Low Cost Two-Way SMT Power Divider, 1700 - 1900 MHz



Rev. V6

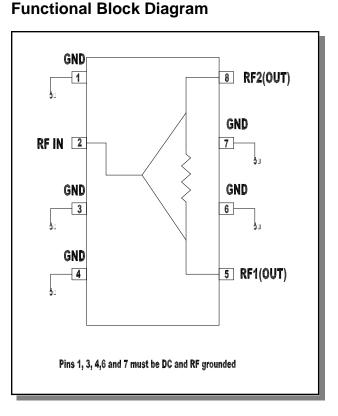
Features

- Small Size and Low Profile
- SOIC-8 Package •
- Superior Repeatability •
- Excellent Amplitude Balance: 0.05 dB Typical •
- Excellent Insertion Loss: 0.3 dB Typical •
- Low Cost
- DCS-1800 Frequency Coverage •

Description

M/A-COM's DS52-0005 is an IC-based monolithic power divider in a low cost SOIC-8 plastic package. This 2-way power splitter is ideally suited for applications where small size, low profile and low cost, without sacrificing performance are required. Typical applications include base station, portables and PCMCIA cards for DCS-1800 European applications. Available in tape and reel.

The DS52-0005 is fabricated using a passiveintegrated circuit process. The process features fullchip passivation for increased performance and reliability.



Pin Configuration

| Pin No. | Function | | |
|---------|------------|--|--|
| 1 | GND | | |
| 2 | RF-IN | | |
| 3 | GND | | |
| 4 | GND | | |
| 5 | RF-1 (out) | | |
| 6 | GND | | |
| 7 | GND | | |
| 8 | RF-2 (out) | | |

Ordering Information

| Part Number | Package | |
|--------------|-------------------|--|
| DS52-0005 | Bulk Packaging | |
| DS52-0005-TR | 1000 piece reel | |
| DS52-0005SAM | Sample Test Board | |

Note: Reference Application Note M513 for reel size information.

1

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

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. M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make Commitment to produce in volume is not guaranteed.



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Electrical Specifications¹: T_A = 25°C

| Parameter | Test Conditions | Frequency | Units | Min | Тур | Max |
|-------------------|-----------------|-------------|-------|-----|-------|-------|
| Insertion Loss | Above 3.0 dB | 1700 - 1900 | dB | — | 0.3 | 0.5 |
| Isolation | — | 1700 - 1900 | dB | 15 | 20 | — |
| VSWR | _ | 1700 - 1900 | Ratio | _ | 1.3:1 | 1.5:1 |
| Amplitude Balance | _ | 1700 - 1900 | dB | — | 0.1 | 0.15 |
| Phase Balance | _ | 1700 - 1900 | Deg | _ | 2 | 4 |

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 0.125W maximum

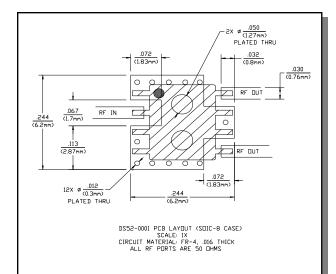
Handling Procedures

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 PCB Configuration



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DS52-0005

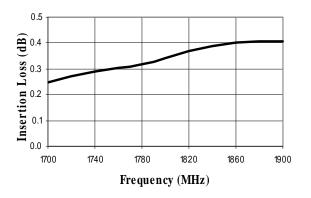
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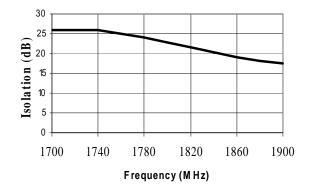
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Typical Performance Curves

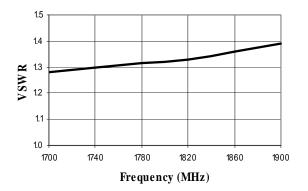
Insertion Loss vs. Frequency (above theoretical split loss)



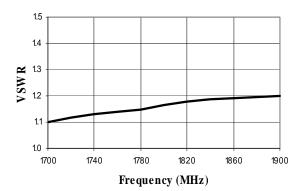
Isolation vs. Frequency



Input VSWR vs. Frequency



Output VSWR vs. Frequency



3

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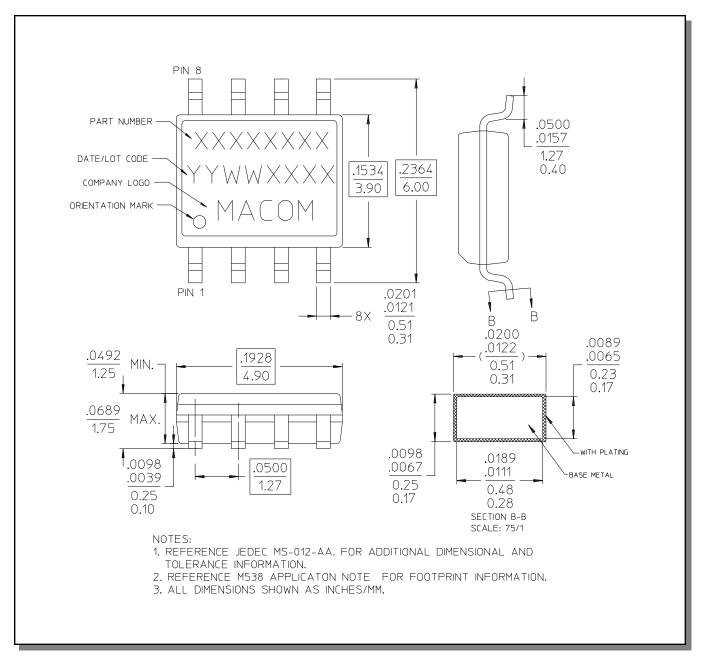
DS52-0005

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SOIC-8[†]



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

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