DS52-0014

Tyco Electronics

Low Cost Two-Way GMIC SMT Power Divider 1700 – 2000 MHz

M/A-COM Products
Rev. 4

Features

- Small Size and Low Profile
- Typical Insertion Loss: 0.6 dB
- Typical Amplitude Balance: 0.2 dB
- 1 Watt Power Handling
- SOT-26 Package

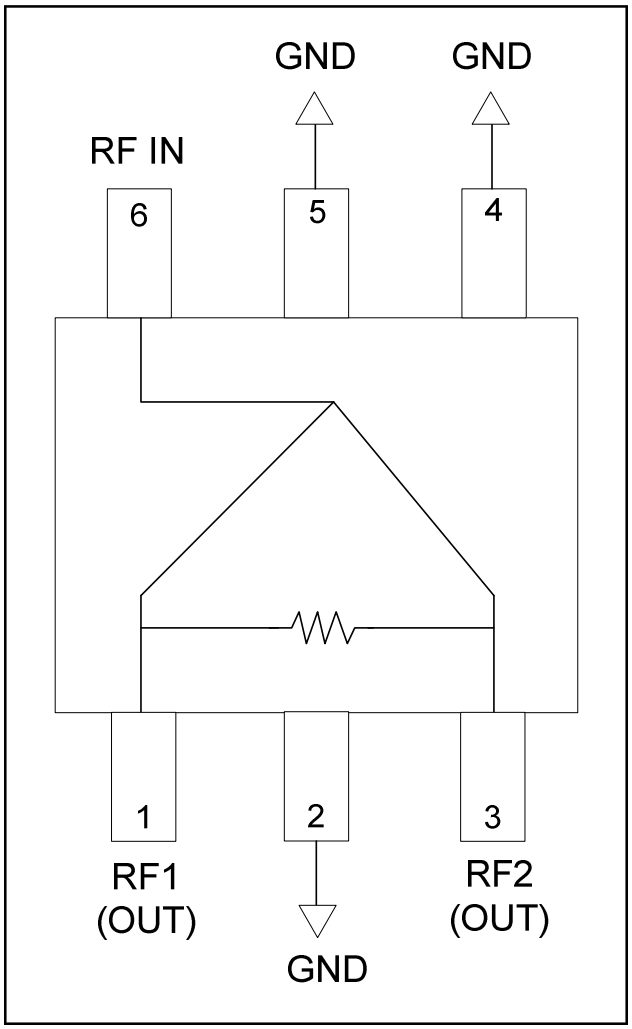
Description

M/A-COM's DS52-0014 is an IC-based monolithic power divider using M/A-COM's GMIC technology in a low cost SOT-26 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 handsets, base station switching networks and other communication applications where size and PCB real estate are at a premium. Available in Tape and Reel.

The DS52-0014 is fabricated using a passive integrated circuit process. The process features full-chip passivation for increased performance and reliability.

Functional Diagram



Ordering Information

Part Number	Package
DS52-0014	Bulk Packaging
DS52-0014-TR	1000 piece reel

Note: Reference Application Note M513 for reel size information.

Pin Configuration

Pin No.	Function	Pin No.	Function
1	RF1 (OUT)	4	GND
2	GND	5	GND
3	RF2 (OUT)	6	RF IN

• **North America** Tel: 800.366.2266 / Fax: 978.366.2266
• **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.

Electrical Specifications: T_A = 25°C[1]

Parameter	Test Conditions	Units	Min	Typ	Max
Insertion Loss Above 3.0 dB	1700 - 2000 MHz	dB	—	0.6	0.8
Isolation	1700 - 2000 MHz	dB	16	20	—
VSWR Input RF1, RF2 Outputs	1700 - 2000 MHz 1700 - 2000 MHz	Ratio Ratio	— —	1.2:1 1.1:1	1.4:1 1.3:1
Amplitude Balance	1700 - 2000 MHz	dB	—	0.2	0.4
Phase Balance	1700 - 2000 MHz	Deg.	—	1.5	3.0

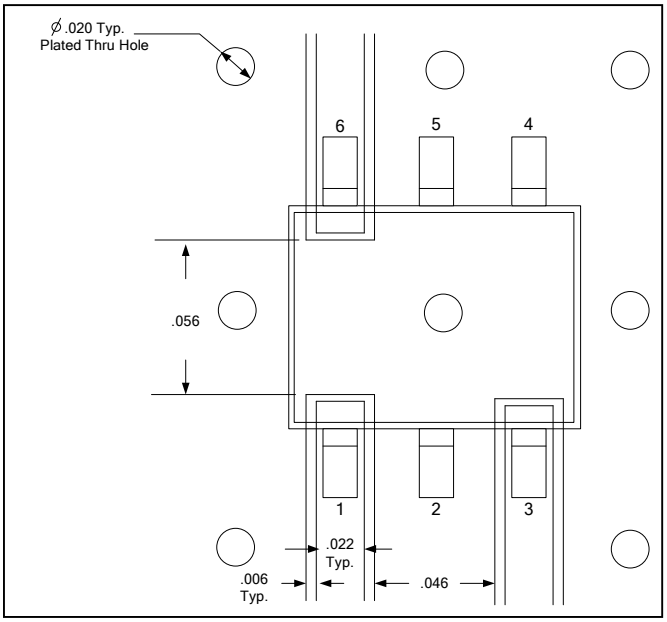
1. All specifications apply with a 50-ohm source and load impedance.

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

2. Exceeding any one or combination of these limits may cause permanent damage to this device.
3. M/A-COM does not recommend sustained operation near these survivability limits.
4. With internal load dissipation of 0.125 W maximum.

Recommended PCB Configuration



Handling Procedures

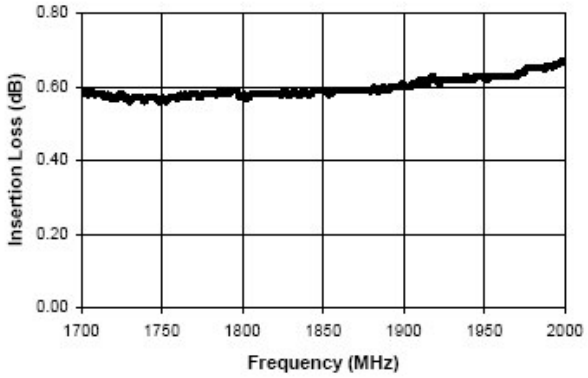
Please observe the following precautions to avoid damage:

Static Sensitivity

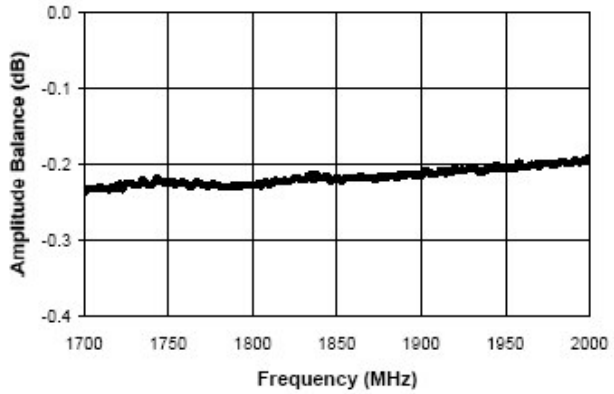
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices."

Typical Performance Curves @ 25ºC

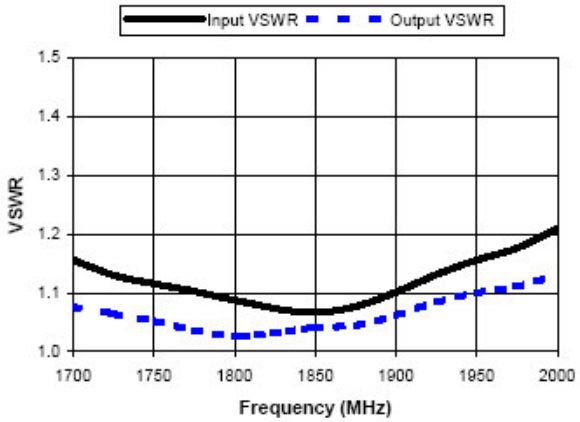
Insertion Loss vs. Frequency



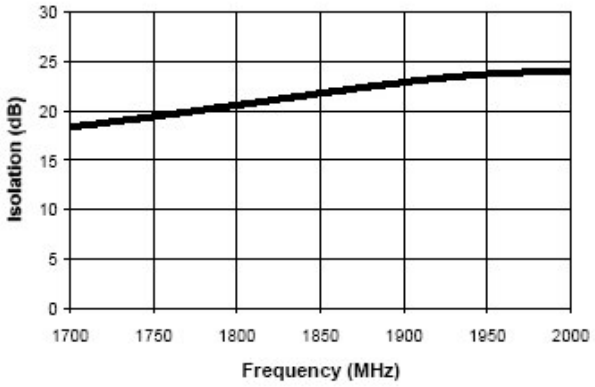
Amplitude Balance vs. Frequency



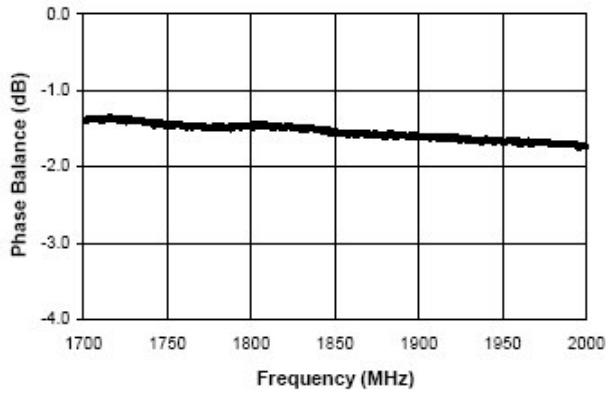
VSWR vs. Frequency



Isolation vs. Frequency



Phase Balance vs. Frequency



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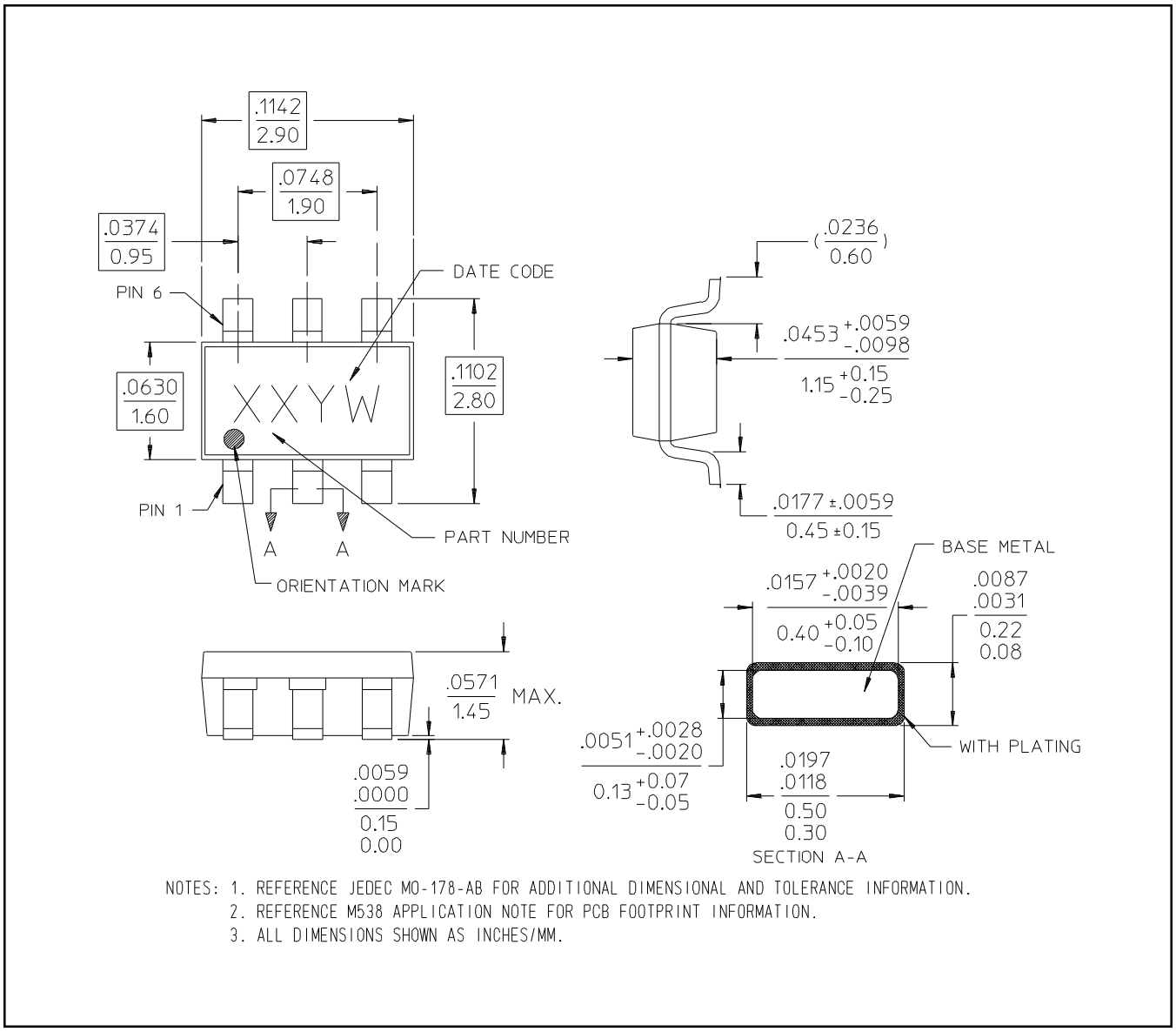
SOT-26†



NOTES: 1. REFERENCE JEDEC MO-178-AB FOR ADDITIONAL DIMENSIONAL AND TOLERANCE INFORMATION.
2. REFERENCE M538 APPLICATION NOTE FOR PCB FOOTPRINT INFORMATION.
3. ALL DIMENSIONS SHOWN AS INCHES/MM.

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

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