MAPDCC0020

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

Rev. V2

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.

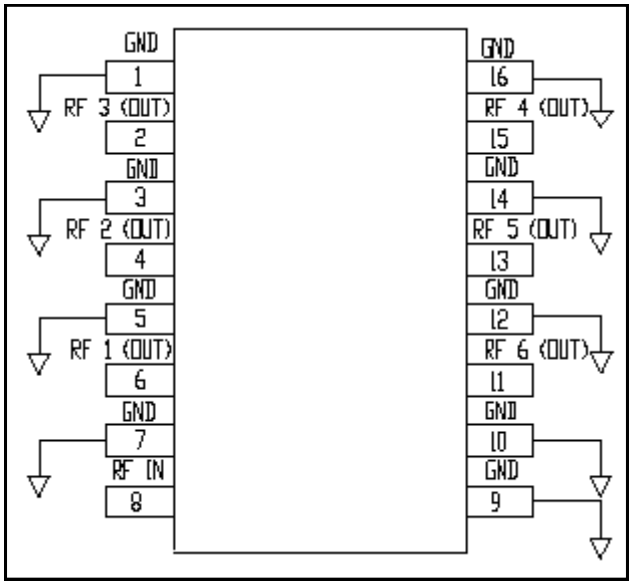
The MAPDCC0020 is fabricated using passive-integrated circuit process. This process features full-chip passivation for increased performance and reliability.

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.

M/A-COM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

For further information and support please visit:
https://www.macom.com/support

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

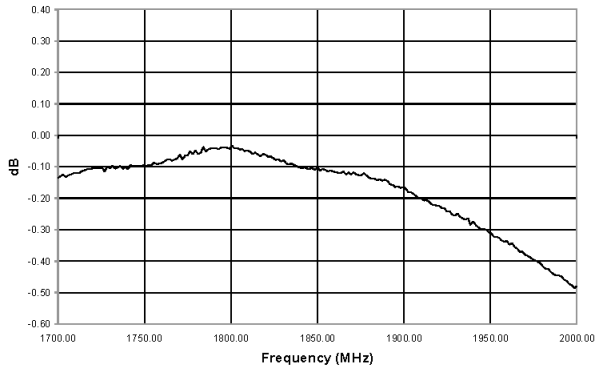
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

M/A-COM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

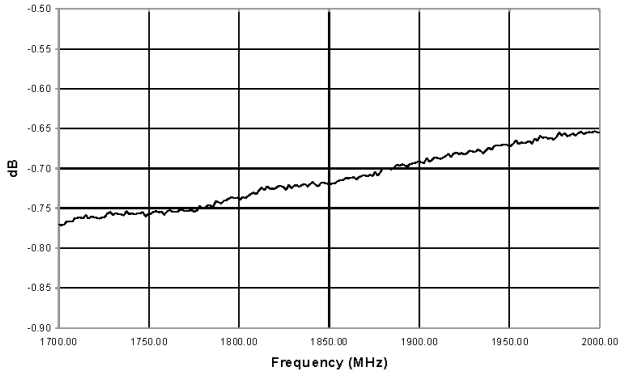
For further information and support please visit:
https://www.macom.com/support

Typical Performance Curves

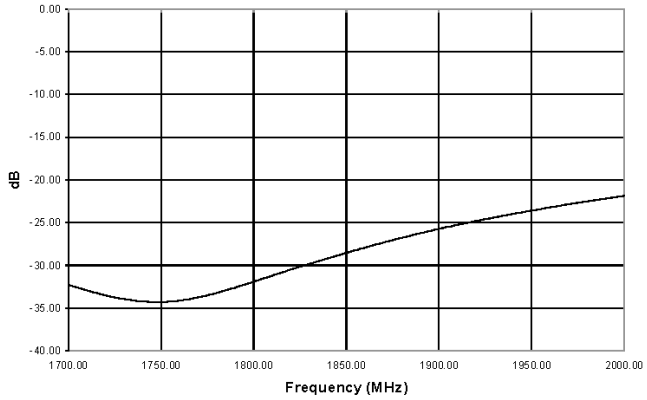
Insertion Loss vs. Frequency



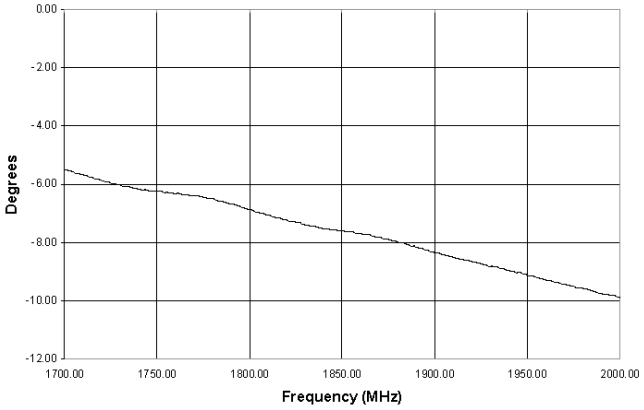
Amplitude Imbalance vs. Frequency



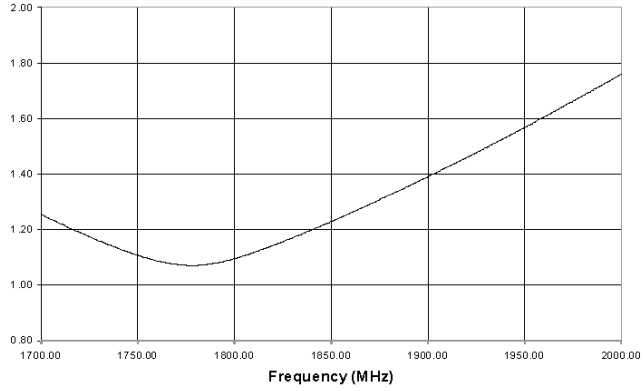
Isolation vs. Frequency



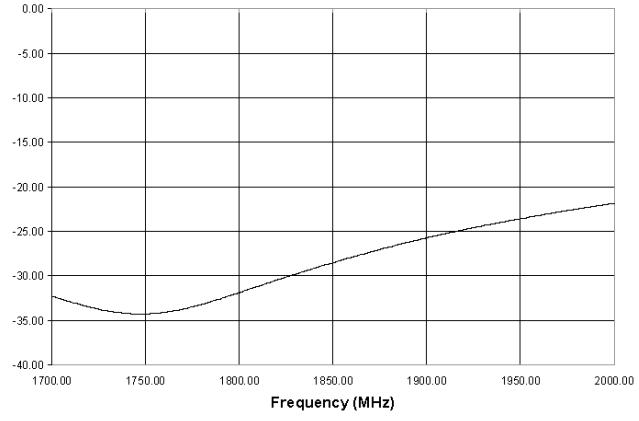
Phase Imbalance vs. Frequency



Input VSWR vs. Frequency



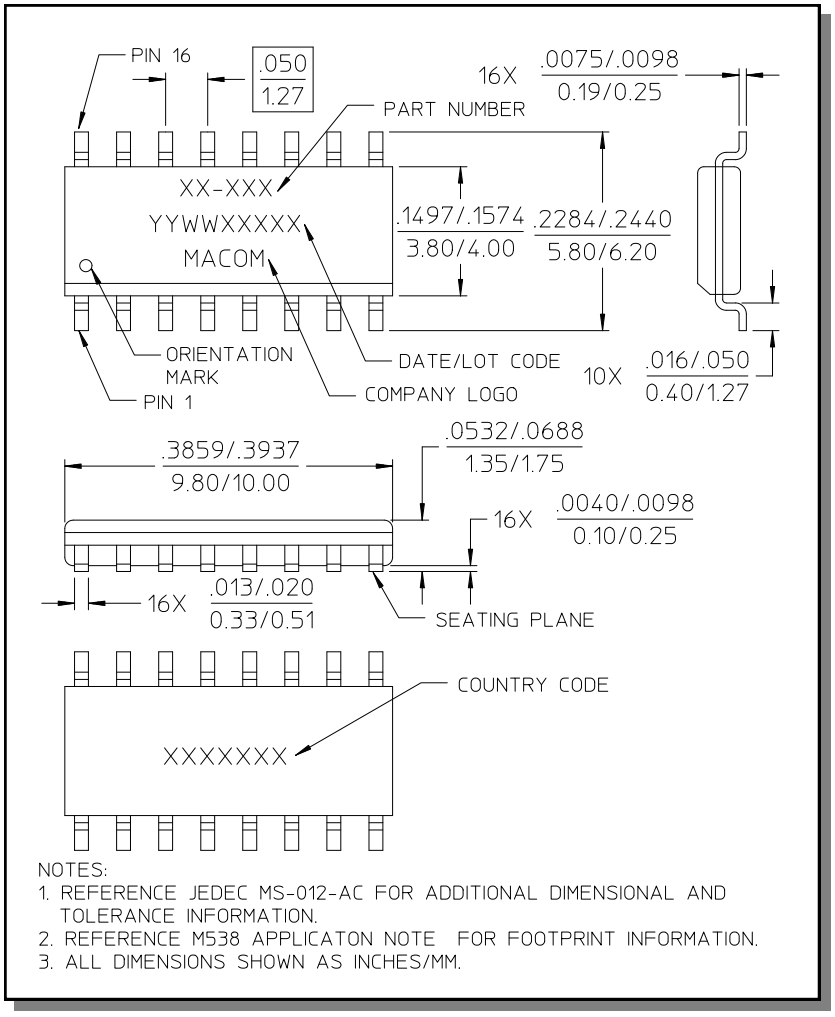
Output VSWR vs. Frequency



M/A-COM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

For further information and support please visit:
https://www.macom.com/support

Lead-Free, SOIC-16†



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

M/A-COM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

For further information and support please visit:
https://www.macom.com/support

M/A-COM Technology Solutions Inc. All rights reserved.
Information in this document is provided in connection with M/A-COM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppels or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.