Low Cost Two-Way SMT Power Divider 1510-1660 MHz



Rev. V4

Features

- Small Size and Low Profile
- Industry Standard SOIC-8 SMT Plastic Package
- Excellent Amplitude and Phase Balance
- Superior Repeatability
- Typical Insertion Loss 0.4 dB
- Typical Isolation 20 dB
- 1 Watt Power Handling
- Frequency Coverage for GPS and LEO Programs
- Lead-Free SOIC-8 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free "Green" Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS52-0004

Description

M/A-COM's MAPDCC0003 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.

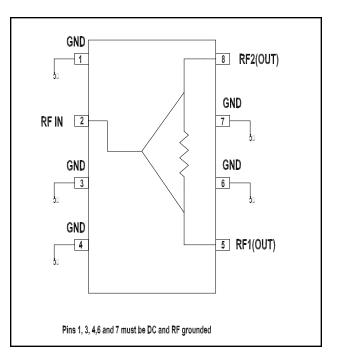
The MAPDCC0003 is fabricated using a passiveintegrated circuit process. The process features full-chip passivation for increased performance and reliability.

Ordering Information

Part Number	Package
MAPDCC0003	Bulk Packaging
MAPDCC0003-TR	1000 Piece Reel
MAPDCC0003-TB	Sample Test Board

Note: Reference Application Note M513 for reel size information.

Functional 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)		

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

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Electrical Specifications¹: $T_A = +25^{\circ}C$

Pa	rameter	Units	Min	Тур	Max
Insertion Loss	Above 3.0dB	dB	_	0.4	0.6
Isolation		dB	15	20	_
VSWR	Input RL	-	_	1.3:1	1.5:1
VSWR	Output RL	-	_	1.4:1	1.6:1
Amplitude Balance		dB	_	0.1	0.2
Phase Balance		Deg		1.0	3.0

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

Absolute Maximum Ratings ^{2,3}

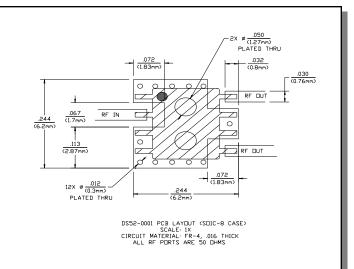
Parameter	Absolute Maximum
Input Power ⁴	1 W CW
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

Exceeding any one or combination of these limits may cause 2. permanent damage to this device.

3 M/A-COM does not recommend sustained operation near these survivability limits.

With Internal load dissipation of 0.125 W maximum. 4

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.

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

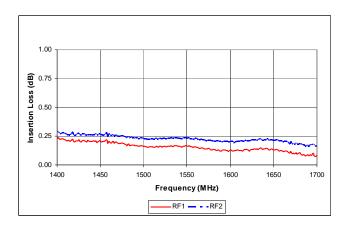


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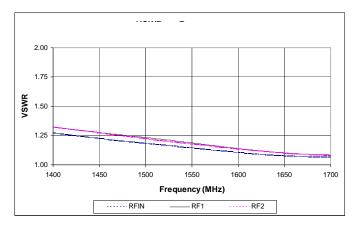
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Typical Performance @ 25°C

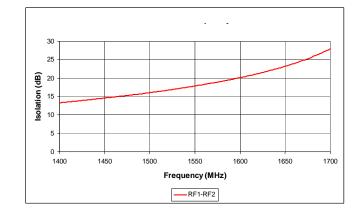
Insertion Loss vs. Frequency



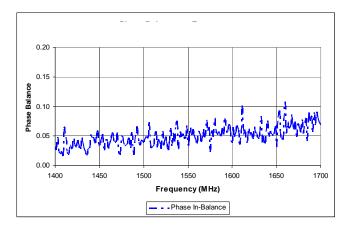
VSWR vs. Frequency



Isolation vs. Frequency



Phase Balance vs. Frequency



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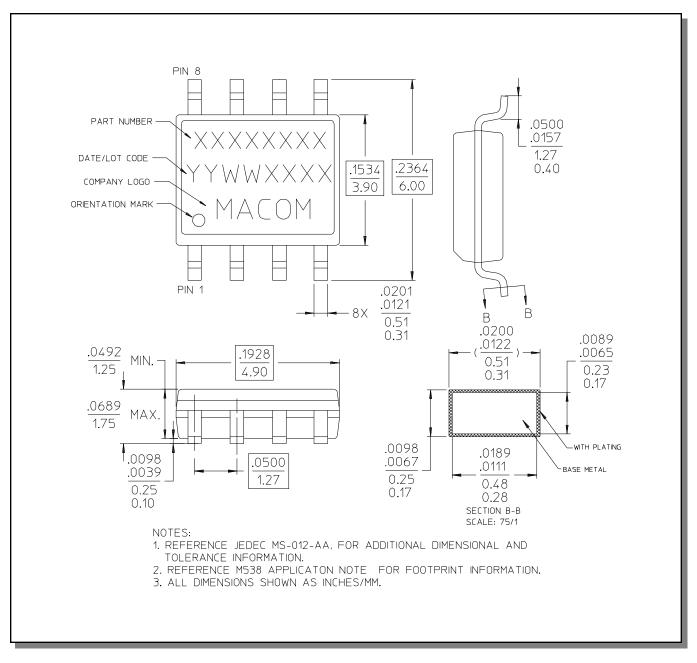
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Lead-Free, SOIC-8[†]



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

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