

Features

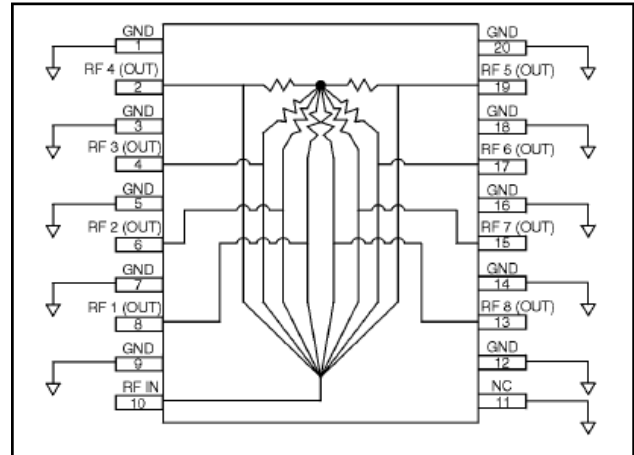
- Small Size, Low Profile
- Superior Repeatability (Lot-to-Lot Variation)
- Typical Isolation: 30 dB
- Typical Insertion Loss: 1.5 dB
- Low Cost
- 1 Watt Power Handling
- QSOP-20 Package

Description

M/A-COM's DS58-0001 is an IC-based monolithic power divider in a low cost QSOP-20 plastic package. This 8-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 DS58-0001 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

Functional Block Diagram



1. Pins 1, 3, 5, 7, 9, 12, 14, 16, 18, and 20 should be RF and DC grounded.

Ordering Information

| Part Number | Package |
|--------------|-------------------|
| DS58-0001 | Bulk Packaging |
| DS58-0001-TR | 1000 piece reel |
| DS58-0001SAM | Sample Test Board |

Note: Reference Application Note M513 for reel size information.

Pin Configuration

| Pin No. | Function | Pin No. | Function |
|---------|------------|---------|------------|
| 1 | GND | 11 | NC |
| 2 | RF 4 (OUT) | 12 | GND |
| 3 | GND | 13 | RF 8 (OUT) |
| 4 | RF 3 (OUT) | 14 | GND |
| 5 | GND | 15 | RF 7 (OUT) |
| 6 | RF 2 (OUT) | 16 | GND |
| 7 | GND | 17 | RF 6 (OUT) |
| 8 | RF 1 (OUT) | 18 | GND |
| 9 | GND | 19 | RF 5 (OUT) |
| 10 | RF IN | 20 | GND |

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

| Parameter | Units | Min | Typ | Max |
|-----------------------------|-------|-----|-------|-------|
| Insertion Loss Above 9.0 dB | dB | — | 1.5 | 2.0 |
| Isolation | dB | 20 | 30 | — |
| VSWR | — | — | 1.7:1 | 2.0:1 |
| Amplitude Balance | dB | — | 0.4 | 0.8 |
| Phase Balance | Deg. | — | 5 | 10 |

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 |

- 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.
- With internal load dissipation of 0.125 W maximum.

Handling Procedures

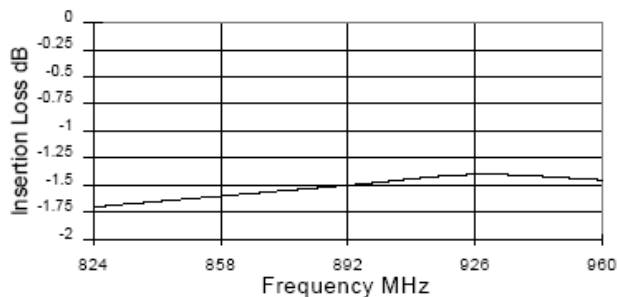
Please observe the following precautions to avoid damage:

Static Sensitivity

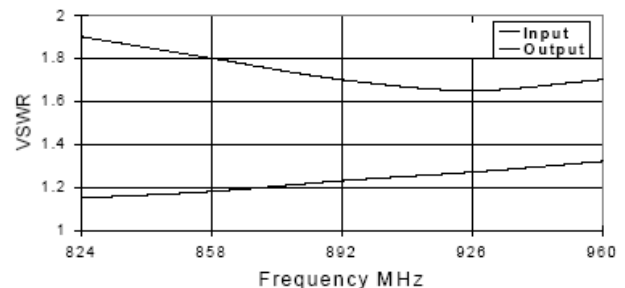
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Typical Performance Curves @ 25°C

Insertion Loss vs. Frequency

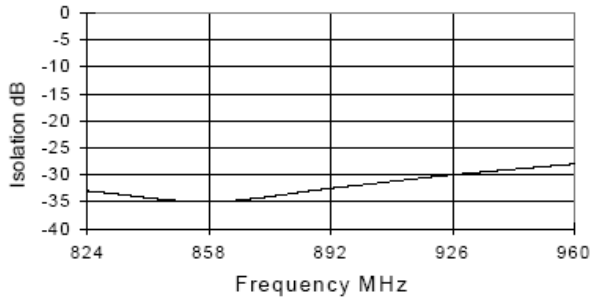


VSWR vs. Frequency

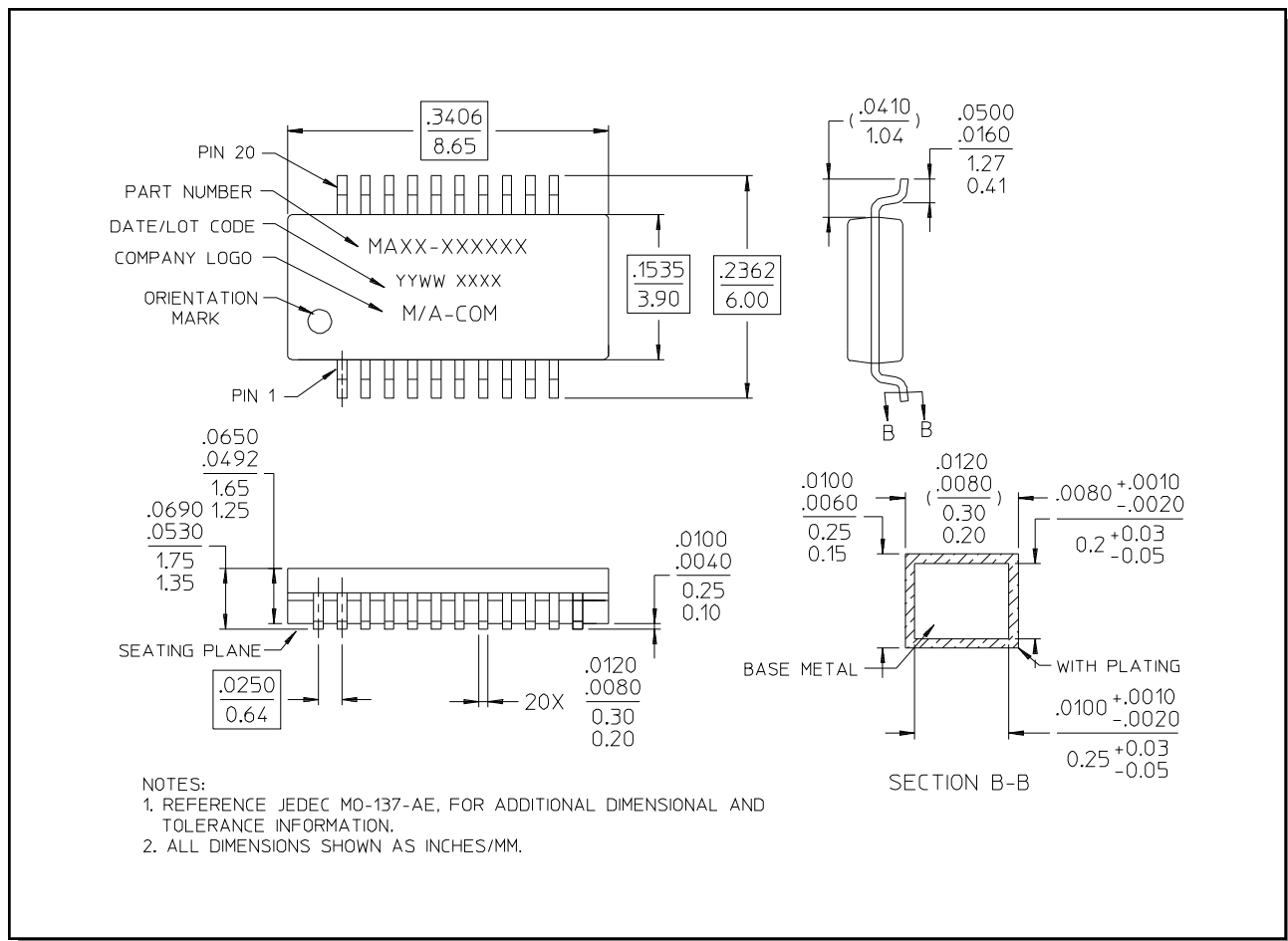


Typical Performance Curves @ 25°C

Isolation vs. Frequency



QSOP-20[†]



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