# Maccon High Performance Amplifier, 25 dB Gain, 10 - 200 MHz

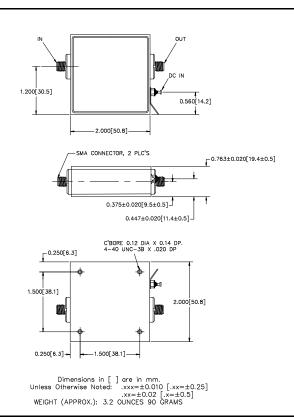
#### **Features**

- +49 dBm Typical Midband Third Order Intercept
- +25 dBm Typical Midband 1 dB Compression
- 5.3 dB Typical Midband Noise Figure

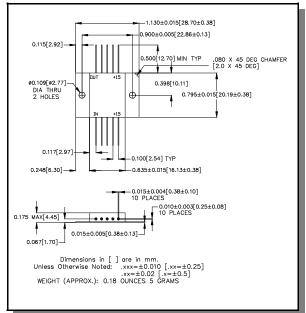
#### Description

M/A-COM's AM-138 is a coupler feedback amplifier with high intercept and compression points. The use of coupler feedback minimizes noise figure and current in a high intercept amplifier. This amplifier is packaged in a flatpack with flanges. Due to the internal power dissipation the thermal rise should be minimized. The ground plane on the PC board should be configured to remove heat from under the package. AM-138 is ideally suited for use where a high intercept, high reliability amplifier is required.

#### C-25



#### FP-9



## Absolute Maximum Ratings<sup>1</sup>

Absolute Maximum
+15 dBm
+17.0 V
-55°C to +85°C
-65°C to +125°C

1. Operation of this device above any one of these parameters may cause permanent damange.

# **Pin Configuration**

Function	Pin #	Function
RF OUT	6	RF IN
GND	7	GND
GND	8	GND
GND	9	GND
Vbias <sup>2</sup>	10	Vbias <sup>2</sup>
	RF OUT GND GND GND	RF OUT6GND7GND8GND9

 Bias may be applied to either a single bias pin, or both bias pins. If bias is applied to both bias pins, it is important that potential ground loops be avoided, and that there is adequate filtering on the bias lines.

Electrical Specifications $I_A = -55^{\circ}C$ to $+85^{\circ}C$ Case Temperature							
Parameter	Test Conditions	Frequency	Units	Min.	Тур.	Max.	
Gain	50 MHz @ +25°C	50 MHz	dB	24.2	25.4	25.8	
Frequency Response	_	10 - 200 MHz	dB	—	_	±1.0	
Gain Variation with Temperature	_	10 - 200 MHz	dB	-1.4	—	+1.0	
1 dB Compression	Output Power	10 - 200 MHz 10 - 70 MHz	dBm dBm	+23 +25	—	_	
Noise Figure	_	10 - 200 MHz	dB	_	—	7.0	
Reverse Transmission	_	10 - 200 MHz	dB	—	-35	-33	
VSWR	_	10 - 200 MHz 10 - 70 MHz	Ratio Ratio		_	2.5:1 1.8:1	
Output IP <sub>2</sub>	Two-tone inputs up to +10 dBm	10 - 200 MHz 10 - 70 MHz	dBm dBm	+50 +56	_	_	
Output IP <sub>3</sub>	Two-tone inputs up to +10 dBm	10 - 200 MHz 10 - 70 MHz	dBm dBm	+35 +41	_	_	
Vbias	_	_	V	14.25	15	15.75	
Ibias	Vbias = +15.0 VDC	_	mA	_	180	220	
Power Dissipation	@ +15V Bias		W	—	2.7	_	

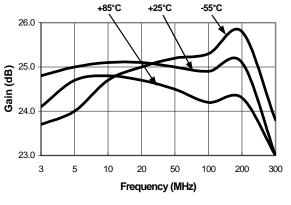
## Electrical Specifications<sup>3,4</sup> T<sub>2</sub> = -55°C to $\pm 85^{\circ}$ C Case Temperature

3. All specifications apply when operated at +15 VDC, with 50 ohms source and load impedance.

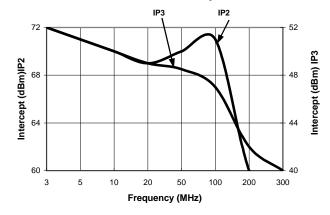
4. Heat Sinking: Operation at case temperature above 95°C is not recommended. Heat sinking adequate to dissipate 3.5W must be provided in use. The flange should be screwed down to the heat sink, which should be RF ground.

# **Typical Performance Curves**





#### Intermodulation Intercept



Specifications subject to change without notice.

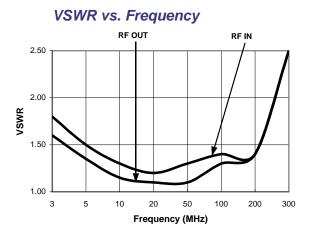
- North America: Tel. (800) 366-2266
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Visit www.macom.com for additional data sheets and product information.

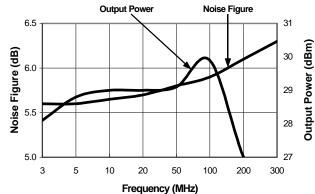


V 5.00

#### **Typical Performance Curves**



Noise Figure and 1 dB Compression



## **Ordering Information**

Part Number	Package
AM-138 PIN	FP-9
AMC-138 SMA	C-25

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