MAPDCC0001

Low Cost Two-Way SMT Power Divider 824-960 MHz

Rev. V4

Features

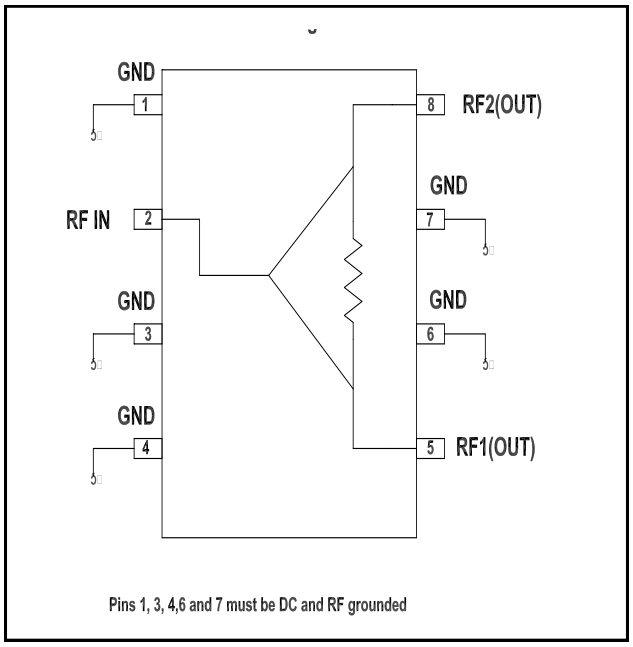
- Small Size and Low Profile
- Excellent Amplitude and Phase Balance
- Superior Repeatability
- Typical Insertion Loss 0.5 dB
- Typical Isolation 23 dB
- 1 Watt Power Handling
- Lead-Free SOIC-8 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS52-0001

Description

M/A-COM’s MAPDCC0001 is an IC-based monolithic power divider in a low cost SOIC-8 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 base station switching networks and other communication applications where size and PCB real estate are a premium. Available in tape and reel.

The MAPDCC0001 is fabricated using a passive-integrated circuit process. The process features full -chip passivation for increased performance and reliability.

Functional Block Diagram



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
MAPDCC0001	Bulk Packaging
MAPDCC0001TR	1000 piece reel
MAPDCC0001-TB	Sample Test Board

Note: Reference Application Note M513 for reel size information.

* Restrictions on Hazardous Substances, European Union Directive 2002/95/EC.

Electrical Specifications[1]: T_A = +25°C

Parameter		Units	Min	Typ	Max
Insertion Loss	Above 3.0dB	dB	—	0.5	0.6
Isolation		dB	15	23	—
VSWR	Input Output	— —	— —	1.35:1 1.25:1	1.5:1 1.4:1
Amplitude Balance		dB	—	0.05	0.15
Phase Balance		Deg.	—	0.5	1.5

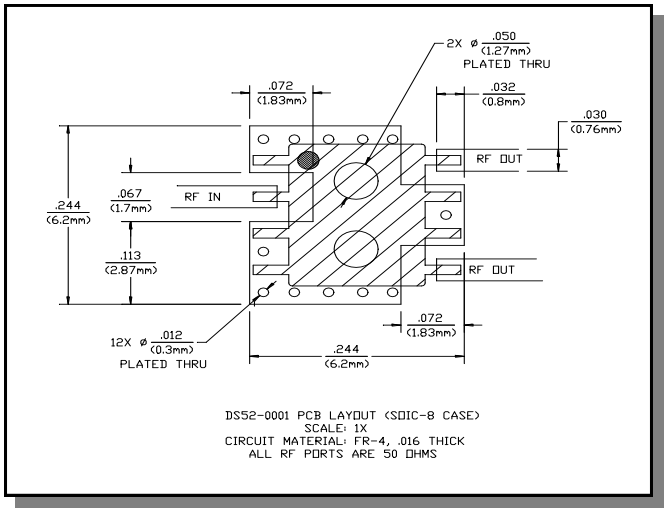
1. All specifications apply with a 50-Ohm source and load impedance.

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.
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

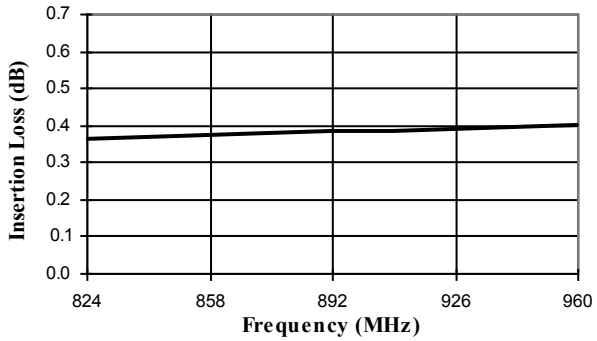
Please observe the following precautions to avoid damage:

Static Sensitivity

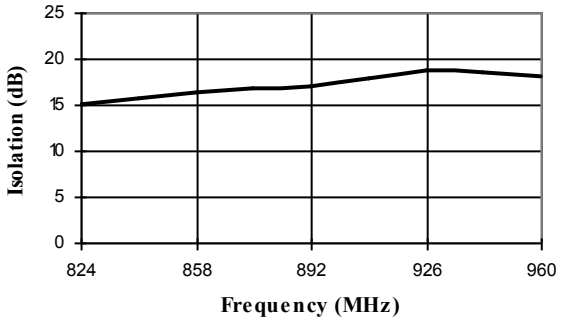
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Typical Performance @ +25ºC

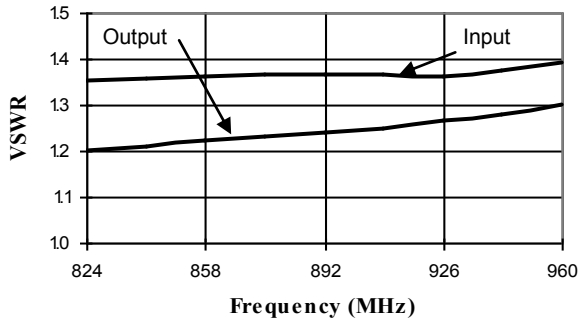
Insertion Loss vs. Frequency



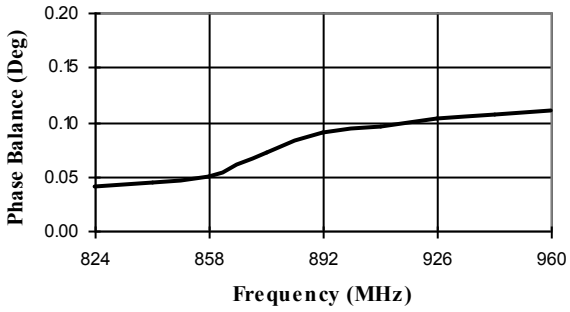
Isolation vs. Frequency



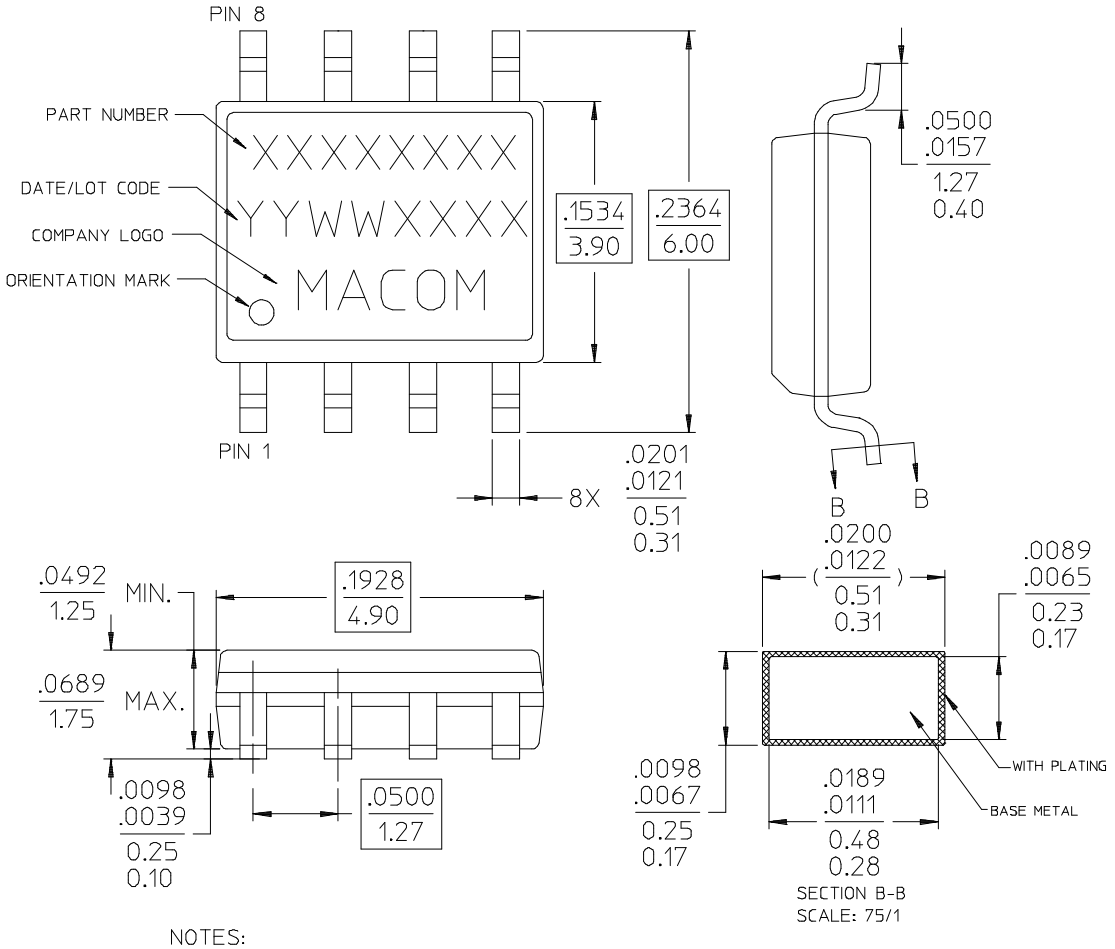
VSWR vs. Frequency



Phase Balance vs. Frequency Relative to RF1



Lead-Free, SOIC-8†



NOTES:
1. REFERENCE JEDEC MS-012-AA, FOR ADDITIONAL DIMENSIONAL AND TOLERANCE INFORMATION.
2. REFERENCE M538 APPLICATON NOTE FOR FOOTPRINT INFORMATION.
3. ALL DIMENSIONS SHOWN AS INCHES/MM.

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