

## DESCRIPTION

AM141940SF-2H is a wideband power amplifier designed for PCS Base Station, GPS Applications, MMDS, and WLAN Repeaters. It operates from 1.4GHz to 1.9GHz and typically delivers more than 5.5 watts (37.5dBm) CW output power and 25dB small signal gain. The module has a built-in DC voltage regulator and a negative voltage generator. It can be biased from a 16V to 20V single voltage supply. The amplifier module has 6 screw slots for mounting to a heat sink.

## FEATURES

- Wide bandwidth from 1.4 to 1.8GHz
- High output power, P<sub>1dB</sub> = 37.5dBm
- High gain, 25dB
- 12V to 20V DC single bias.

## APPLICATIONS

- PCS Base Station
- GPS Applications
- MMDS
- WLAN Repeaters

## PERFORMANCE (V<sub>dd</sub> = +16V, I<sub>dq</sub> = 1.75A, T<sub>a</sub> = 25°C)

Parameters	Minimum	Typical	Maximum
Frequency		1.4 – 1.8GHz	
Gain (Small signal)	22dB	25dB	
Gain Ripple		±1dB	±2dB
P <sub>1dB</sub>	36dBm	37.5dBm (5.5W)	
P <sub>3dB</sub>	36dBm	38dBm	
IP3 at 1.6GHz		50dBm	
Input VSWR		1.5:1	2:1
Output VSWR		2:1	

## ABSOLUTE MAXIMUM RATING

Parameters	Symbol	Rating
Supply voltage	V <sub>dd</sub>	20V
Continuous dissipation at room temperature	P <sub>t</sub>	40W
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.

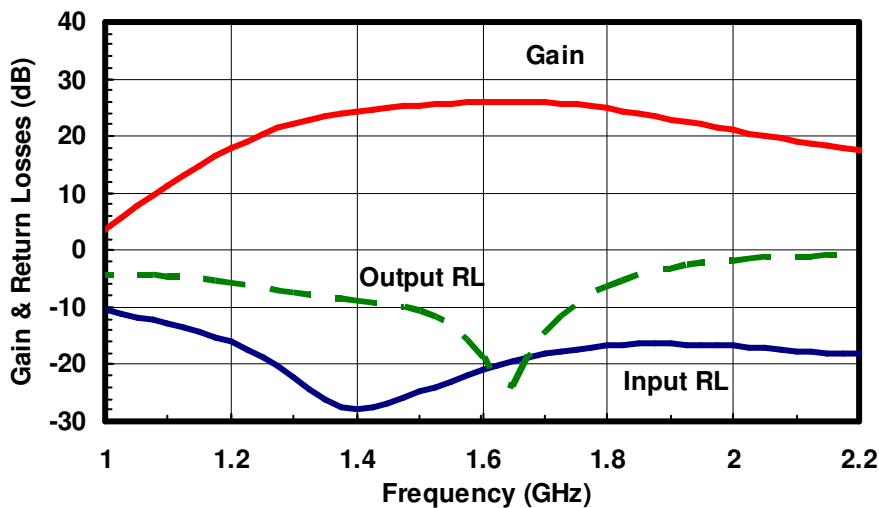


Figure 1: Gain and return loss as a function of frequency. ( $V_{dd} = +16V$ ,  $I_{dq} = 1.75A$ ,  $T_a = 25^\circ C$ )

### POWER DATA

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

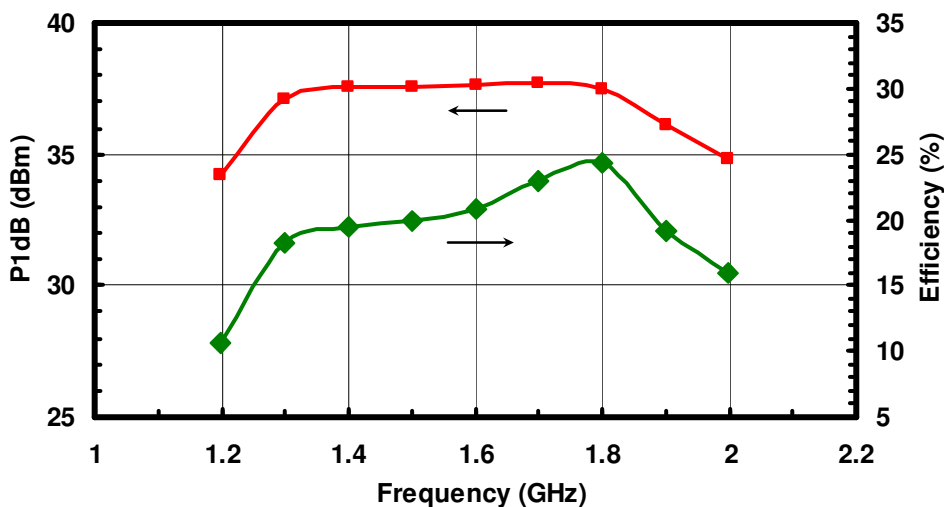


Figure 2:  $P_{1dB}$  and Efficiency ( $V_{dd} = +16V$ ) versus Frequency

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

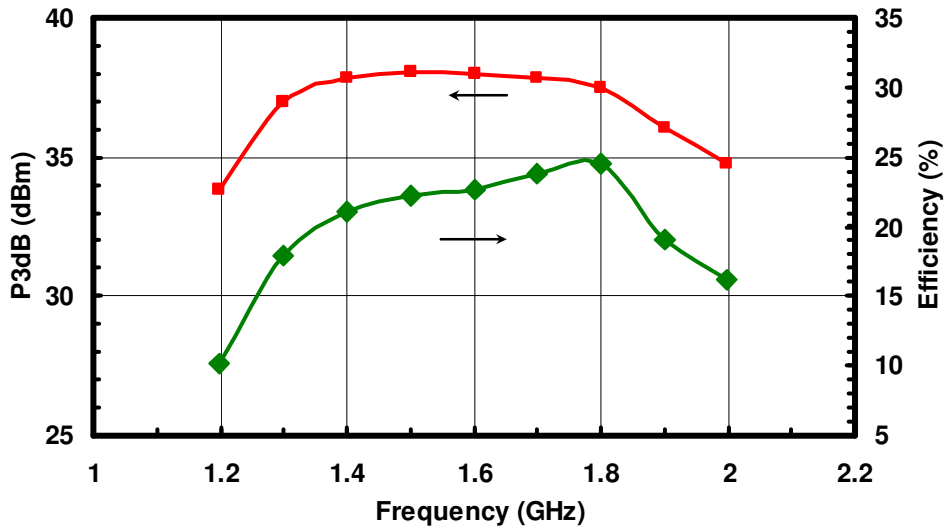


Figure 3:  $P_{3dB}$  and Efficiency ( $V_{dd} = +16V$ ) versus Frequency

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

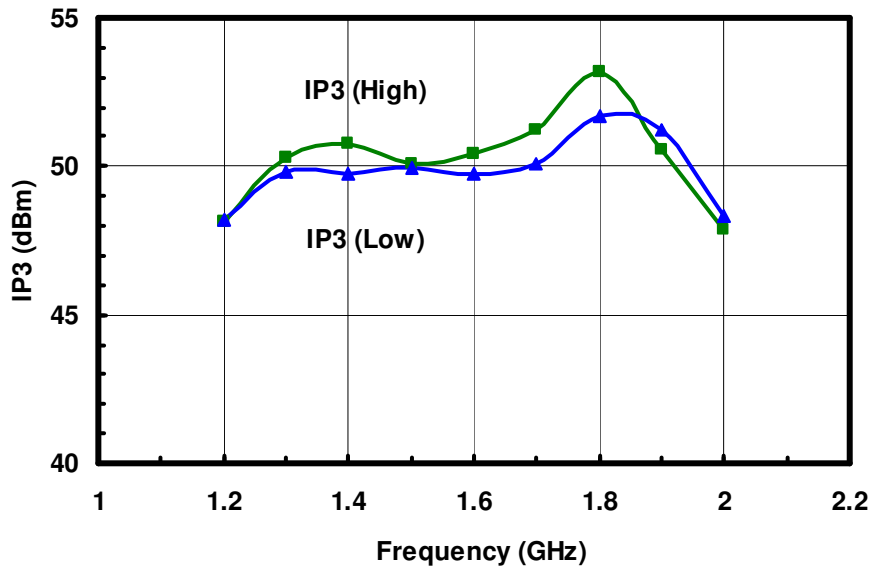


Figure 4: Third order inter-modulation intercept versus Frequency

PACKAGE OUTLINE

Figure 7 shows the package outline of the housing. The dimension is 2.8”(L) x 2”(W) x 0.56”(H). The module needs a single +16V x 1.75A DC supply. It has SMA connectors for RF input and output, and DC pins for +16V and ground.

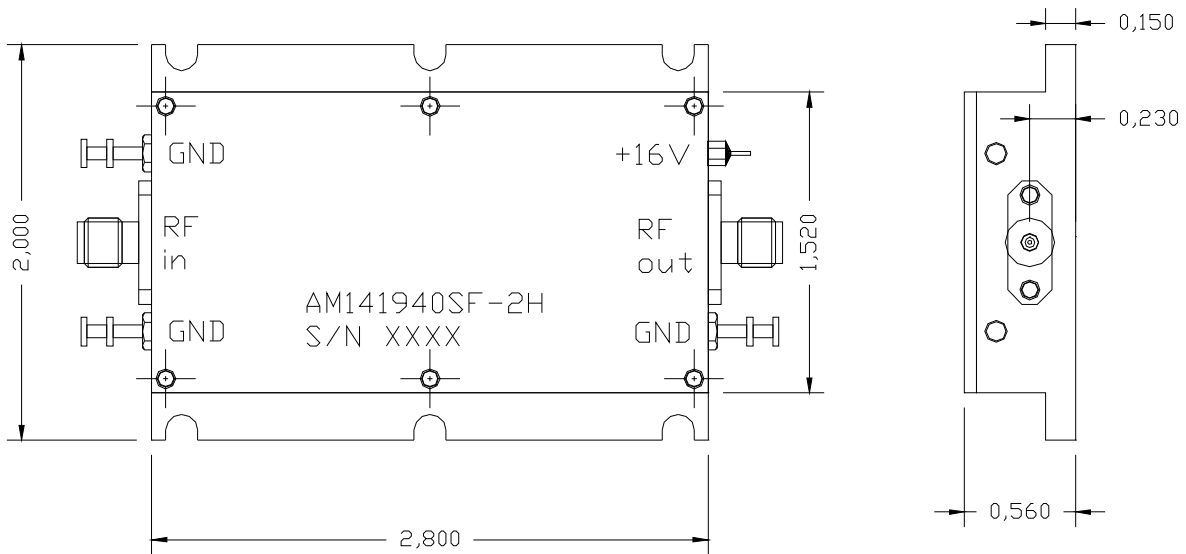


Figure 7: Outline of PA Module. 2.8”(L) x 2”(W) x 0.56”(H)