Low Cost Three Way Power Splitter/Combiner 824 – 960 MHz



Rev. V3

Features

- Small Size and Low Profile
- Excellent Insertion Loss 0.6 dB Typical
- Superior Repeatability
- Low Cost
- CSM, AMPS, CDPD, ARDIS, RAM Frequency Coverage
- Lead-Free SOIC-8 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free "Green" Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS53-0001

Description

M/A-COM's MAPDCC0005 is an IC-based monolithic power divider in a low cost SOIC-8 plastic package. This 3-way power divider is ideally suited for applications where small size, low profile, and low cost without sacrificing Performance, are required. Typical applications include Base Stations, portables and PCMCIA cards for cellular applications. Available in Tape and Reel.

The MAPDCC0005 is fabricated using a passiveintegrated circuit process. The process features fullchip passivation for increased performance and reliability.

Ordering Information

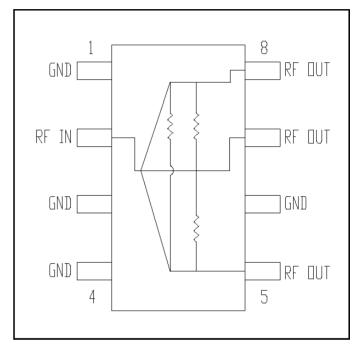
Part Number	Package	
MAPDCC0005	Bulk Packaging	
MAPDCC0005TR	1000 piece reel	
MAPDCC0005-TB	Sample Test Board	

Note: Reference Application Note M513 for reel size information.

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

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Functional Block Diagram¹



1. All unused pins must be RF and DC grounded.

Pin Configuration

Pin No.	Function	Pin No.	Function
1	GND	5	RF OUT
2	RF IN	6	GND
3	GND	7	RF OUT
4	GND	8	RF OUT

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

Parameter	Units	Min	Тур	Max
Insertion Loss above 4.78 dB	dB	—	0.6	0.7
Isolation	dB	15	18	—
VSWR	—	—	1.4:1	1.6:1
Amplitude Balance	dB	_	0.6	0.8
Phase Balance	Deg	—	2	4

Absolute Maximum Ratings ^{2,3}

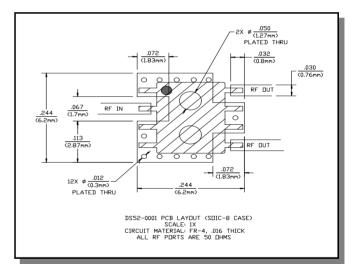
Parameter	Absolute Maximum	
Input Power ⁴	1W CW	
Operating Temperature	-40°C to +85°C	
Storage Temperature	-65°C to +150°C	

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 0.125 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.

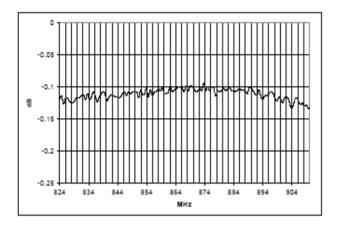
2

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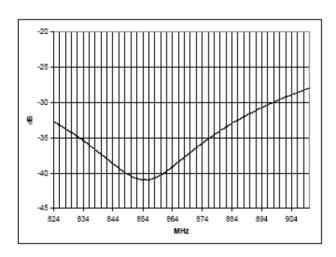
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Typical Performance Curves

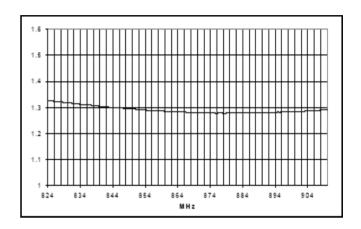
Insertion Loss vs. Frequency



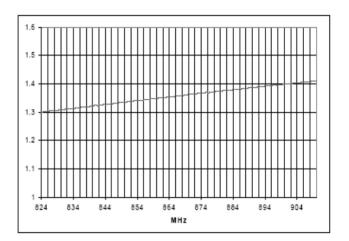
Isolation vs. Frequency



VSWR Input vs. Frequency



VSWR Output vs. Frequency



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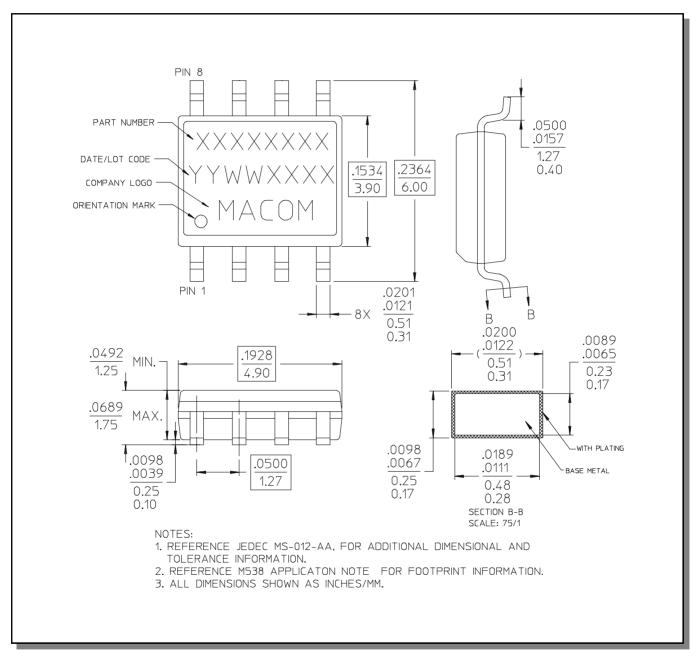
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Lead-Free, SOIC-8[†]



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

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