

Features

- Small Size, Low Profile
- Superior Repeatability (Lot-to-Lot Variation)
- Industry Standard SOIC-16 SMT Plastic Package
- Typical Isolation: 26 dB
- Typical Insertion Loss: 0.7 dB
- Low Cost
- 1 Watt Power Handling
- Lead-Free SOIC-16 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS55-0004

Description

M/A-COM’s MAPDCC0016 is an IC-based monolithic power divider using M/A-COM’s GMIC technology in a low cost SOIC-16 plastic package. This 5-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 MAPDCC0016 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

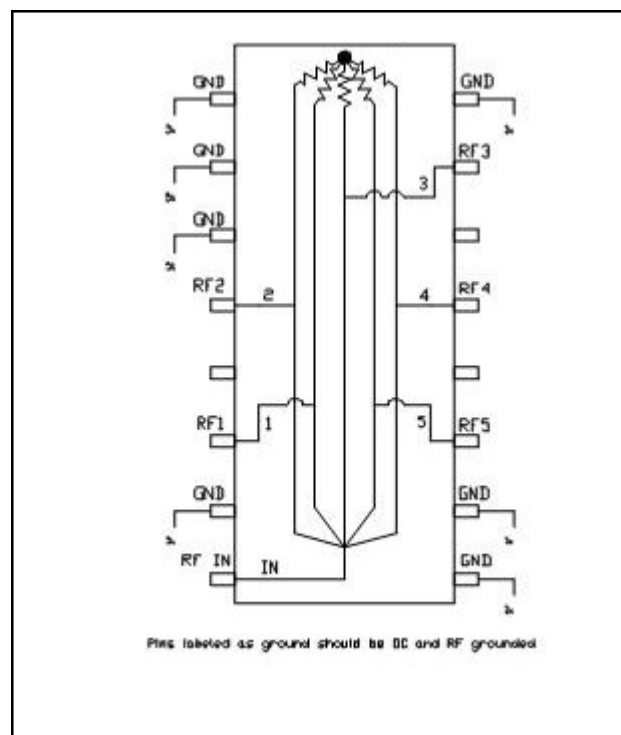
Ordering Information

Part Number	Package
MAPDCC0016	Bulk Packaging
MAPDCC0016-TR	1000 piece reel
MAPDCC0016-TB	Sample Test Board

Note: Reference Application Note M513 for reel size information.

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

Functional Block Diagram



Pin Configuration

Pin No.	Function	Pin No.	Function
1	GND	9	GND
2	GND	10	GND
3	GND	11	RF5
4	RF2	12	GND
5	GND	13	RF4
6	RF1	14	GND
7	GND	15	RF3
8	RF IN	16	GND

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

Parameter	Units	Min	Typ	Max
Insertion Loss Above 7.0dB	dB	—	0.7	1.2
Isolation	dB	21	26	—
VSWR Input	—	—	1.4:1	1.6:1
VSWR Output	—	—	1.2:1	1.5:1
Amplitude Balance	dB	—	0.2	0.6
Phase Balance	°	—	5	10

Absolute Maximum Ratings ^{1,2}

Parameter	Absolute Maximum
Input Power ³	1 W CW
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

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

Handling Procedures

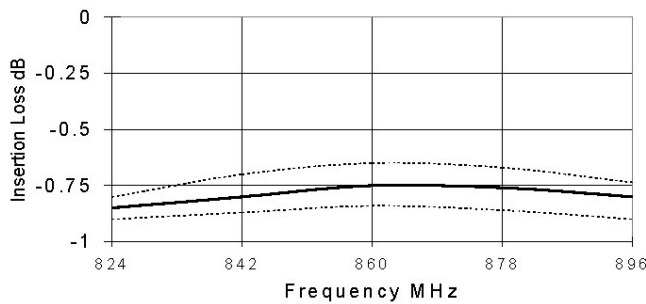
Please observe the following precautions to avoid damage:

Static Sensitivity

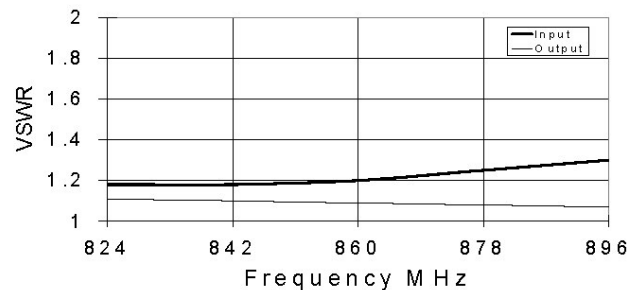
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Typical Performance Curves

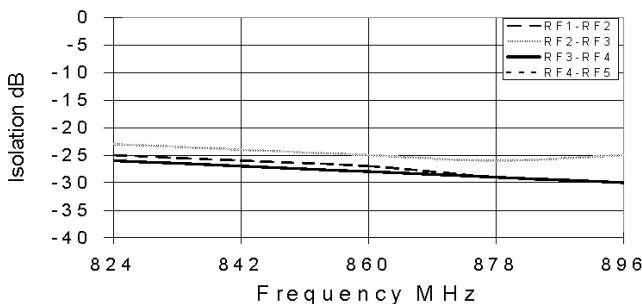
Insertion Loss vs. Frequency
(Dashed lines show amplitude balance window)



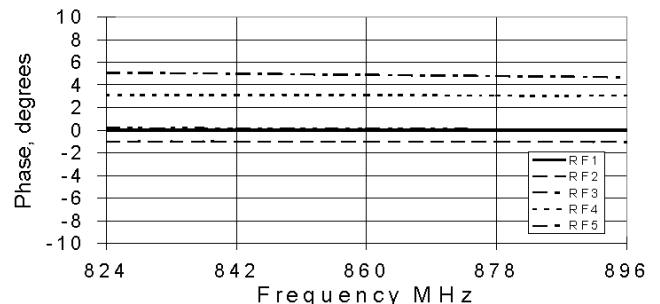
VSWR vs. Frequency



Isolation vs. Frequency



Phase Balance vs. Frequency
(Relative RF1)



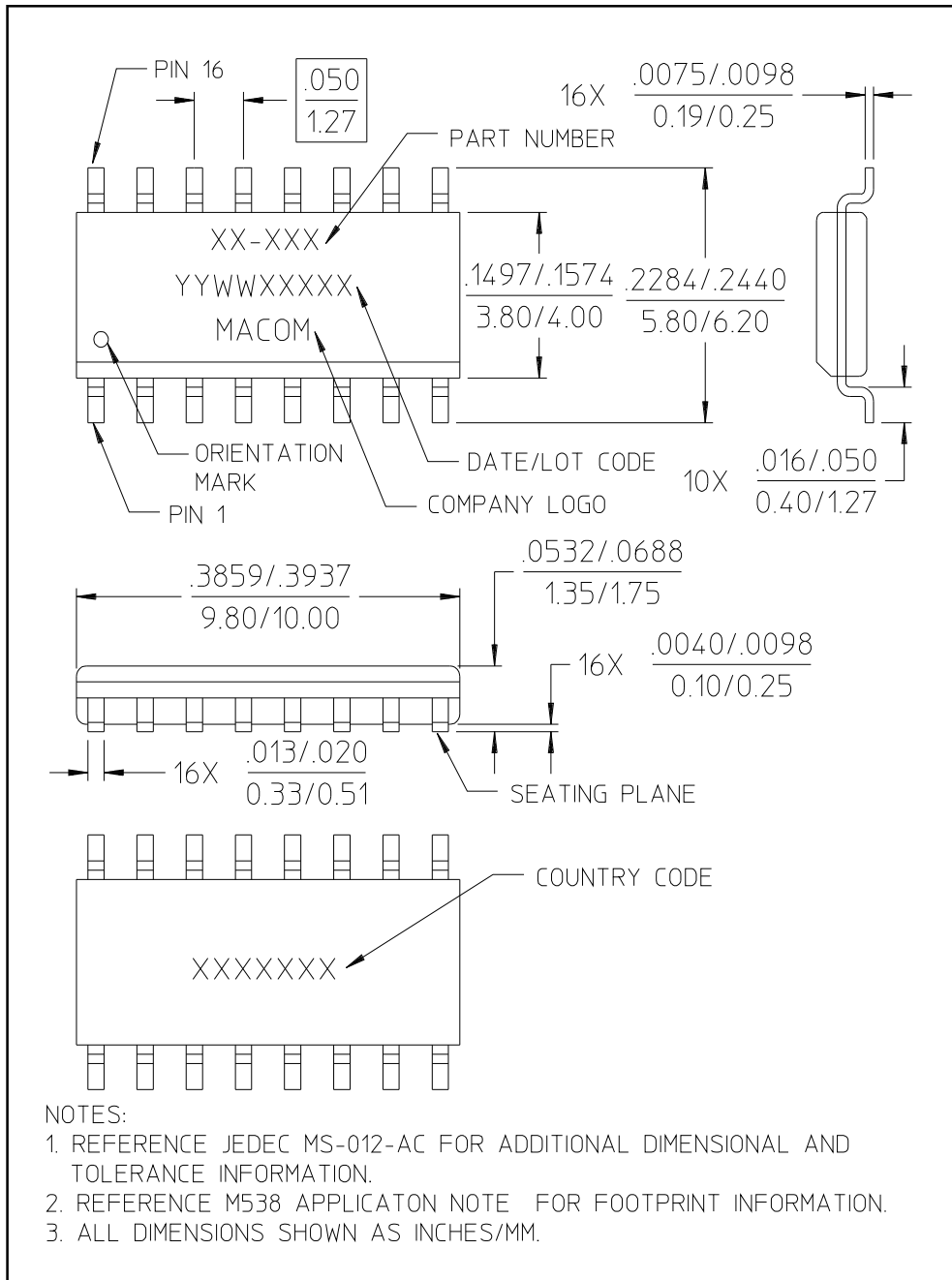
ADVANCED: Data Sheets contain information regarding a product M/A-COM is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM 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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Lead-Free, SOIC-16[†]



NOTES:

1. REFERENCE JEDEC MS-012-AC FOR ADDITIONAL DIMENSIONAL AND TOLERANCE INFORMATION.
2. REFERENCE M538 APPLICATION NOTE FOR FOOTPRINT INFORMATION.
3. ALL DIMENSIONS SHOWN AS INCHES/MM.

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