

Features

- Small Size and Low Profile
- Industry Standard SOIC-8 SMT Plastic Package
- Superior Repeatability
- Excellent Amplitude Balance: 0.05 dB Typical
- Excellent Insertion Loss: 0.3 dB Typical
- Low Cost
- DCS-1800 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 DS52-0005

Description

M/A-COM's MAPDCC0004 is an IC-based monolithic power divider in a low cost SOIC-8 plastic package. This 2-way power splitter is ideally suited for applications where small size, low profile and low cost, without sacrificing performance are required. Typical applications include base station, portables and PCMCIA cards for DCS-1800 European applications. Available in tape and reel.

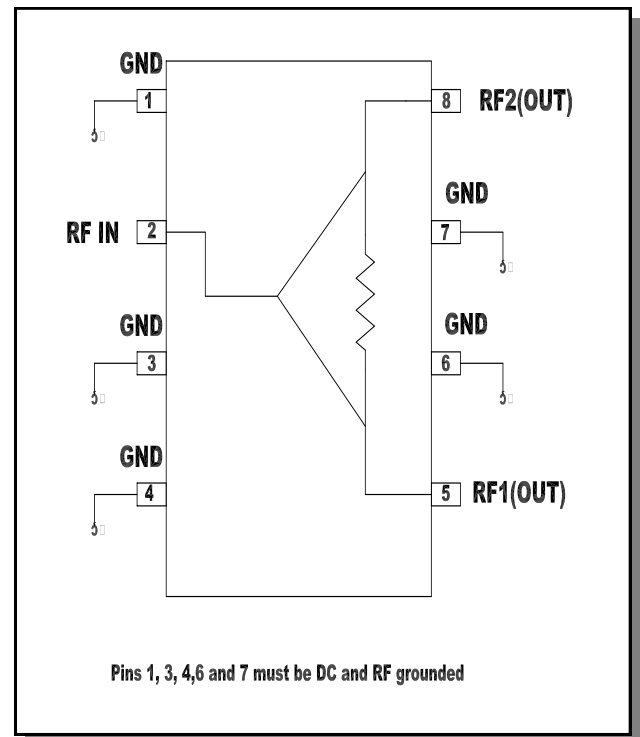
The MAPDCC0004 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

Ordering Information

| Part Number | Package |
|---------------|-------------------|
| MAPDCC0004 | Bulk Packaging |
| MAPDCC0004TR | 1000 piece reel |
| MAPDCC0004-TB | Sample Test Board |

Note: Reference Application Note M513 for reel size information.

Functional Block 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) |

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

Electrical Specifications¹: T_A = 25°C

| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
|-------------------|-----------------|-------------|-------|-----|-------|-------|
| Insertion Loss | Above 3.0 dB | 1700 - 1900 | dB | — | 0.3 | 0.5 |
| Isolation | — | 1700 - 1900 | dB | 15 | 20 | — |
| VSWR | — | 1700 - 1900 | Ratio | — | 1.3:1 | 1.5:1 |
| Amplitude Balance | — | 1700 - 1900 | dB | — | 0.1 | 0.15 |
| Phase Balance | — | 1700 - 1900 | Deg | — | 2 | 4 |

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

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.
3. M/A-COM does not recommend sustained operation near these survivability limits.
4. With internal load dissipation of 0.125W maximum

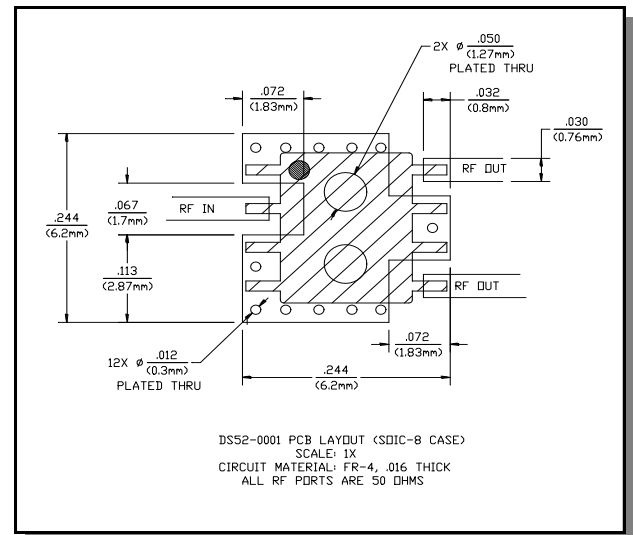
Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

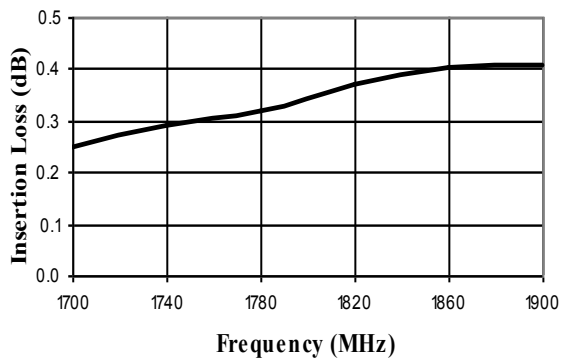
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Recommended PCB Configuration

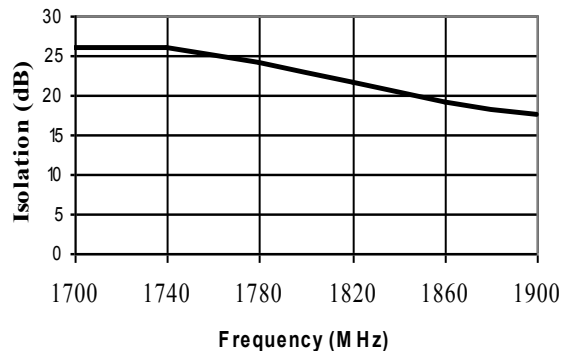


Typical Performance Curves

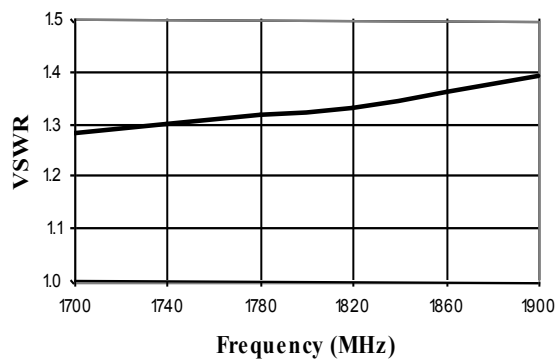
Insertion Loss vs. Frequency
(above theoretical split loss)



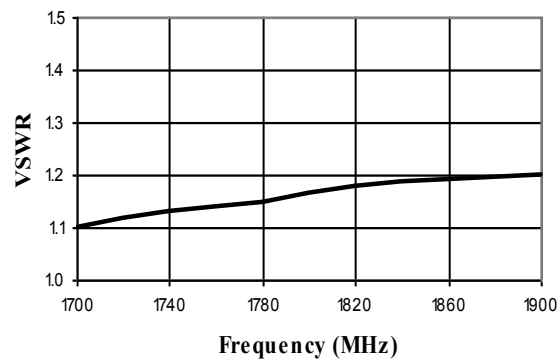
Isolation vs. Frequency



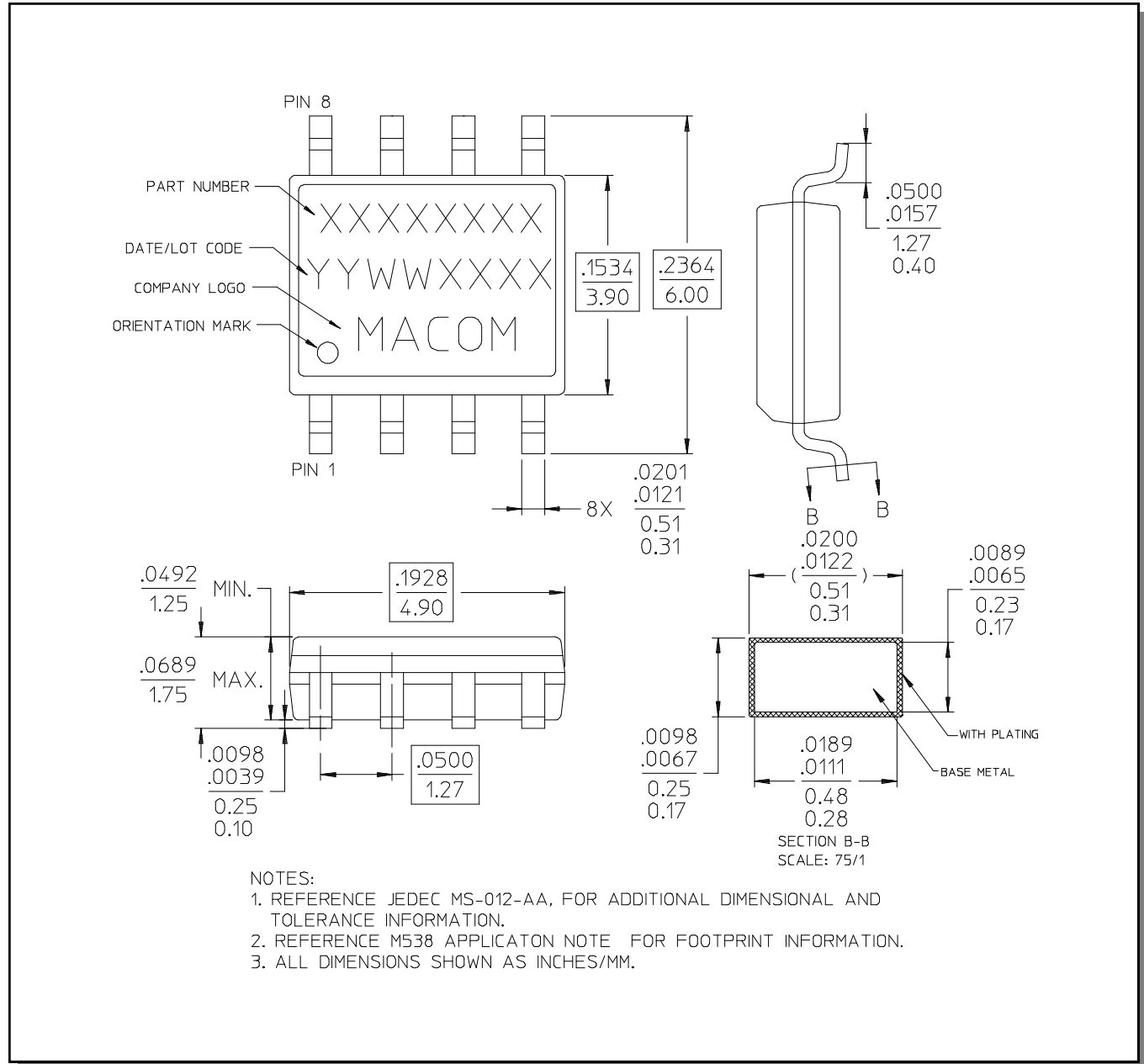
Input VSWR vs. Frequency



Output VSWR vs. Frequency



Lead-Free, SOIC-8[†]



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

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 estoppel 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.