

Surface Mount

# Monolithic Amplifier

0.1-1.5 GHz

## Product Features

- Wideband, 0.1 to 1.5GHz
- High output power, up to +19 dBm typ. at 0.5 GHz
- Aqueous washable
- May be used as a replacement to MSA-0505<sup>a,b</sup>



## MAV-5SM

CASE STYLE: RRR137-1  
PRICE: Contact Sales Dept.

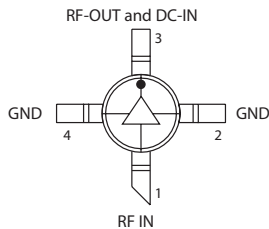
## Typical Applications

- UHF - TV
- Cellular
- Defense communication
- UHF/VHF receivers/transmitters

## General Description

MAV-5SM is a wideband MMIC amplifier offering high dynamic range. It is enclosed in a plastic molded package.

## pin description



Function	Pin Number	Description
RF IN	1	RF input pin. This pin requires the use of an external DC blocking capacitor chosen for the frequency of operation.
RF-OUT and DC-IN	3	RF output and bias pin. DC voltage is present on this pin; therefore a DC blocking capacitor is necessary for proper operation. An RF choke is needed to feed DC bias without loss of RF signal due to the bias connection, as shown in "Recommended Application Circuit".
GND	2,4	Connections to ground. Use via holes as shown in "Suggested Layout for PCB Design" to reduce ground path inductance for best performance.

### Notes:

- a. Suitability for model replacement within a particular system must be determined by and is solely the responsibility of the customer based on, among other things, electrical performance criteria, stimulus conditions, application, compatibility with other components and environmental conditions and stresses.
- b. The Agilent MSA-0505 part number is used for identification and comparison purposes only.



For detailed performance specs  
& shopping online see web site

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IF/RF MICROWAVE COMPONENTS

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp).

REV. OR  
M131485  
MAV-5SM  
120815  
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Electrical Specifications at 25°C and 80mA, unless noted

Parameter	Condition (GHz)	Min.	Typ.	Max.	Units
Frequency Range		0.1		1.5	GHz
Gain	0.5	—	7.5	—	dB
	1.0	6.0	7.0	—	
Gain Flatness	0.1-1.5	—	±0.75	—	dB
Input VSWR	0.1-1.5	—	1.6	—	(:1)
Output VSWR	0.1-1.5	—	2.0	—	(:1)
Group Delay	1.0	—	190	—	ps
Output Power @ 1 dB compression	0.5	—	+19	—	dBm
	1.0	+16	+18	—	
Output IP3	1.0	—	+29	—	dBm
Noise Figure	1.0	—	+6.5	—	dB
Recommended Device Operating Current	—	—	80	—	mA
Device Operating Voltage	—	6.7	8.4	10.1	V
Thermal Resistance, junction-to-case <sup>1</sup>	—	—	85	—	°C/W
Device Voltage Temperature coefficient	—	—	-16	—	mV/°C

Absolute Maximum Ratings

Parameter	Ratings
Operating Temperature(Ground Lead) typ.	-20°C to 85°C
Storage Temperature	-65°C to 150°C
Operating Current	135mA
Power Dissipation (Note 2)	1500mW
Input Power	20dBm
Junction Temperature	200°C

Note: Permanent damage may occur if any of these limits are exceeded.

These ratings are not intended for continuous normal operation.

<sup>1</sup>Case is defined as ground leads.

<sup>2</sup>Derate at 11.8 mw/°C for Tg>73°C



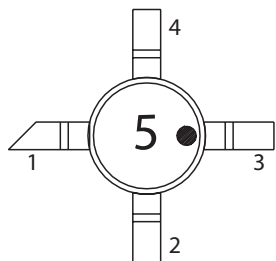
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Product Marking



Markings in addition to model number designation may appear for internal quality control purposes.

Case Style: RRR137-1

Plastic molded package, .145 body diameter, lead finish: tin

Tape & Reel: F11

13" reels with 20, 50, 100, 200, 500 devices

Suggested Layout for PCB Design: PL-169

Recommended Application Circuit

