

## DESCRIPTION

AM304031SF-3H is a wideband power amplifier designed for Wireless Internet Access, Wireless Local Loop, and Broadband Wireless Access (BWA). It operates from 2.6GHz to 4.6GHz and typically delivers more than 1.25 watts (31dBm) CW output power and 29dB 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 2.6 to 4.6GHz
- High output power, P<sub>1dB</sub> = 31dBm
- High gain, 29dB
- 12V to 20V DC single bias.

## APPLICATIONS

- Wireless Internet Access
- Wireless Local Loop
- Broad Band Wireless Access (BWA)

## PERFORMANCE ( $V_{dd} = +12V$ , $I_{dq} = 0.9A$ , $T_a = 25^{\circ}C$ )

Parameters	Minimum	Typical	Maximum
Frequency	3 – 4GHz	2.6 – 4.6GHz	
Gain (Small signal)	26.5dB	29dB	
Gain Ripple		±1dB	±2dB
P <sub>1dB</sub>	29dBm	31dBm (1.25W)	
P <sub>3dB</sub>	29.5dBm	32dBm	
IP3 at 3.6 GHz		37dBm	
Input VSWR		1.5:1	2:1
Output VSWR		2:1	3:1

## ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Rating
Supply voltage	V <sub>dd</sub>	20V
Continuous dissipation at room temperature	P <sub>t</sub>	18W
Operating ambient temp	T <sub>a</sub>	-45°C to +85°C
Storage temperature	T <sub>sto</sub>	-60°C to +150°C

**SMALL SIGNAL DATA**

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

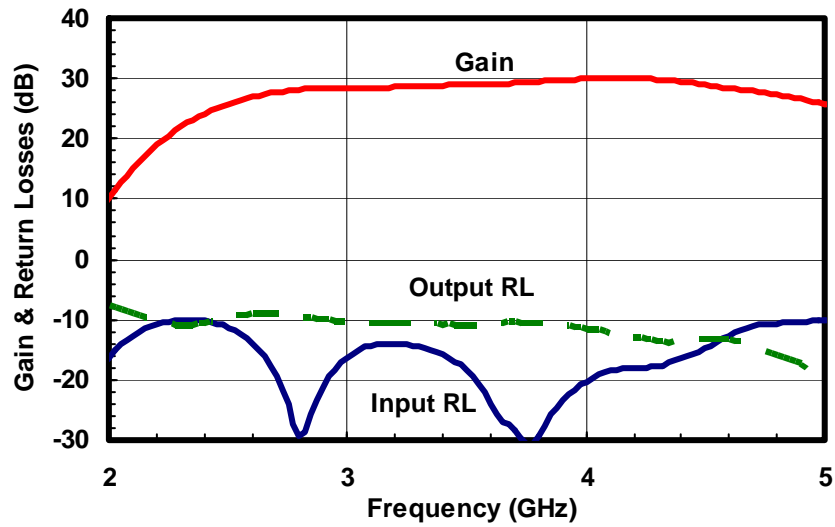


Figure 1: Gain and return loss as a function of frequency. ( $V_{dd} = +12V$ ,  $I_{dq}=0.9A$ ,  $T_a=25^{\circ}C$ )

**POWER DATA**

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

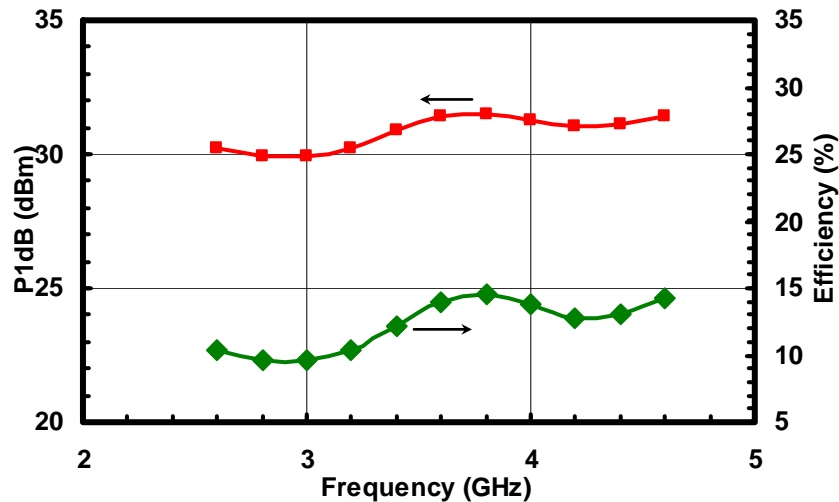


Figure 2:  $P_{1dB}$  and Efficiency ( $V_{dd} = 12V$ ) versus Frequency

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

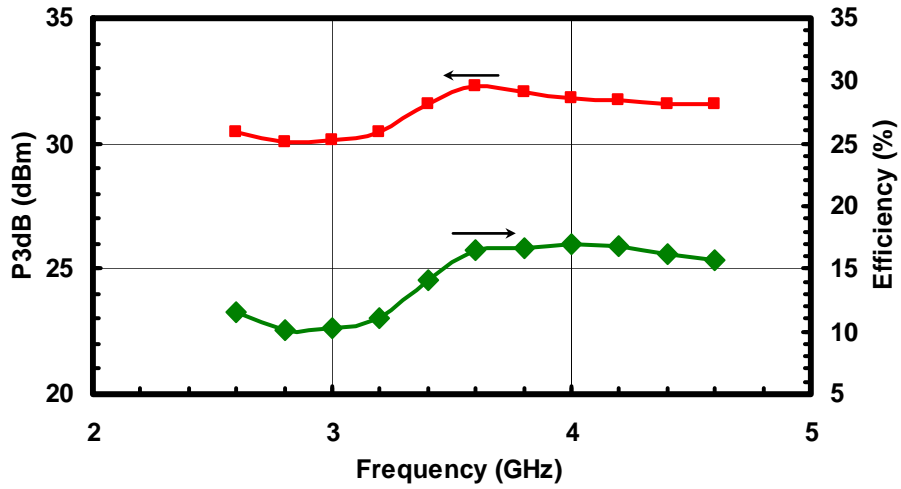


Figure 3:  $P_{3dB}$  and Efficiency ( $V_{dd} = 12V$ ) versus Frequency

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

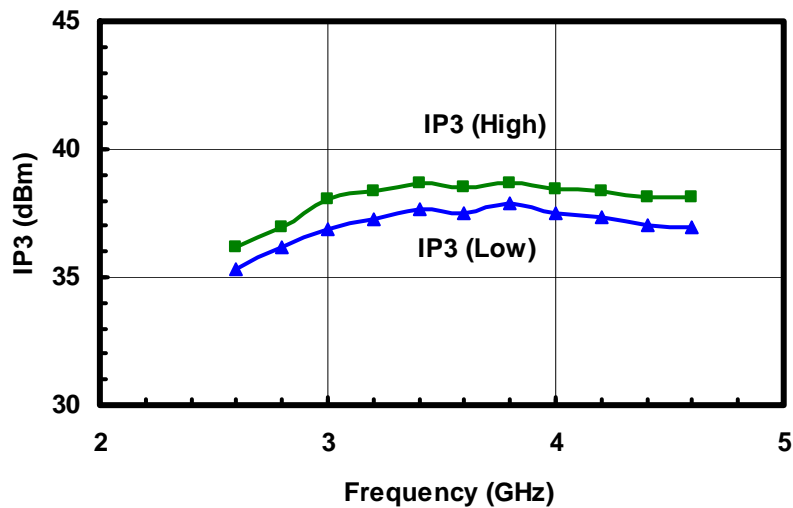


Figure 4: Third order inter-modulation intercept versus Frequency

**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 0.9A DC supply. It has SMA connectors for RF input and output, and DC pins for +12V and ground.



Figure 6: Photograph of PA Module

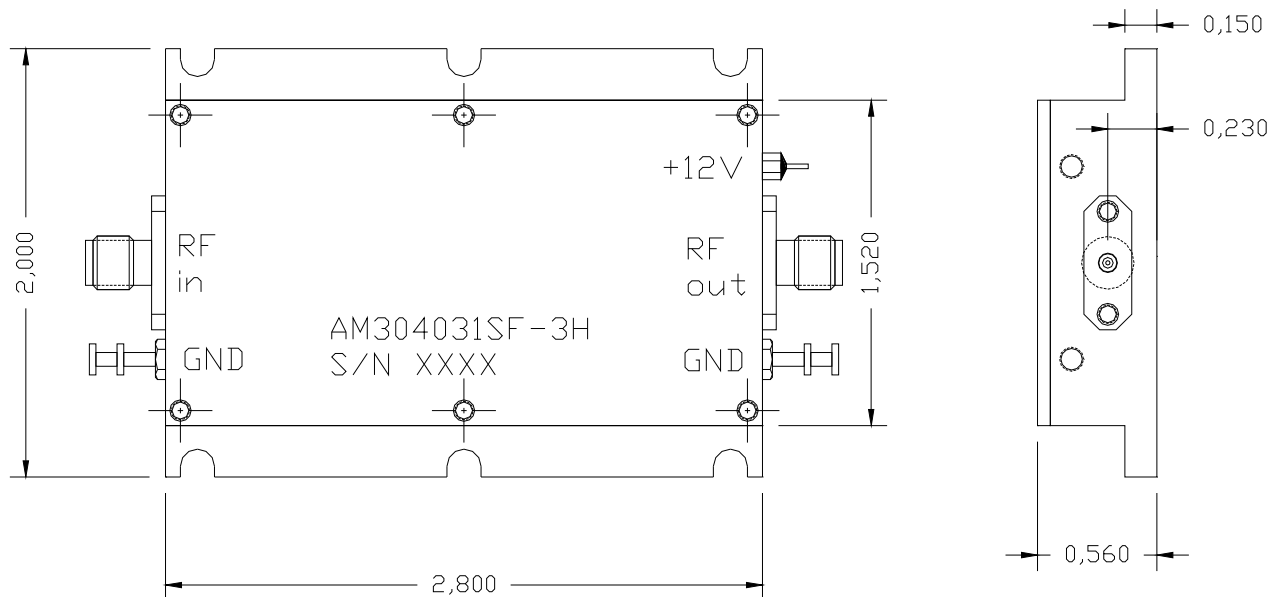


Figure 7: Outline of PA Module. 2.8”(L) x 2”(W) x 0.56”(H)