



**THE DATASHEET OF
MAPDCC0006TR**



Features

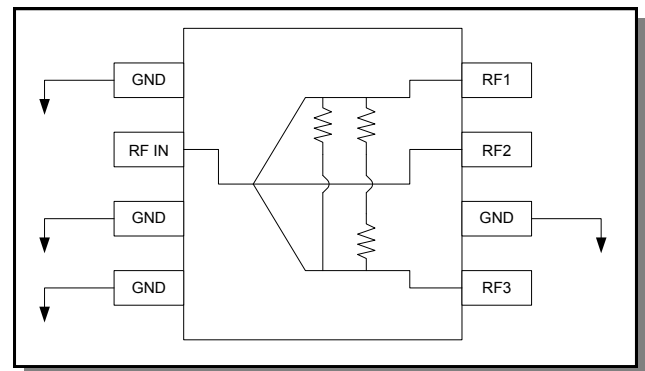
- Small Size and Low Profile
- Industry Standard SOIC-8 SMT Plastic Package
- Excellent Amplitude and Phase Balance
- Superior Repeatability
- Typical Insertion Loss: 1.0 dB
- Typical Isolation: 18 dB
- 1 Watt Power Handling
- Lead-Free SOIC-8 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS53-0005

Description

M/A-COM’s MAPDCC0006 is an IC-based monolithic power divider using M/A-COM’s GMIC technology in a low cost SOIC-8 plastic package. This 3-way power divider is ideally suited for applications where small size, low insertion loss, superior phase/amplitude tracking and low cost are required. Typical applications include personal communication systems and other communication applications where size and PCB real estate are at a premium. Available in tape and reel.

The MAPDCC0006 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

Functional Diagram



Pin Configuration

| Pin No. | Function | Pin No. | Function |
|---------|----------|---------|----------|
| 1 | GND | 5 | RF3 |
| 2 | RF IN | 6 | GND |
| 3 | GND | 7 | RF2 |
| 4 | GND | 8 | RF1 |

Ordering Information

| Part Number | Package |
|---------------|-------------------|
| MAPDCC0006 | Bulk Packaging |
| MAPDCC0006TR | 1000 piece reel |
| MAPDCC0006-TB | Sample Test Board |

Note: Reference Application Note M513 for reel size information.

Electrical Specifications: $T_A = 25^\circ\text{C}^1$

| Parameter | Units | Min | Typ | Max |
|-----------------------------|-------|-----|-------|-------|
| Insertion Loss above 4.8 dB | dB | — | 1.0 | 1.4 |
| Isolation | dB | 12 | 18 | — |
| VSWR Input | Ratio | — | 1.8:1 | 2.0:1 |
| Amplitude Balance | dB | — | 0.3 | 0.6 |
| Phase Balance | Deg. | — | 7 | 14 |

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

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

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.

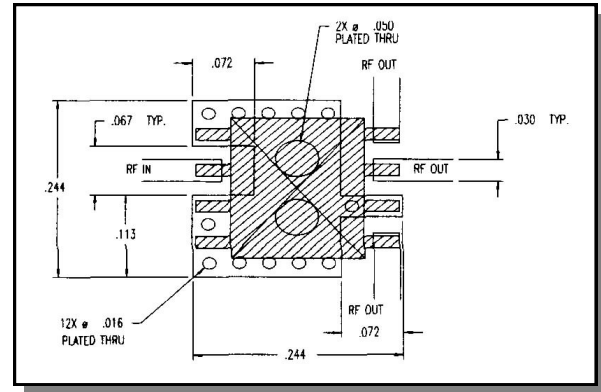
Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

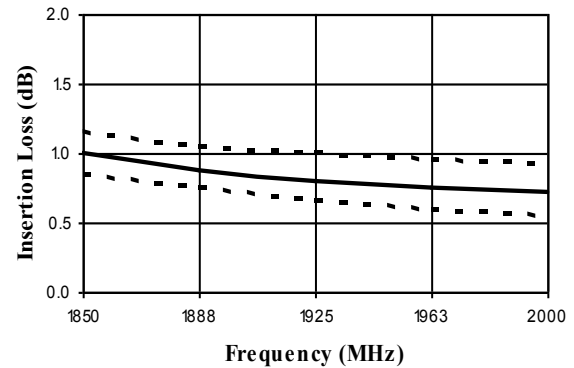
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

Recommended PIN Configuration

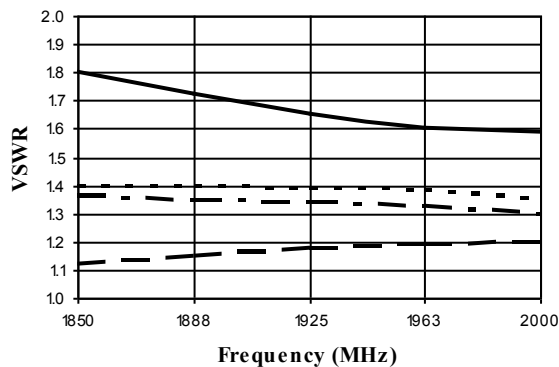


Typical Performance Curves

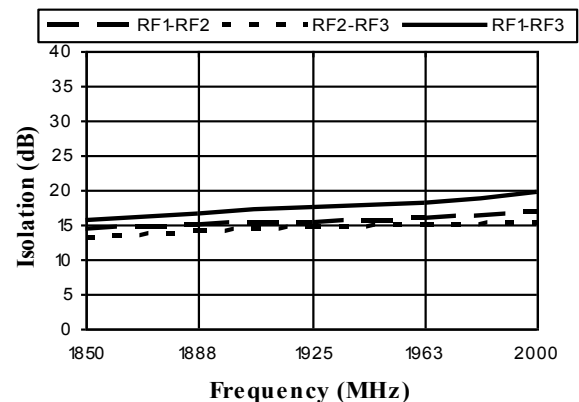
Insertion Loss
(Dashed lines show amplitude balance window)



VSWR

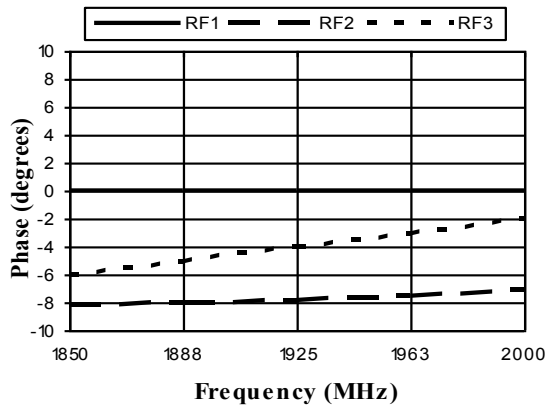


Isolation

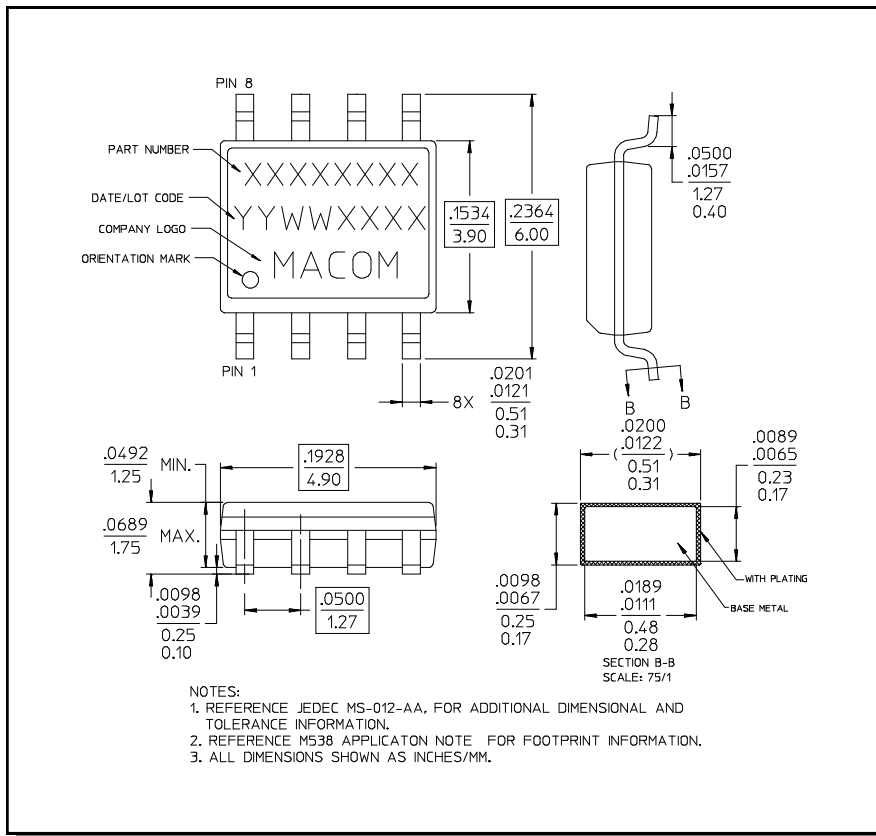


Typical Performance Curves

Phase Balance (Relative to RF1)



Lead-Free, SOIC-8[†]



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

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