

Low Cost Two-Way GMIC SMT Power Divider 1700 – 2000 MHz

Rev. V2

Features

- Small Size and Low Profile
- Typical Insertion Loss: 0.6 dB
- Typical Amplitude Balance: 0.2 dB
- 1 Watt Power Handling
- Lead-Free SOT-26 Package
- 100% Matte Tin Plating over Copper
- Halogen-Free “Green” Mold Compound
- 260°C Reflow Compatible
- RoHS* Compliant Version of DS52-0014

Description

M/A-COM's MAPD-007530-000100 is an IC-based monolithic power divider using M/A-COM's GMIC technology in a low cost SOT-26 plastic package. This 2-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 handsets, base station switching networks and other communication applications where size and PCB real estate are at a premium. Available in Tape and Reel.

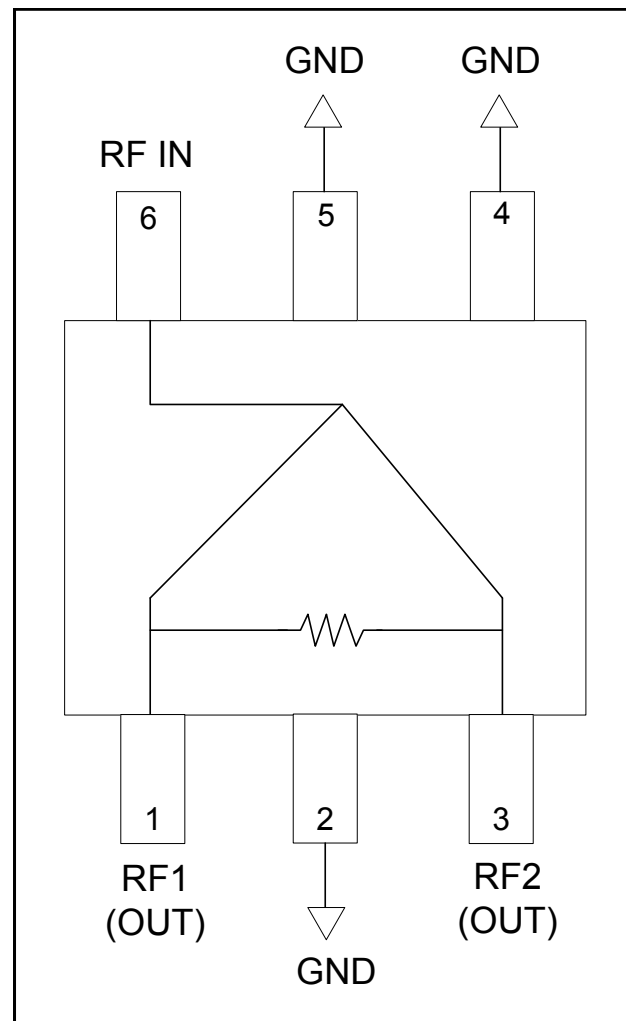
The MAPD-007530-000100 is fabricated using a passive integrated circuit process. The process features full-chip passivation for increased performance and reliability.

Ordering Information

Part Number	Package
MAPD-007530-000100	Bulk Packaging
MAPD-007530-0001TR	1000 piece reel
MAPD-007530-0001TB	Sample Test Board

Note: Reference Application Note M513 for reel size information.

Functional Diagram



Pin Configuration

Pin No.	Function	Pin No.	Function
1	RF1 (OUT)	4	GND
2	GND	5	GND
3	RF2 (OUT)	6	RF IN

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

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

Parameter	Test Conditions	Units	Min	Typ	Max
Insertion Loss Above 3.0 dB	1700 - 2000 MHz	dB	—	0.6	0.8
Isolation	1700 - 2000 MHz	dB	16	20	—
VSWR Input	1700 - 2000 MHz	Ratio	—	1.2:1	1.4:1
RF1, RF2 Outputs	1700 - 2000 MHz	Ratio	—	1.1:1	1.3:1
Amplitude Balance	1700 - 2000 MHz	dB	—	0.2	0.4
Phase Balance	1700 - 2000 MHz	Deg.	—	1.5	3.0

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

- 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.

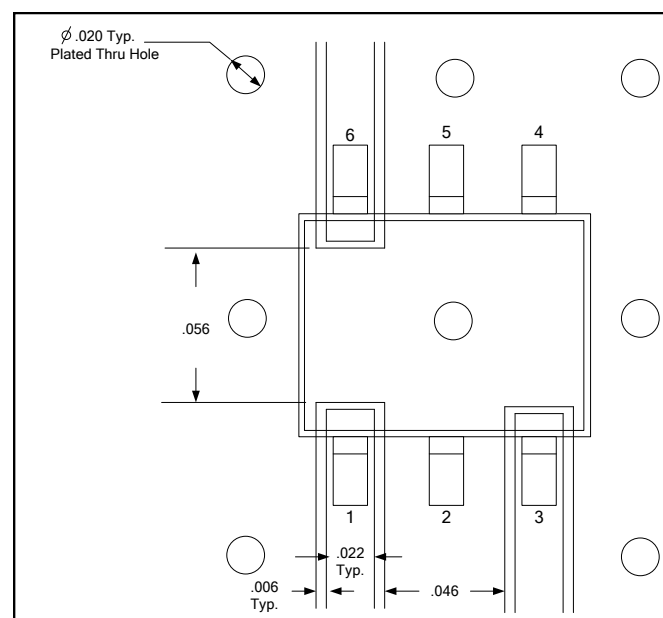
Handling Procedures

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."

Recommended PCB Configuration

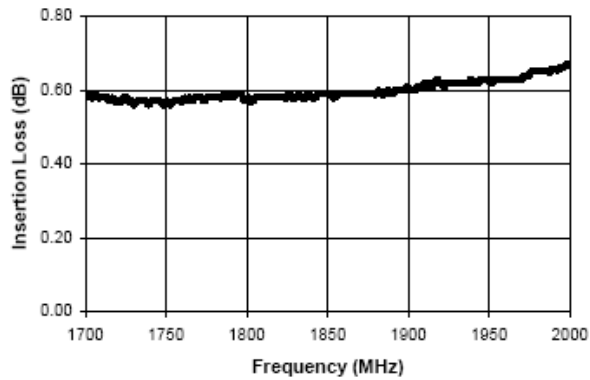


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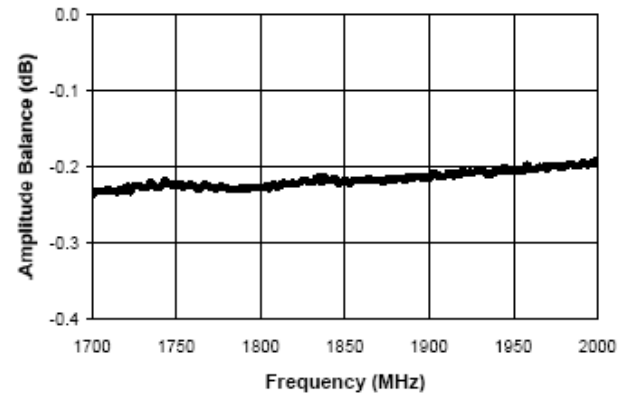
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Typical Performance Curves @ 25°C

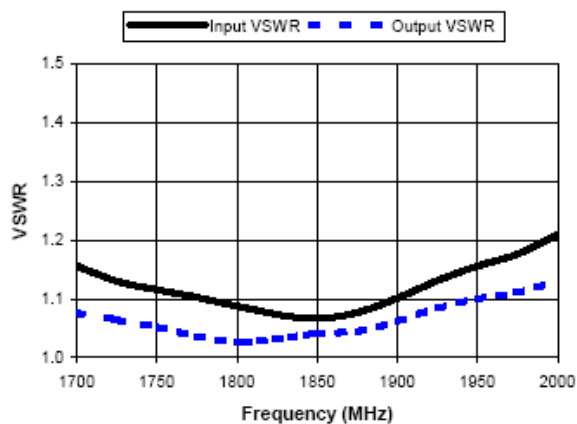
Insertion Loss vs. Frequency



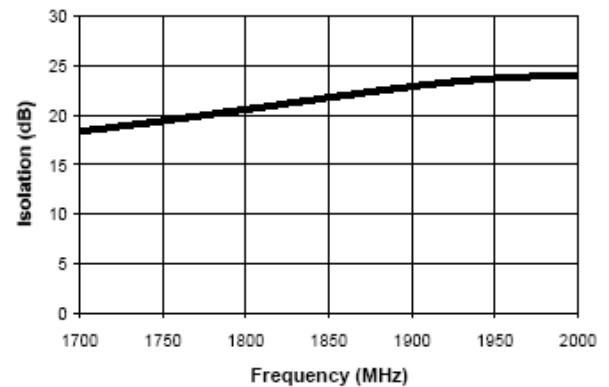
Amplitude Balance vs. Frequency



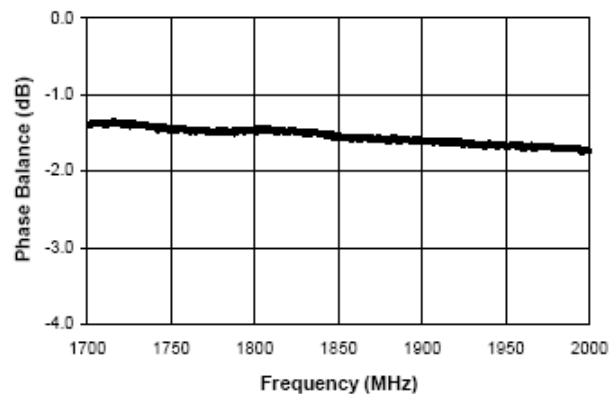
VSWR vs. Frequency



Isolation vs. Frequency



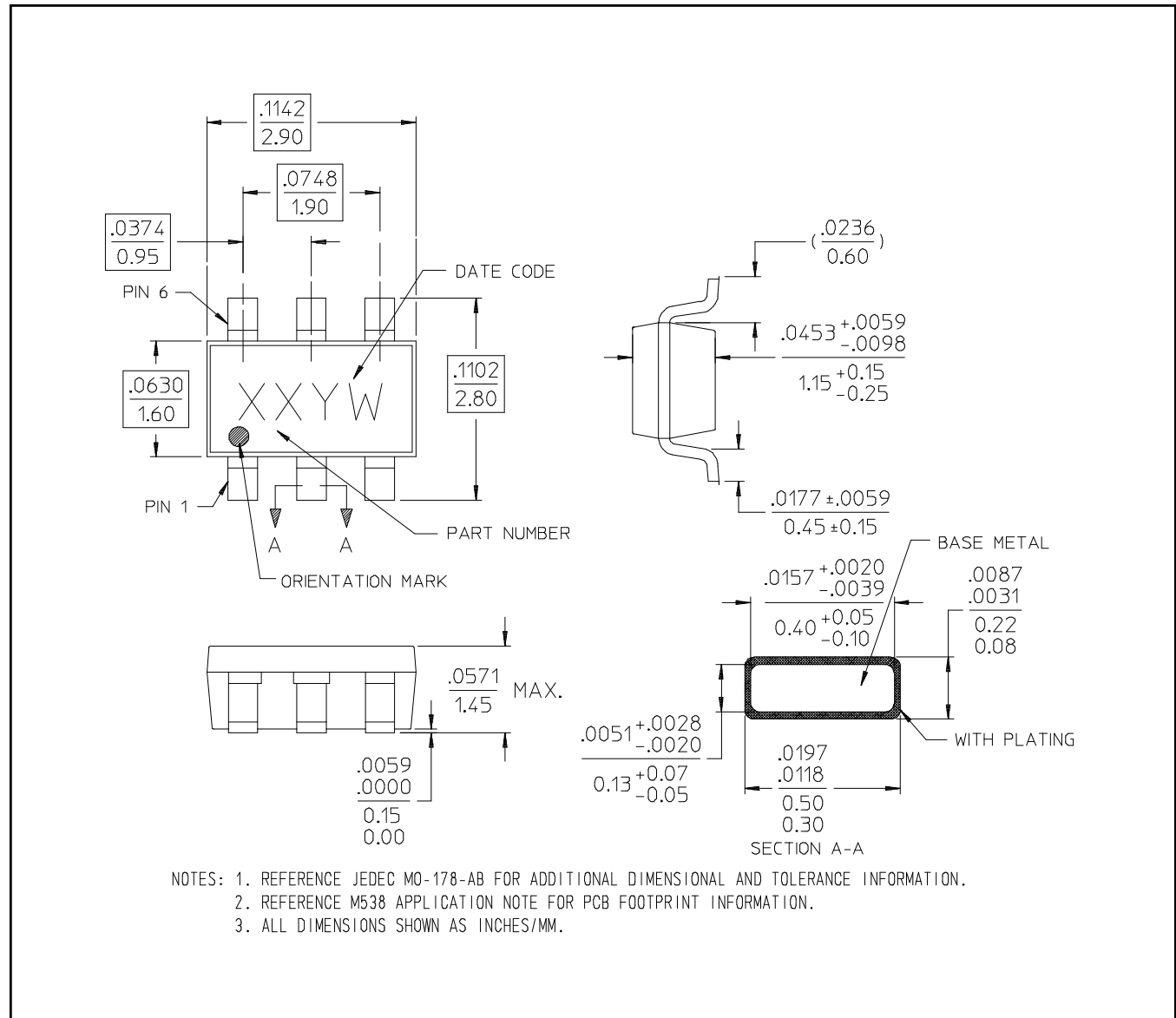
Phase Balance vs. Frequency



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Lead-Free SOT-26[†]



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

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