

DESCRIPTION

AM204437SF-3H is a wideband power amplifier module designed for Wireless Internet Access, Wireless Local Loop, and Two Way Radio. It operates from 2GHz to 4.4GHz and typically delivers more than 4 watts (36dBm) CW output power and 30dB small signal gain. The module has a built-in DC voltage regulator and a negative voltage generator. It can be biased from a 12V single voltage supply. The amplifier module has 6 screw slots for mounting to a heat sink.

FEATURES

- Wide bandwidth from 2 to 4.4GHz
- High output power, P_{1dB} = 36dBm
- High gain, 30dB
- 12V to 20V DC single bias.

APPLICATIONS

- Wireless Internet Access
- Wireless Local Loop
- Two Way Radio

PERFORMANCE ($V_{dd} = +12V$, $I_{dq} = 2A$, $T_a = 25^\circ C$)

Parameters	Minimum	Typical	Maximum
Frequency	2.4 – 4GHz	2 – 4.4GHz	
Gain (Small signal)	25.5dB	30dB	
Gain Ripple		±1dB	±2dB
P _{1dB}	34.5dBm	36dBm (4W)	
P _{3dB}	35.5dBm	37dBm	
IP3 at 3GHz		44dBm	
Input VSWR		2:1	
Output VSWR		2:1	

ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Rating
Supply voltage	V_{dd}	20V
Continuous dissipation at room temperature	P_t	40W
Operating ambient temp	T_a	-45°C to +85°C
Storage temperature	T_{sto}	-60°C to +150°C

SMALL SIGNAL DATA

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

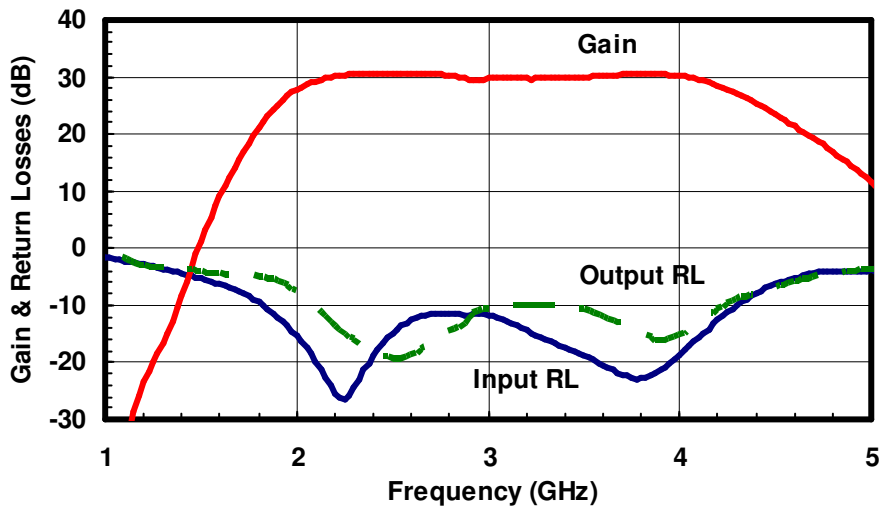


Figure 1: Gain and return loss as a function of frequency. ($V_{dd} = +12V$, $I_{dq} = 2A$, $T_a = 25^\circ C$)

POWER DATA

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

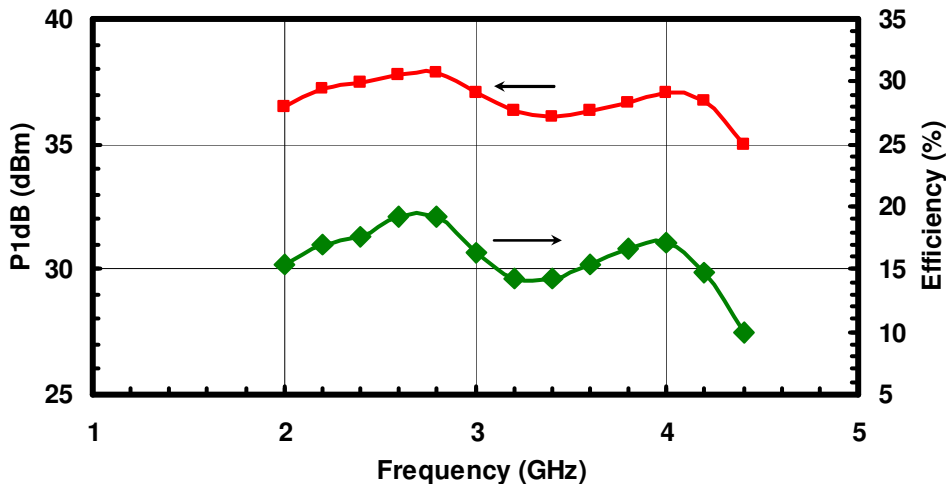


Figure 2: P_{1dB} and Efficiency ($V_{dd} = 12V$) versus Frequency

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

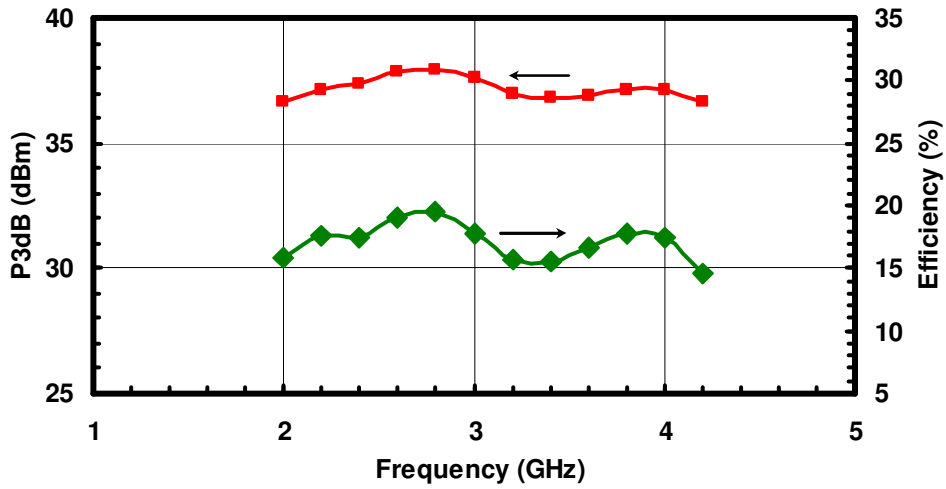


Figure 3: P_{3dB} and Efficiency ($V_{dd} = 12V$) versus Frequency

Figure 4 shows the 3rd order inter-modulation intercept.

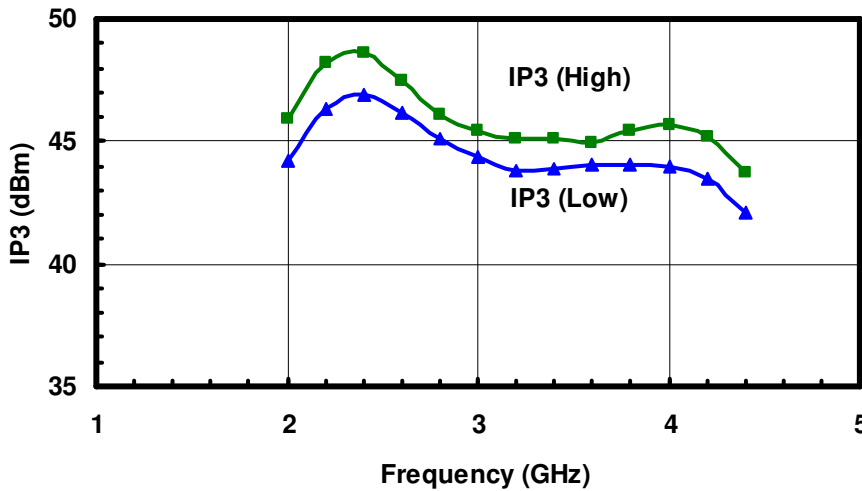


Figure 4: Third order inter-modulation intercept versus Frequency

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 2A DC supply. It has SMA connectors for RF input and output, and DC pins for +12V and ground.



Figure 6: Photograph of PA Module

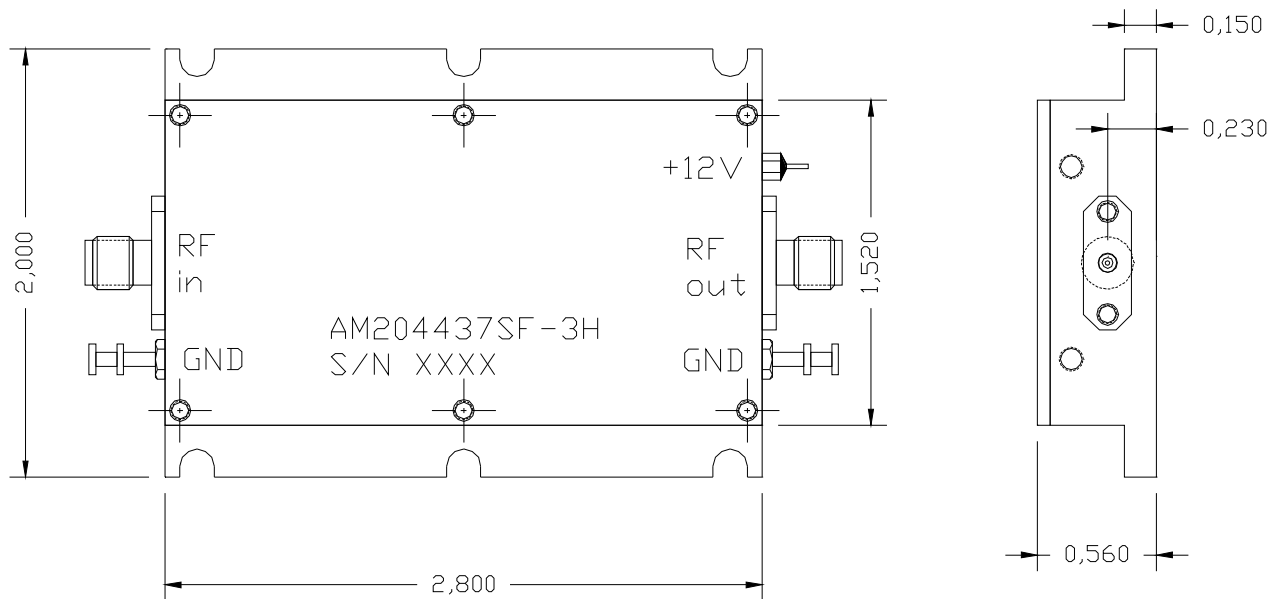


Figure 7: Outline of PA Module. 2.8”(L) x 2”(W) x 0.56”(H)