Superior Repeatability (Lot-to-Lot Variation)
- Typical Isolation 25 dB
- Typical Insertion Loss 0.8 dB
- Low Cost
- SOIC-16 Package

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 Diagram¹



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

1

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.

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

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 ^{2,3}

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

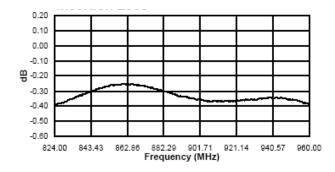
2. Exceeding any one or combination of these limits may cause permanent damage to this device.

 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



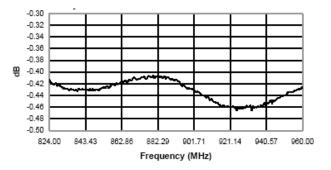
Handling Procedures

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



2

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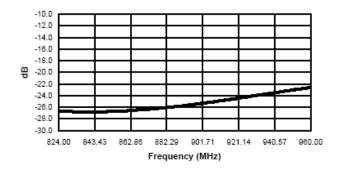
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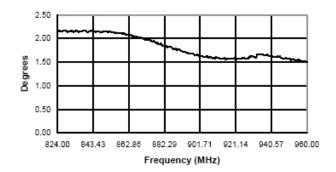


Typical Performance Curves

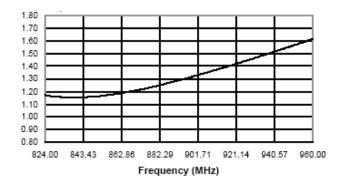
Isolation vs. Frequency



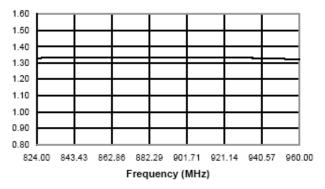
Phase Imbalance vs. Frequency



Input VSWR vs. Frequency



Output VSWR vs. Frequency



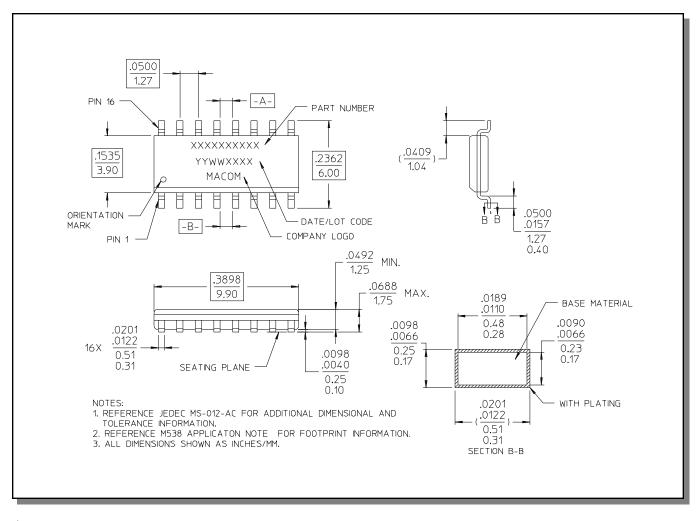
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SOIC-16[†]



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

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