MAPDCC0007

Low Cost Four-way SMT Power Splitter/Combiner, 824 - 960 MHz

Rev. V2

Features

- Low Cost
- Small Size and Low Profile
- Industry Standard SOW-16 SMT Plastic Package
- Excellent Repeatability (Lot-to-Lot Variation)
- Typical Isolation: 23 dB
- Typical Amplitude Balance: 0.3 dB
- Typical Insertion Loss: 1.0 dB
- Lead-Free SOW-16 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free "Green" Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS54-0001

Description

M/A-COM's MAPDCC0007 is an IC-based monolithic power splitter/combiner in a low cost SOW-16 plastic package. This device is ideally suited for applications where PCB real estate is at a premium and standard packaging for automated assembly and low cost are critical. Typical applications include infrastructure, portables and peripheral devices (PCMCIA cards) for wireless standards such as GSM, AMPS, CDPD, RAM and ARDIS. Available in tape and reel.

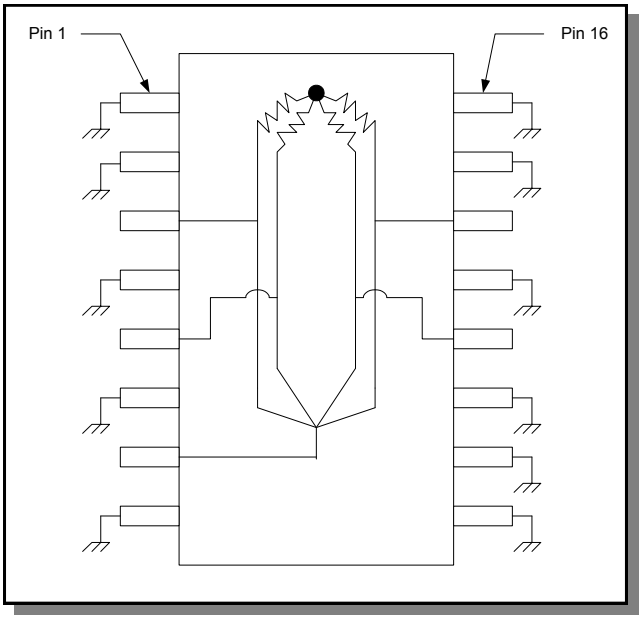
The MAPDCC0007 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

Ordering Information

Part Number	Package
MAPDCC0007	Bulk Packaging
MAPDCC0007-TR	1000 piece reel
MAPDCC0007-TB	Sample Test Board

Note: Reference Application Note M513 for reel size information.

Functional Diagram



Pin Configuration[1]

Pin No.	Function	Pin No.	Function
1	GND	9	GND
2	GND	10	GND
3	RF2 (Out)	11	GND
4	GND	12	RF4 (Out)
5	RF1 (Out)	13	GND
6	GND	14	RF3 (Out)
7	RFIN	15	GND
8	GND	16	GND

1. Pins 1,2,4,6,8,9,10,11,13,15 and 16 must be RF and DC grounded.

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

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Electrical Specifications: T_A = 25°C[2]

Parameter	Frequency	Units	Min	Typ	Max
Insertion Loss "above 6.0 dB theoretical loss"	824 - 960 MHz	dB	—	1.0	1.2
Isolation	824 - 960 MHz	dB	18	23	—
Input VSWR	824 - 960 MHz	Ratio	—	1.2:1	1.4:1
Output VSWR	824 - 960 MHz	Ratio	—	1.4:1	1.75:1
Amplitude Balance	824 - 960 MHz	dB	—	0.3	0.7
Phase Balance	824 - 960 MHz	Deg	—	2	4

2. All specifications apply with a 50-ohm source and load impedance.

Absolute Maximum Ratings [3,4]

Parameter	Absolute Maximum
Input Power [5]	1W CW
Operating Temperature	-40°C to +85°C
Storage Temperature	-65°C to +150°C

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

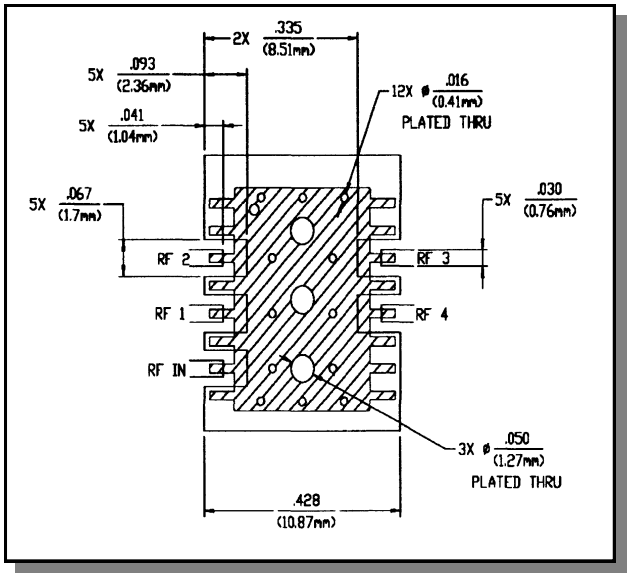
Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

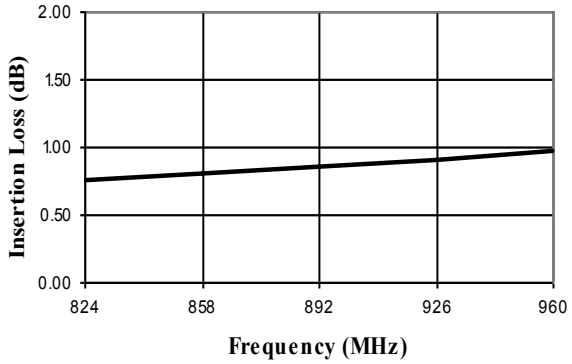
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Recommended PCB Configuration

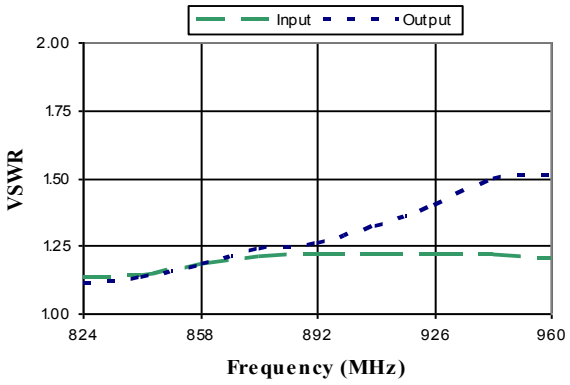


Typical Performance Curves

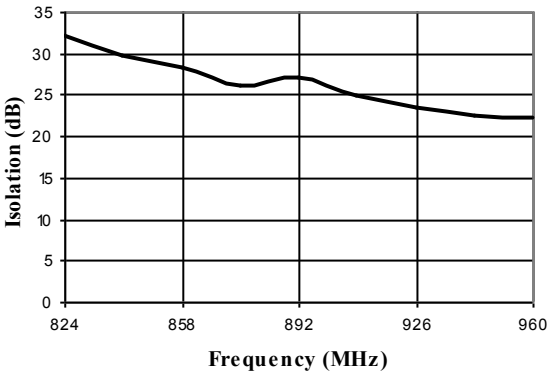
Insertion Loss vs. Frequency (above theoretical split loss)



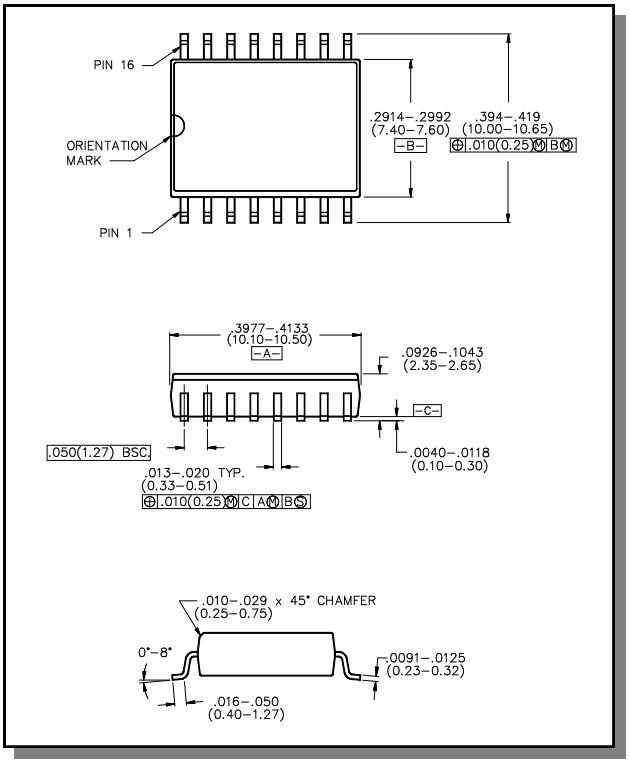
VSWR vs. Frequency



Isolation vs. Frequency



Lead-Free, SOW-16†



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