MAPDCC0020

Tyco Electronics

Low Cost Six-Way SMT Power Divider 1700 – 2000 MHz

M/A-COM Products
Rev. 2

Features

- Small Size, Low Profile
- Superior Repeatability (Lot-to-Lot Variation)
- Typical Isolation 25 dB
- Typical Insertion Loss 1.0 dB
- Low Cost
- Lead-Free SOIC-16 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free "Green" Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS56-0006

Description

M/A-COM's MAPDCC0020 is an IC-based monolithic power splitter/combiner in a low cost SOIC-16 plastic package. This 6-way power divider 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 base stations, portables, and peripheral devices (PCMCIA cards) for wireless standards such as PCS, PCN, DECT, PHS, and DCS-1800. Available in Tape and Reel.

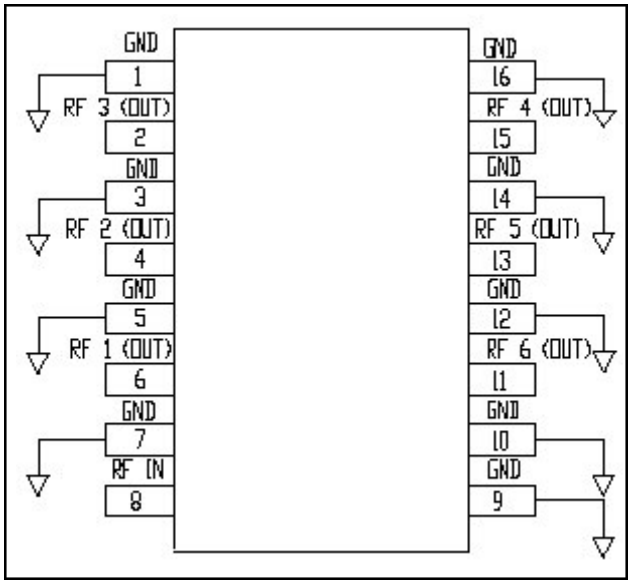
The MAPDCC0020 is fabricated using passive-integrated circuit process. This process features full-chip passivation for increased performance and reliability.

Ordering Information

Part Number	Package
MAPDCC0020	Bulk Packaging
MAPDCC0020-TR	1000 piece reel
MAPDCC0020-TB	Sample Test Board

Note: Reference Application Note M513 for reel size information.

Functional Block Diagram[1]



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

Pin Configuration

Pin No.	Function	Pin No.	Function
1	GND	9	GND
2	RF 3 (OUT)	10	GND
3	GND	11	RF 6 (OUT)
4	RF 2 (OUT)	12	GND
5	GND	13	RF 5 (OUT)
6	RF 1 (OUT)	14	GND
7	GND	15	RF 4 (OUT)
8	RF IN	16	GND

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

• **North America** Tel: 800.366.2266 / Fax: 978.366.2266
• **Europe** Tel: 44.1908.574.200 / Fax: 44.1908.574.300
• **Asia/Pacific** Tel: 81.44.844.8296 / Fax: 81.44.844.8298
Visit www.macom.com for additional data sheets and product information.

Electrical Specifications: T_A = 25°C, Z_0 = 50Ω

Parameter	Units	Min	Typ	Max
Insertion Loss above 7.8 dB				
1700 – 2000 MHz	dB	—	1.3	1.8
1850 – 1910 MHz	dB	—	1.0	1.5
Isolation				
1700 – 2000 MHz	dB	18	25	—
1850 – 1910 MHz	dB	21	26	—
VSWR Input				
1700 – 2000 MHz	—	—	1.7:1	2.0:1
1850 – 1910 MHz	—	—	1.3:1	1.7:1
Output				
1700 – 2000 MHz	—	—	1.3:1	1.7:1
1850 – 1910 MHz	—	—	1.1:1	1.3:1
Amplitude Balance				
1700 – 2000 MHz	dB	—	0.8	1.3
1850 – 1910 MHz	dB	—	1.0	1.3
Phase Balance				
1700 – 2000 MHz	Deg.	—	10	20
1850 – 1910 MHz	Deg.	—	8	16

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.

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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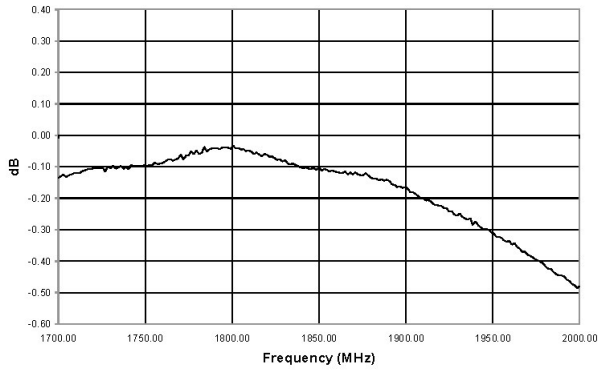
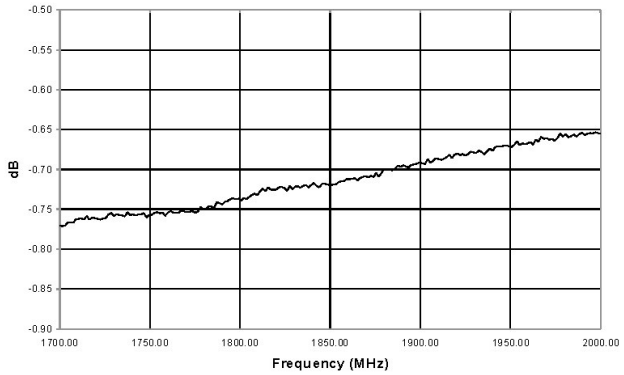
Typical Performance Curves

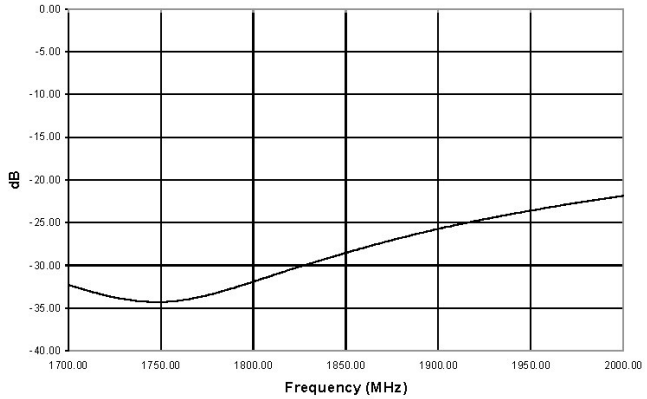
Insertion Loss vs. Frequency



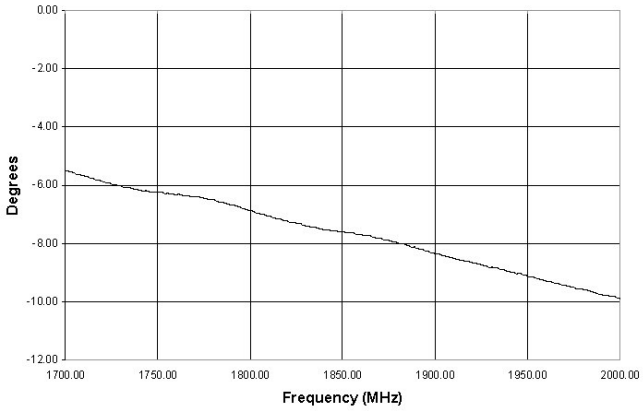
Amplitude Imbalance vs. Frequency



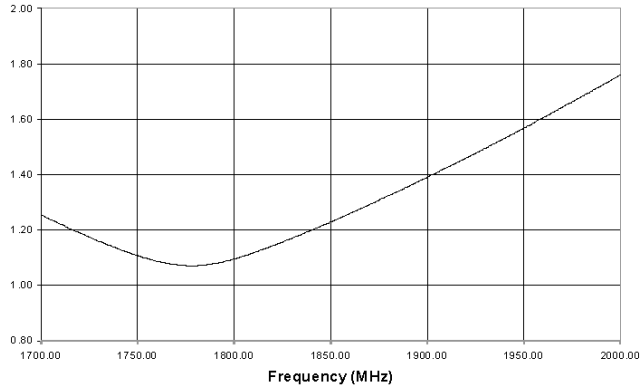
Isolation vs. Frequency



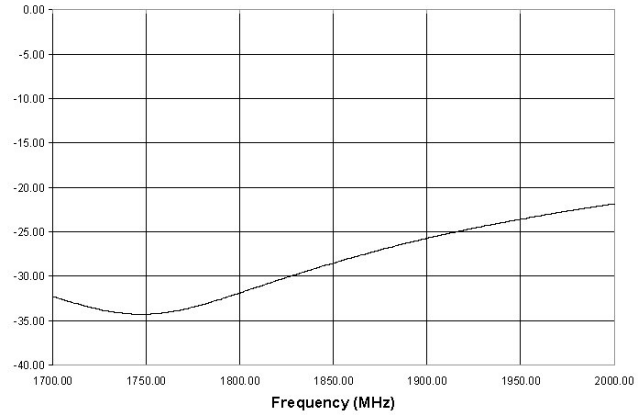
Phase Imbalance vs. Frequency



Input VSWR vs. Frequency



Output VSWR vs. Frequency



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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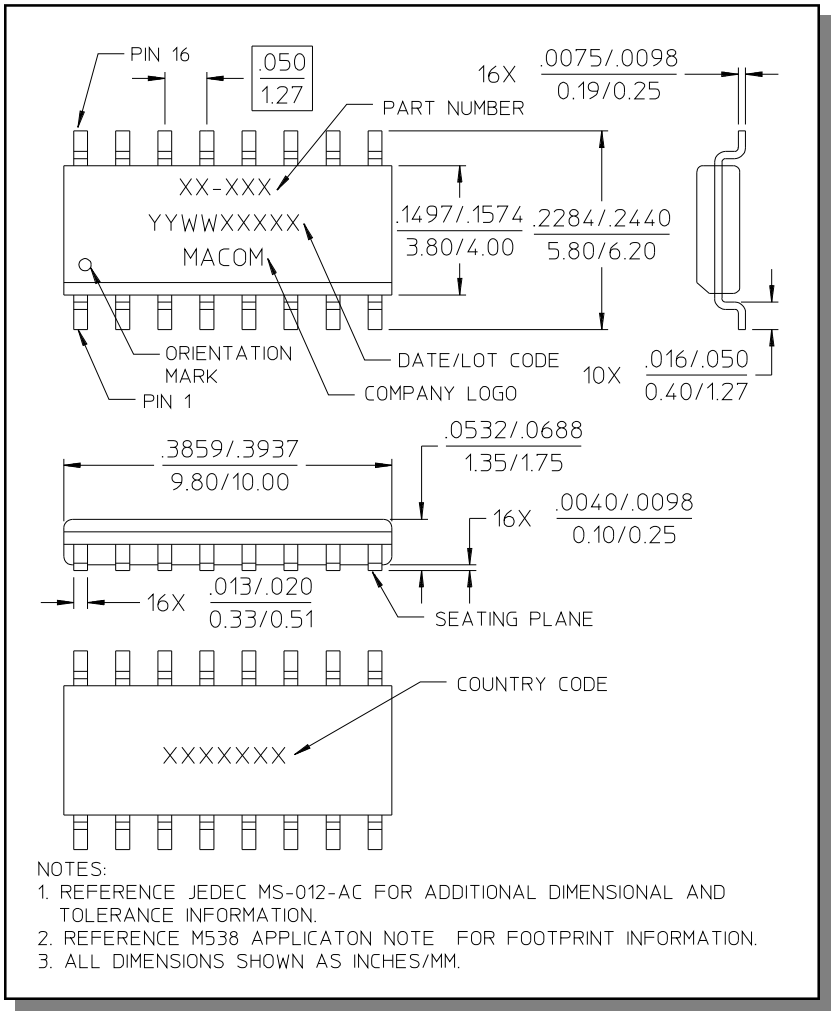
Lead-Free, SOIC-16†



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

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