MAPDCC0005

Tyco Electronics

Low Cost Three Way Power Splitter/Combiner 824 – 960 MHz
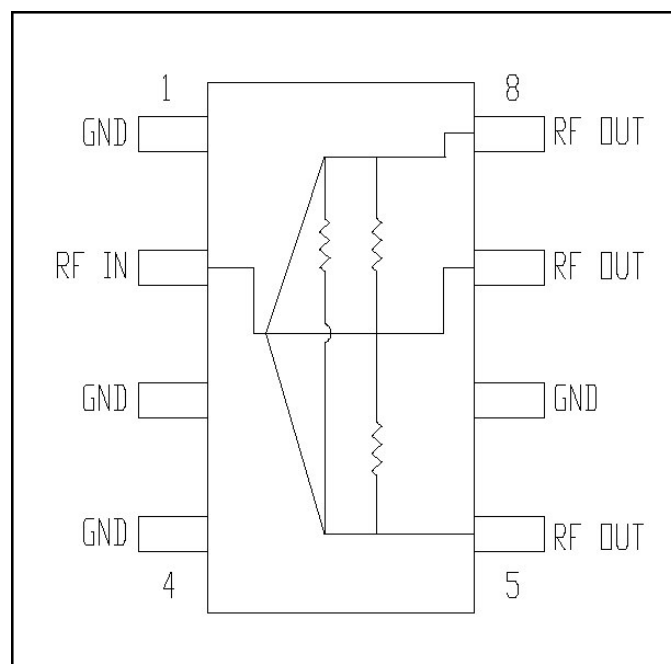
M/A-COM Products
Rev. 3

Features

- Small Size and Low Profile
- Excellent Insertion Loss 0.6 dB Typical
- Superior Repeatability
- Low Cost
- CSM, AMPS, CDPD, ARDIS, RAM 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 DS53-0001

Functional Block Diagram[1]

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

Description

M/A-COM's MAPDCC0005 is an IC-based monolithic power divider in a low cost SOIC-8 plastic package. This 3-way power divider is ideally suited for applications where small size, low profile, and low cost without sacrificing Performance, are required. Typical applications include Base Stations, portables and PCMCIA cards for cellular applications. Available in Tape and Reel.

The MAPDCC0005 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

Pin Configuration

Pin No.	Function	Pin No.	Function
1	GND	5	RF OUT
2	RF IN	6	GND
3	GND	7	RF OUT
4	GND	8	RF OUT

Ordering Information

Part Number	Package
MAPDCC0005	Bulk Packaging
MAPDCC0005TR	1000 piece reel
MAPDCC0005-TB	Sample Test Board

Note: Reference Application Note M513 for reel size information.

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

MAPDCC0005

Tyco Electronics

| Low Cost Three Way Power Splitter/Combiner 824 – 960 MHz | M/A-COM Products Rev. 3 |

Electrical Specifications: $T_A = 25°C$, $Z_0 = 50\Omega$

Parameter	Units	Min	Typ	Max
Insertion Loss above 4.78 dB	dB	—	0.6	0.7
Isolation	dB	15	18	—
VSWR	—	—	1.4:1	1.6:1
Amplitude Balance	dB	—	0.6	0.8
Phase Balance	Deg	—	2	4

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.
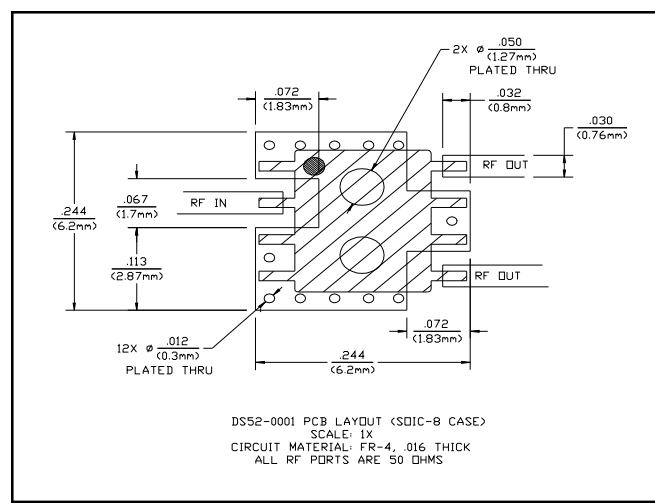4. With internal load dissipation of 0.125 W Maximum.

Handling Procedures

Please observe the following precautions to avoid damage:
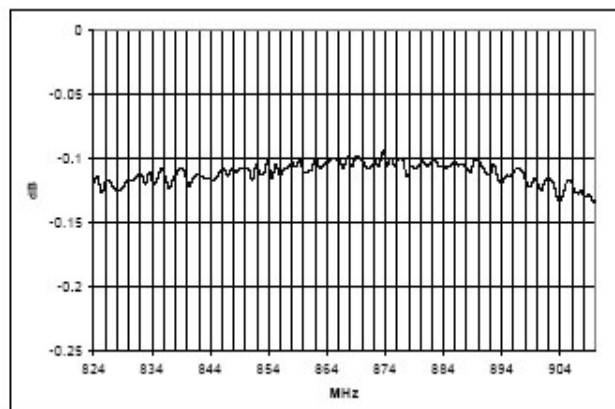
Static Sensitivity

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.

Recommended PCB Configuration

DS52-0001 PCB LAYOUT (SOIC-8 CASE)
SCALE: 1X
CIRCUIT MATERIAL: FR-4, .016 THICK
ALL RF PORTS ARE 50 OHMS

MAPDCC0005

Tyco Electronics

Low Cost Three Way Power Splitter/Combiner
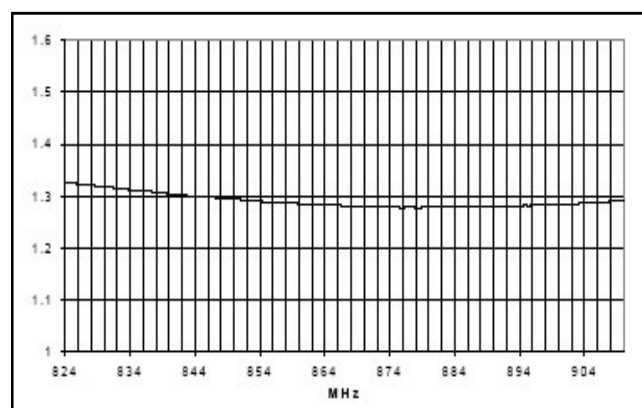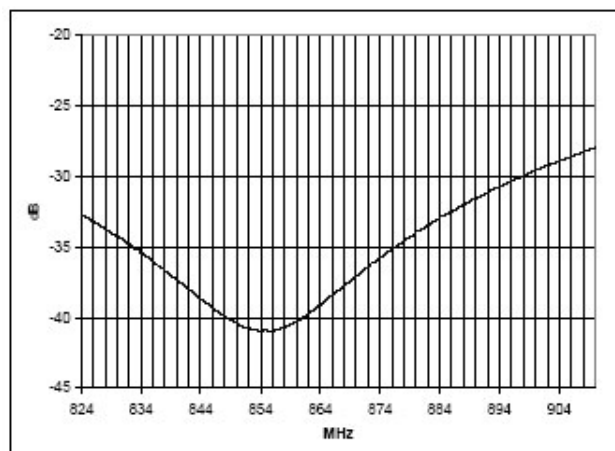**824 – 960 MHz**

M/A-COM Products
Rev. 3

Typical Performance Curves

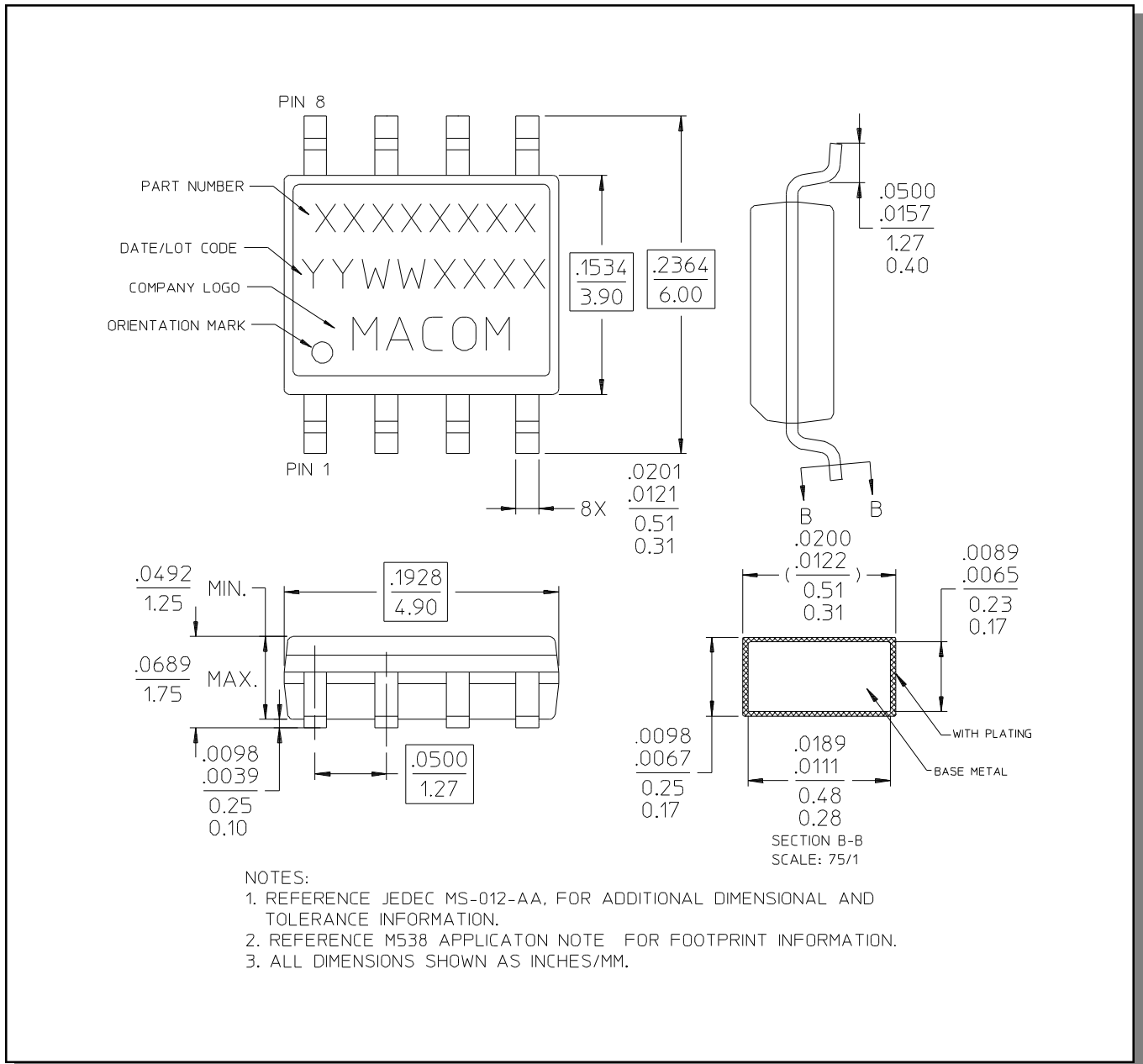*Insertion Loss vs. Frequency*

VSWR Input vs. Frequency

Isolation vs. Frequency

VSWR Output vs. Frequency

MAPDCC0005

Tyco Electronics

Low Cost Three Way Power Splitter/Combiner
824 – 960 MHz

M/A-COM Products
Rev. 3

Lead-Free, SOIC-8†

PIN 8

PART NUMBER
DATE/LOT CODE
COMPANY LOGO
ORIENTATION MARK

XXXXXXXX
YYWWXXXX
MACOM

PIN 1

$\frac{.1534}{3.90}$

$\frac{.2364}{6.00}$

$\frac{.0201}{.0121}$ $\frac{}{0.51}$ $\frac{}{0.31}$ 8X

$\frac{.0500}{.0157}$ $\frac{}{1.27}$ $\frac{}{0.40}$

B   B

$\frac{.0200}{.0122}$ $\left(\frac{}{0.51}\right)$ $\frac{}{0.31}$

$\frac{.0089}{.0065}$ $\frac{}{0.23}$ $\frac{}{0.17}$

$\frac{.0492}{1.25}$ MIN.

$\frac{.1928}{4.90}$

$\frac{.0689}{1.75}$ MAX.

$\frac{.0098}{.0039}$ $\frac{}{0.25}$ $\frac{}{0.10}$

$\frac{.0500}{1.27}$

$\frac{.0098}{.0067}$ $\frac{}{0.25}$ $\frac{}{0.17}$

$\frac{.0189}{.0111}$ $\frac{}{0.48}$ $\frac{}{0.28}$

WITH PLATING
BASE METAL

SECTION B-B
SCALE: 75/1

NOTES:
1. REFERENCE JEDEC MS-012-AA, FOR ADDITIONAL DIMENSIONAL AND TOLERANCE INFORMATION.
2. REFERENCE M538 APPLICATON NOTE FOR FOOTPRINT INFORMATION.
3. ALL DIMENSIONS SHOWN AS INCHES/MM.

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

M/A-COM Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.