

Rev. V4

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

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.

Ordering Information

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

Note: Reference Application Note M513 for reel size information.

Functional Diagram



Pin Configuration

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

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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°C¹

| Parameter | Test Conditions | Units | Min | Тур | 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.

- M/A-COM does not recommend sustained operation near these survivability limits.
- 4. With internal load dissipation of 0.125 W maximum.

Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

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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 PCB Configuration



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Typical Performance Curves @ 25°C

Insertion Loss vs. Frequency



VSWR vs. Frequency



Phase Balance vs. Frequency



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Amplitude Balance vs. Frequency







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SOT-26[†]



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

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