

## DESCRIPTION

AM183031SF-3H is a wideband power amplifier designed for Wireless Internet Access, Wireless Local Loop, MMDS, and general purpose amplifier applications. It operates from 1.8GHz to 3.4GHz and typically delivers more than 1.25 watts (31dBm) CW output power and 31dB small signal gain. The module has a built-in DC voltage regulator and a negative voltage generator. It can be biased from a 12V to 20V single voltage supply. The amplifier module has 6 screw slots for mounting to a heat sink.

## FEATURES

- Wide bandwidth from 1.8 to 3.4GHz
- High output power, P<sub>1dB</sub> = 31dBm
- High gain, 31dB
- 12V to 20V DC single bias.

## APPLICATIONS

- Wireless Internet Access
- Wireless Local Loop
- MMDS

## PERFORMANCE ( $V_{dd} = +12V$ , $I_{dq} = 0.8A$ , $T_a = 25^{\circ}C$ )

Parameters	Minimum	Typical	Maximum
Frequency	2 – 3.2MHz	1.8 – 3.4MHz	
Gain (Small signal)	27dB	31dB	
Gain Ripple		±1dB	±2dB
P <sub>1dB</sub>	30dBm	31 dBm (1.25W)	
P <sub>3dB</sub>	31dBm	32dBm	
IP3 at 2.6GHz		38dBm	
Input VSWR		1.5:1	2:1
Output VSWR		2:1	3:1

## ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Rating
Supply voltage	$V_{dd}$	20V
Continuous dissipation at room temperature	$P_t$	16W
Operating ambient temp	$T_a$	-45°C to +85°C
Storage temperature	$T_{sto}$	-55°C to +135°C

### SMALL SIGNAL DATA

Figure 1 shows the small signal gain as a function of frequency.

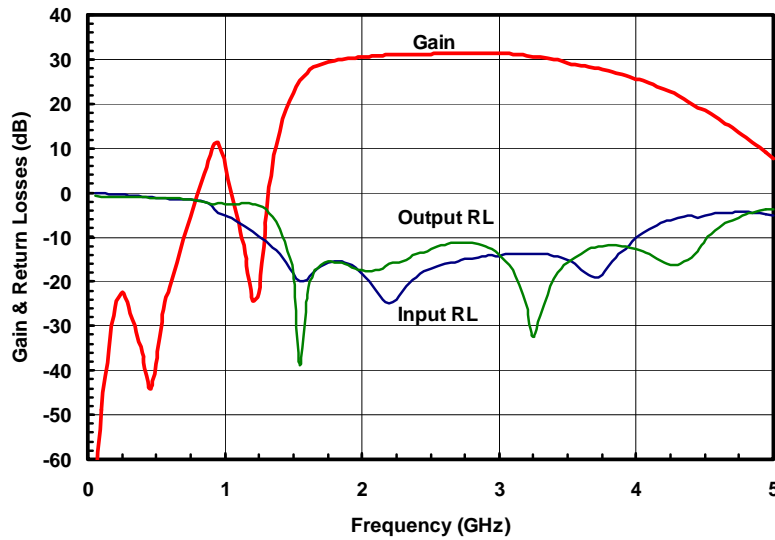


Figure 1: Gain and return loss as a function of frequency. ( $V_{dd} = +12V$ ,  $I_{dq} = 0.8A$ ,  $T_a = 25^\circ C$ )

### POWER DATA

Figure 2 shows the output power at 1dB compression  $P_{1dB}$  and efficiency as a function of frequency.

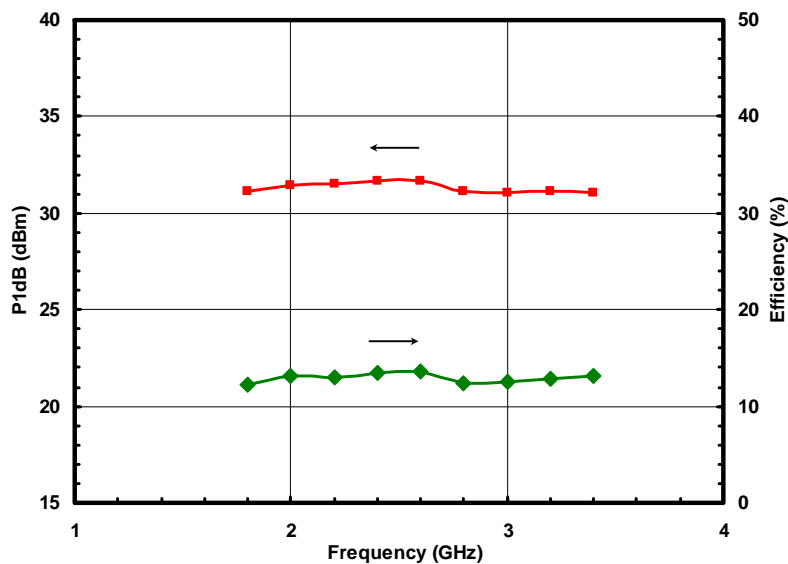


Figure 2:  $P_{1dB}$  and Efficiency ( $V_{dd} = 12V$ ) versus Frequency

Figure 3 shows the output power at 3dB compression  $P_{3dB}$  and efficiency as a function of frequency.

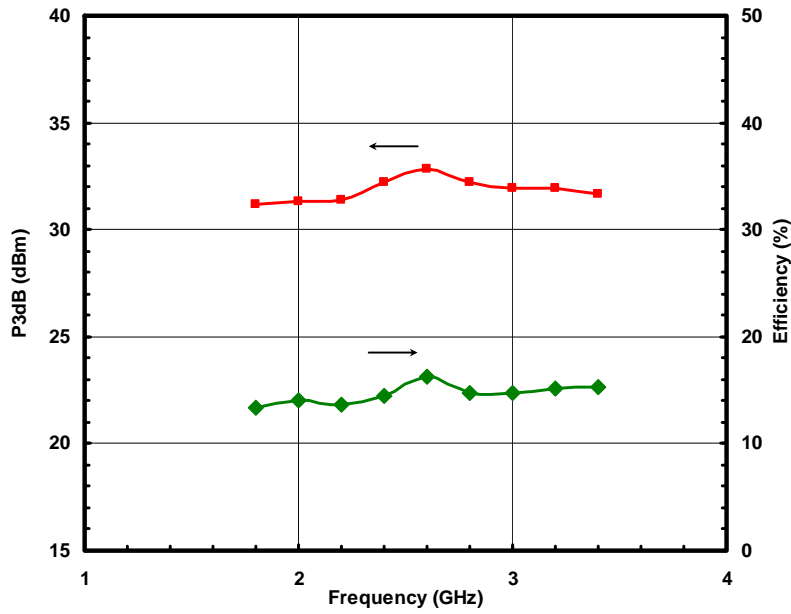


Figure 3:  $P_{3dB}$  and Efficiency ( $V_{dd} = 12V$ ) versus Frequency

Figure 4 shows the 3<sup>rd</sup> order inter-modulation intercept.

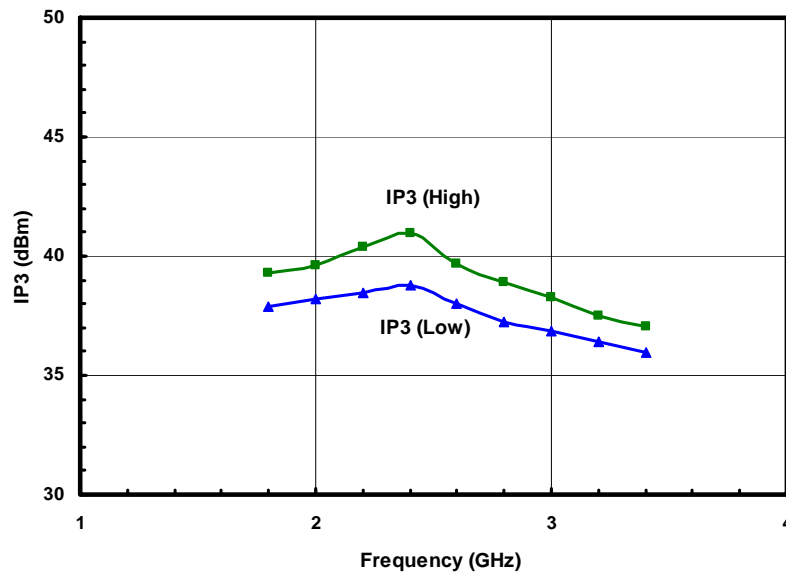


Figure 4: Third order inter-modulation intercept versus Frequency

**PACKAGE OUTLINE**

Figure 6 is the photograph of the housing. Figure 7 shows the package outline. The dimension is 2.8”(L) x 2”(W) x 0.56”(H). The module needs a single +12V x 0.7A DC supply. It has SMA connectors for RF input and output, and DC pins for +12V and ground.



Figure 6: Photograph of PA Module

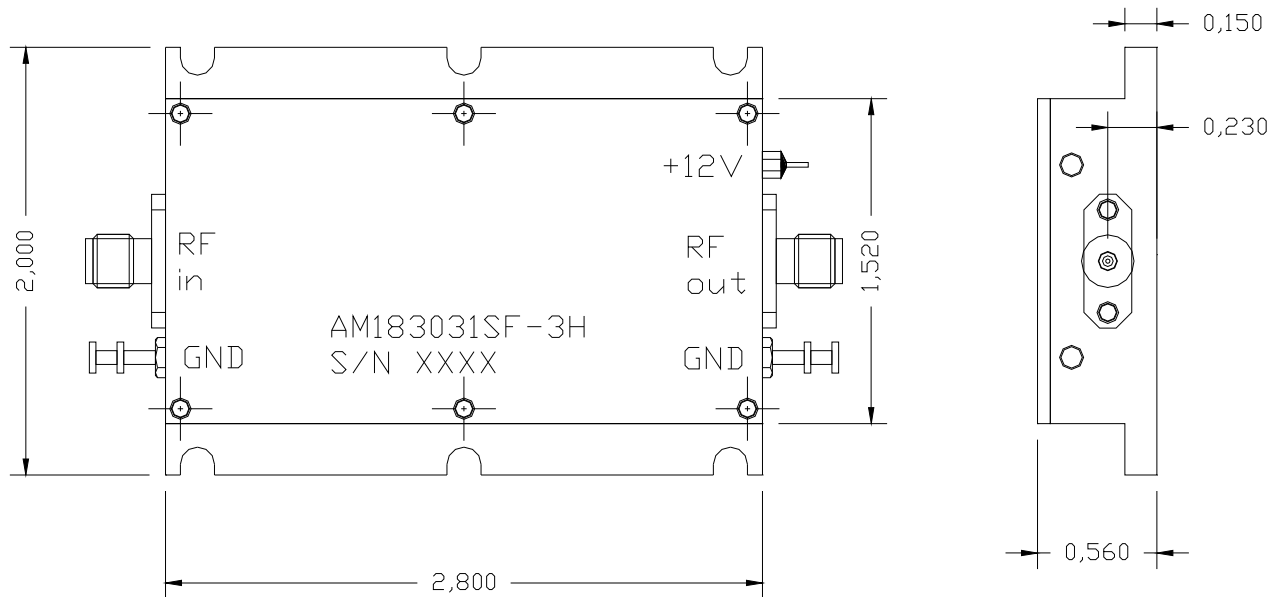


Figure 7: Outline of PA Module. 2.8”(L) x 2”(W) x 0.56”(H)