

## Features

- Small Size, Low Profile
- Superior Repeatability (Lot-to-Lot Variation)
- Typical Isolation: 30 dB
- Typical Insertion Loss: 1.5 dB
- Low Cost
- 1 Watt Power Handling
- Lead-Free QSOP-20 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS\* Compliant Version of DS58-0001

## Description

M/A-COM’s MAPDCC0021 is an IC-based monolithic power divider in a low cost QSOP-20 plastic package. This 8-way power divider is ideally suited for applications where PCB real estate is at a premium and part count reduction and cost are critical. Typical applications include base station switching networks and other cellular equipment, including subscriber units. Available in tape and reel.

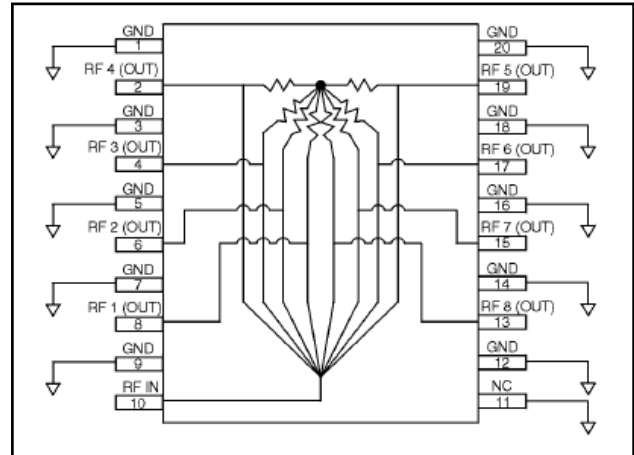
The MAPDCC0021 is fabricated using a passive-integrated circuit process. The process features full-chip passivation for increased performance and reliability.

## Ordering Information

Part Number	Package
MAPDCC0021	Bulk Packaging
MAPDCC0021-TR	1000 piece reel
MAPDCC0021-TB	Sample Test Board

Note: Reference Application Note M513 for reel size information.

## Functional Block Diagram



1. Pins 1, 3, 5, 7, 9, 12, 14, 16, 18, and 20 should be RF and DC grounded.

## Pin Configuration

Pin No.	Function	Pin No.	Function
1	GND	11	NC
2	RF 4 (OUT)	12	GND
3	GND	13	RF 8 (OUT)
4	RF 3 (OUT)	14	GND
5	GND	15	RF 7 (OUT)
6	RF 2 (OUT)	16	GND
7	GND	17	RF 6 (OUT)
8	RF 1 (OUT)	18	GND
9	GND	19	RF 5 (OUT)
10	RF IN	20	GND

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

**Electrical Specifications:  $T_A = 25^\circ\text{C}$ ,  $Z_0 = 50\Omega$**

Parameter	Units	Min	Typ	Max
Insertion Loss Above 9.0 dB	dB	—	1.5	2.0
Isolation	dB	20	30	—
VSWR	—	—	1.7:1	2.0:1
Amplitude Balance	dB	—	0.4	0.8
Phase Balance	Deg.	—	5	10

**Absolute Maximum Ratings <sup>2,3</sup>**

Parameter	Absolute Maximum
Input Power <sup>4</sup>	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 0.125 W maximum.

**Handling Procedures**

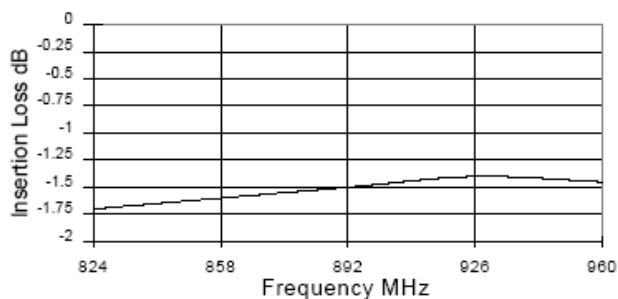
Please observe the following precautions to avoid damage:

**Static Sensitivity**

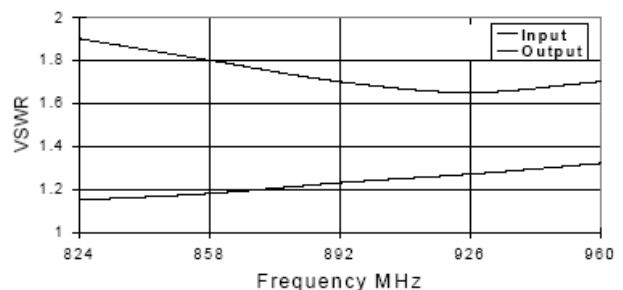
GMIC Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

**Typical Performance Curves @ 25°C**

*Insertion Loss vs. Frequency*

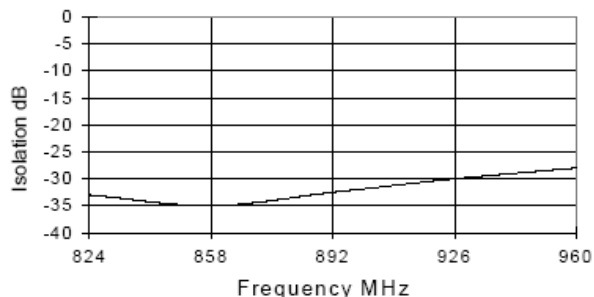


*VSWR vs. Frequency*

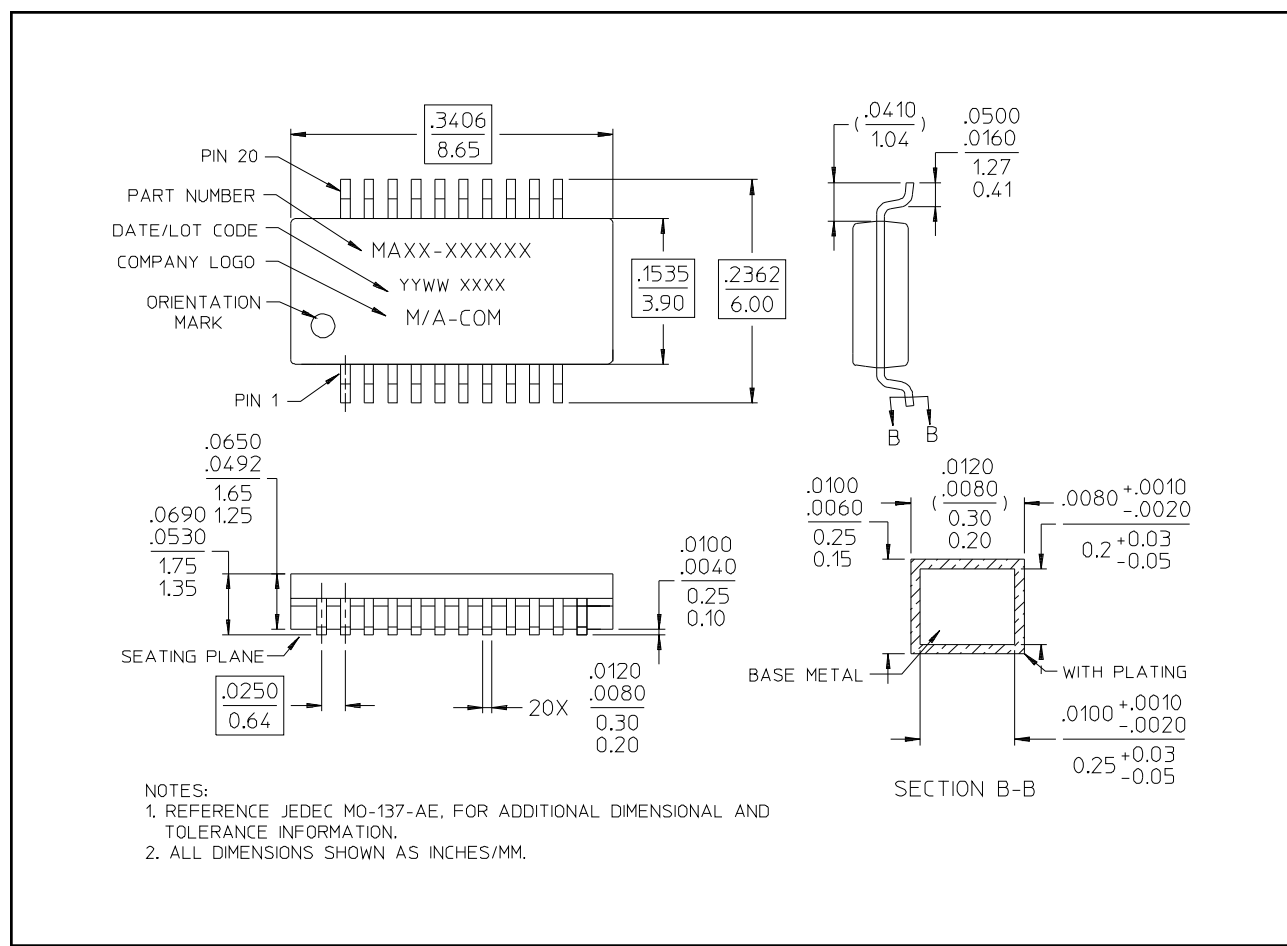


### Typical Performance Curves @ 25°C

#### Isolation vs. Frequency



#### Lead-Free, QSOP-20<sup>†</sup>



<sup>†</sup> Reference Application Note M538 for lead-free solder reflow recommendations.