



# 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 metal flatpack the thermal rise 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.

## Ordering Information

Part Number	Package
AM-138 PIN	Flatpack
AMC-138 SMA	Connectorized

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

Parameter	Absolute Maximum
Max. Input Power	+15 dBm
$V_{bias}$	+17.0 V
Operating Temperature	-55°C to +85°C
Storage Temperature	-65°C to +125°C

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

## Pin Configuration

Pin #	Function	Pin #	Function
1	RF OUT	6	RF IN
2	GND	7	GND
3	GND	8	RF OUT
4	GND	9	GND
5	$V_{bias}^2$	10	$V_{bias}^2$

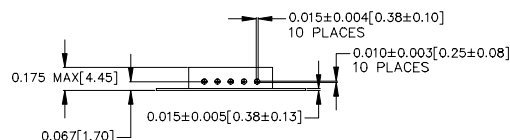
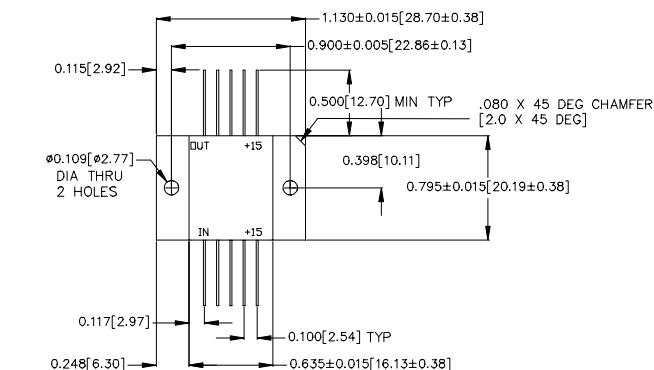
2. Bias may be applied to either a single bias pin, or both bias pins. If bias is applied to both bias pins, it is important that potential ground loops be avoided, and that there is adequate filtering on the bias lines.

Specifications subject to change without notice.

■ **North America:** Tel. (800) 366-2266, Fax (800) 618-8883  
 ■ **Asia/Pacific:** Tel. +81-44-844-8296, Fax +81-44-844-8298  
 ■ **Europe:** Tel. +44 (1344) 869 595, Fax +44 (1344) 300 020

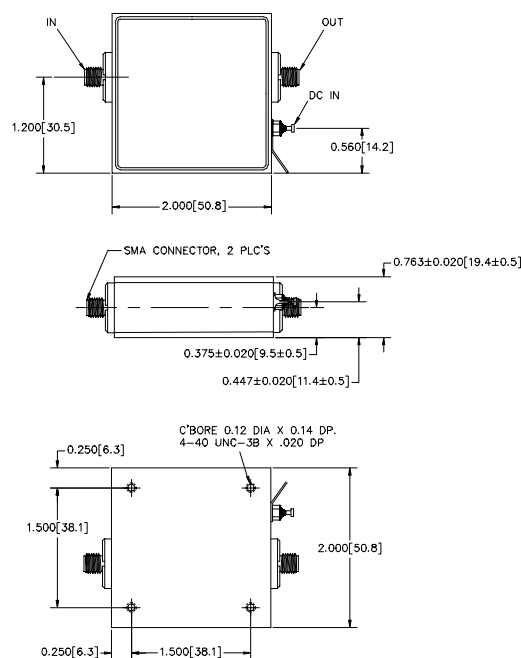
Visit [www.macom.com](http://www.macom.com) for additional data sheets and product information.

## FP-9



Dimensions in [ ] are in mm.  
 Unless Otherwise Noted: .xxx=±0.010 [.xx=±0.25]  
 .xx=±0.02 [.x=±0.5]  
 WEIGHT (APPROX.): 0.18 OUNCES 5 GRAMS

## C-25



Dimensions in [ ] are in mm.  
 Unless Otherwise Noted: .xxx=±0.010 [.xx=±0.25]  
 .xx=±0.02 [.x=±0.5]  
 WEIGHT (APPROX.): 3.2 OUNCES 90 GRAMS

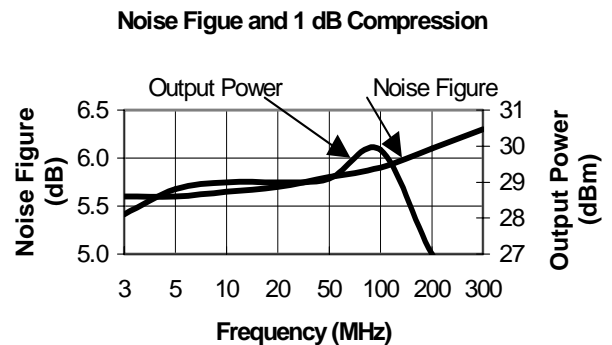
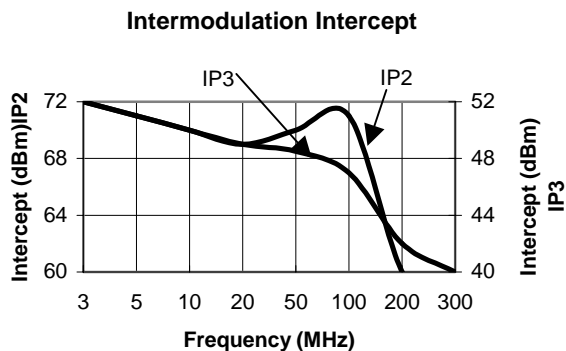
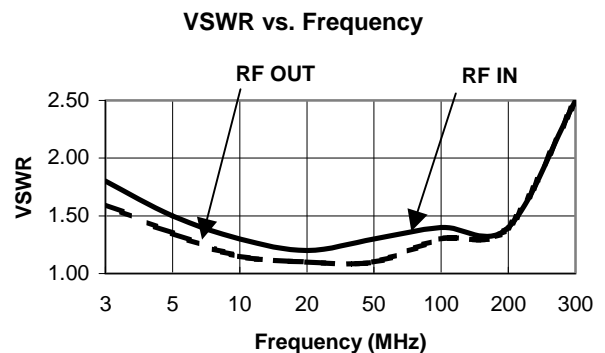
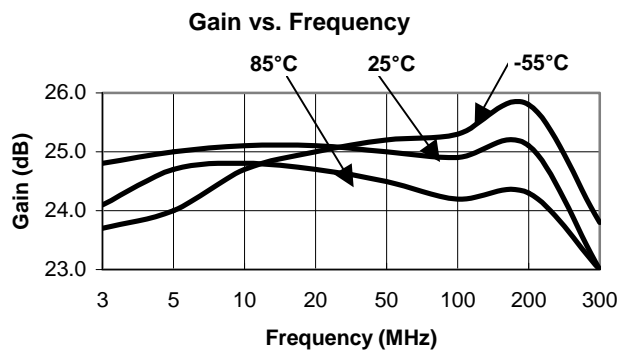
Electrical Specifications<sup>3,4</sup>  $T_A = -55^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  Case Temperature

Parameter	Test Conditions	Frequency	Units	Min	Typical	Max
Gain	50 MHz @ $+25^{\circ}\text{C}$	50 MHz	dB	24.2	25.4	25.8
Frequency Response	—	10 - 200 MHz	dB	—	—	$\pm 1.0$
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 $\text{IP}_2$	Two-tone inputs up to +10 dBm	10 - 200 MHz 10 - 70 MHz	dBm dBm	+50 +56	— —	— —
Output $\text{IP}_3$	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	2.7W Typical	—	mA	—	180	220

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

4. Heat Sinking: Operation at case temperature above  $95^{\circ}\text{C}$  is not recommended. Heat sinking adequate to dissipate 2.7W must be provided in use. The flange should be screwed down to the heat sink, which should be RF ground.

## Typical Performance



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V4.0

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