

Low Cost Two-Way SMT Power Divider, 1700 - 1900 MHz

**MAPDCC0004
V2**

Features

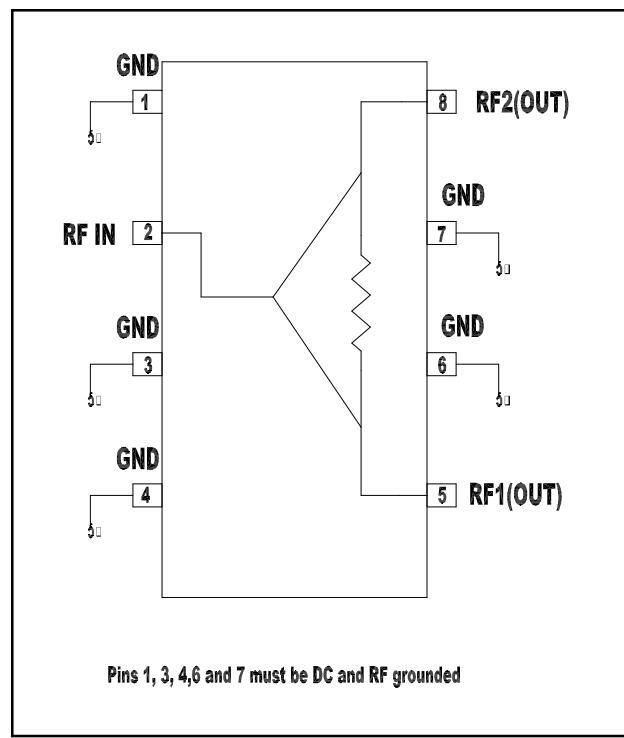
- Small Size and Low Profile
- Industry Standard SOIC-8 SMT Plastic Package
- Superior Repeatability
- Excellent Amplitude Balance: 0.05 dB Typical
- Excellent Insertion Loss: 0.3 dB Typical
- Low Cost
- DCS-1800 Frequency Coverage
- Lead-Free SOIC-8 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free "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.

Functional Block Diagram



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.

Note: Die quantity varies.

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) |

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

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Electrical Specifications¹: T_A = 25°C

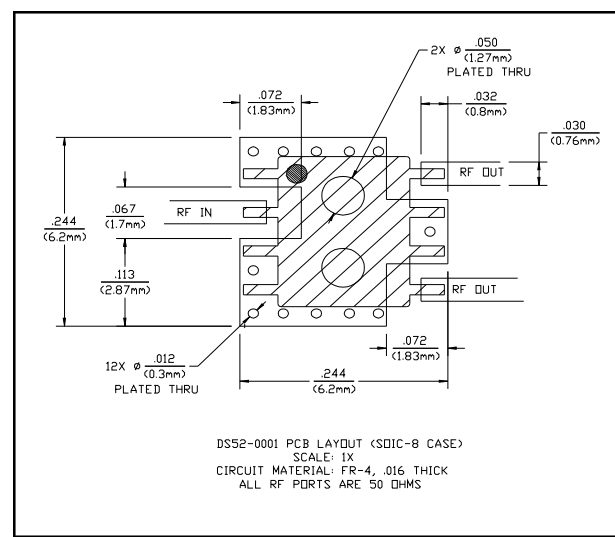
| Parameter | Test Conditions | Frequency | Units | Min | Typ | Max |
|-------------------|-----------------|-------------|-------|-----|-------|-------|
| Insertion Loss | Above 3.0 dB | 1700 - 1900 | dB | — | 0.3 | 0.5 |
| Isolation | — | 1700 - 1900 | dB | 15 | 20 | — |
| VSWR | — | 1700 - 1900 |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

- 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 |

- 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.
- With internal load dissipation of 0.125W maximum

Recommended PCB Configuration

Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

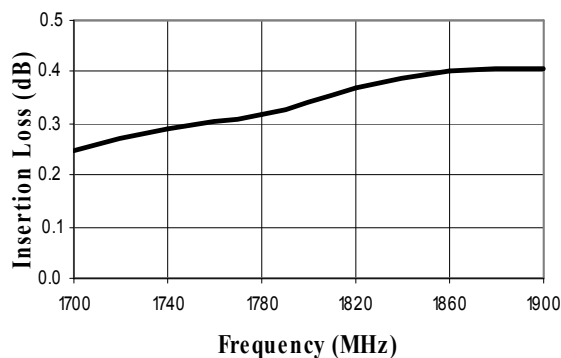
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

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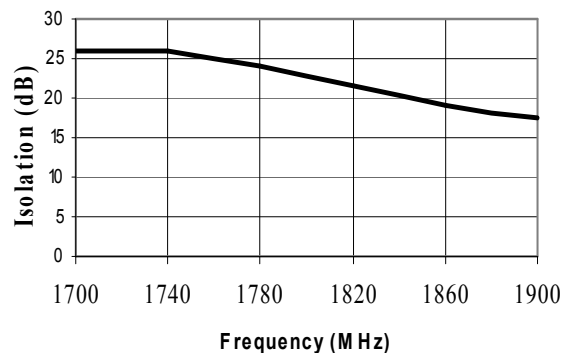
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Typical Performance Curves

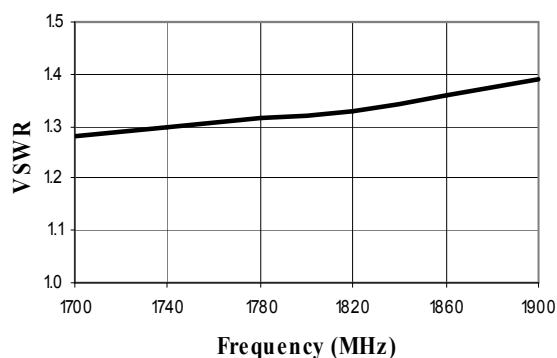
Insertion Loss vs. Frequency
(above theoretical split loss)



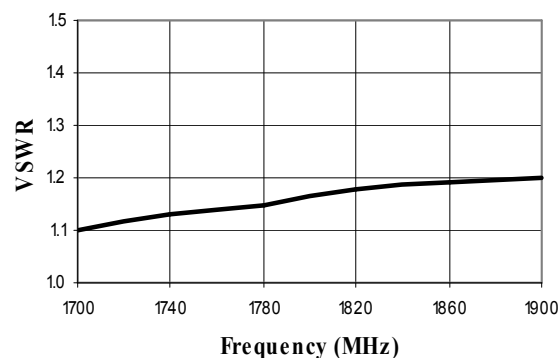
Isolation vs. Frequency



Input VSWR vs. Frequency



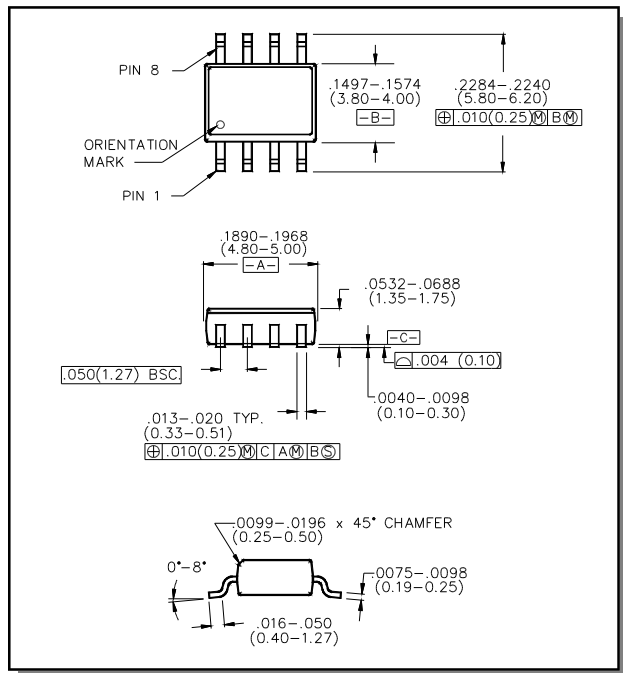
Output VSWR vs. Frequency



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Lead-Free, SOIC-8[†]



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