

## DESCRIPTION

AM153042SF-4H is a broadband High Power Amplifier designed for instrumentation, and communications applications. It operates from 1300 MHz to 3400 MHz and typically delivers more than 20 watts (43dBm) CW output power and 36 dB small signal gain. The module has a built-in DC voltage regulator and a negative voltage generator. It can be biased from a 15V to 20V single supply. The amplifier module has 8 screw holes for mounting to a heat sink.

## FEATURES

- Broadband design from 1300 to 3400 MHz
- High Gain and High Power,  $P_{\text{sat}} = 43\text{dBm}$ , Gain = 36dB
- +15 to + 20V DC Single Bias
- Output power detector

## APPLICATIONS

- Instrumentation
- Broadband communication

## PERFORMANCE

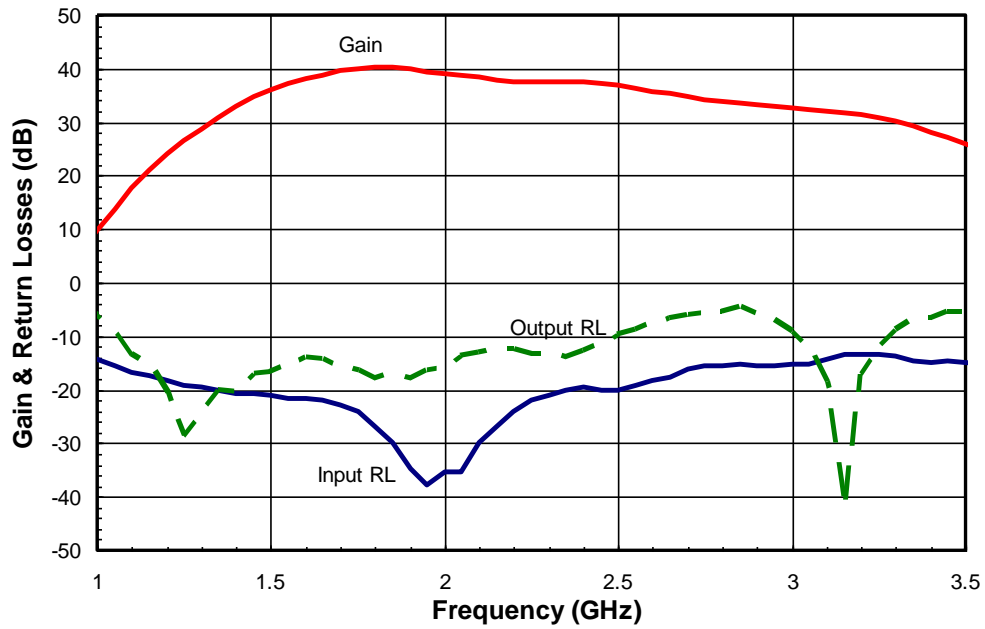
( $V_{\text{dd}} = +15\text{V}$ ,  $I_{\text{dq}} = 6\text{A}$ ,  $T_a = 25^\circ\text{C}$ )

Parameters	Minimum	Typical	Maximum
Frequency	1500 – 3000 MHz	1300 – 3400 MHz	
Small signal Gain	30 dB	36 dB	42 dB
Gain Variation		$\pm 4$ dB	$\pm 6$ dB
P1dB	40 dBm	42 dBm (15W)	
Psat	41 dBm	43 dBm (20W)	
Efficiency @ P3dB		15%	
IP3		48dBm	
Noise Figure		8dB	9dB
Input VSWR		1.5 : 1	2 : 1
Output VSWR		2 : 1	3 : 1

## ABSOLUTE MAXIMUM RATING

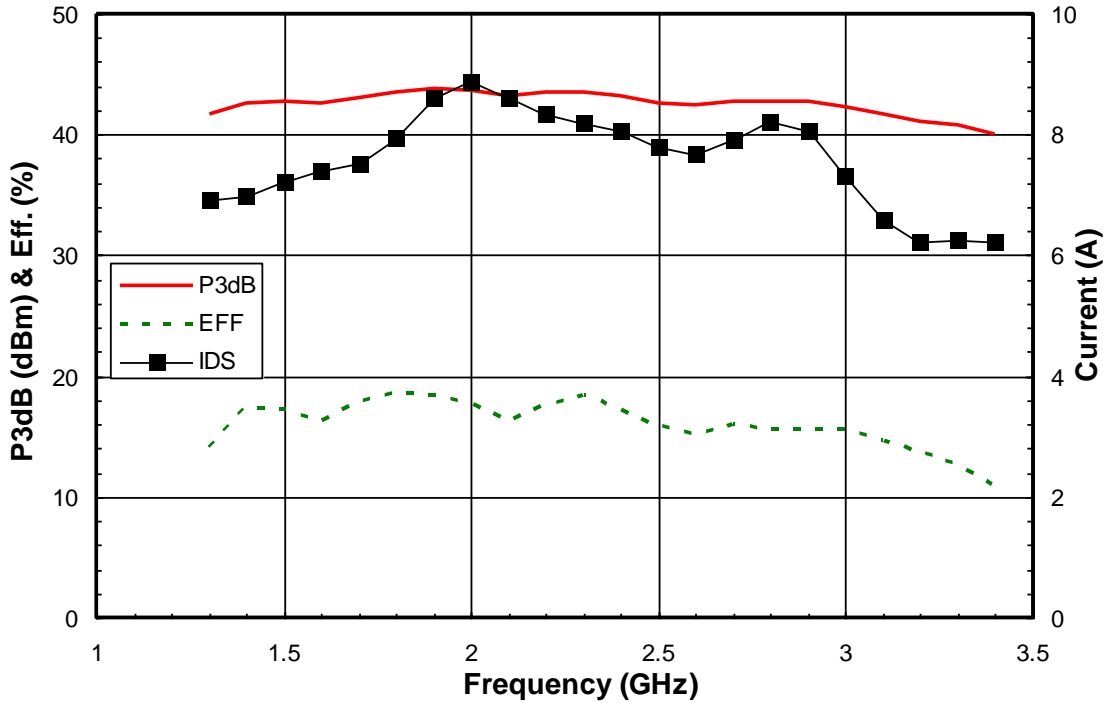
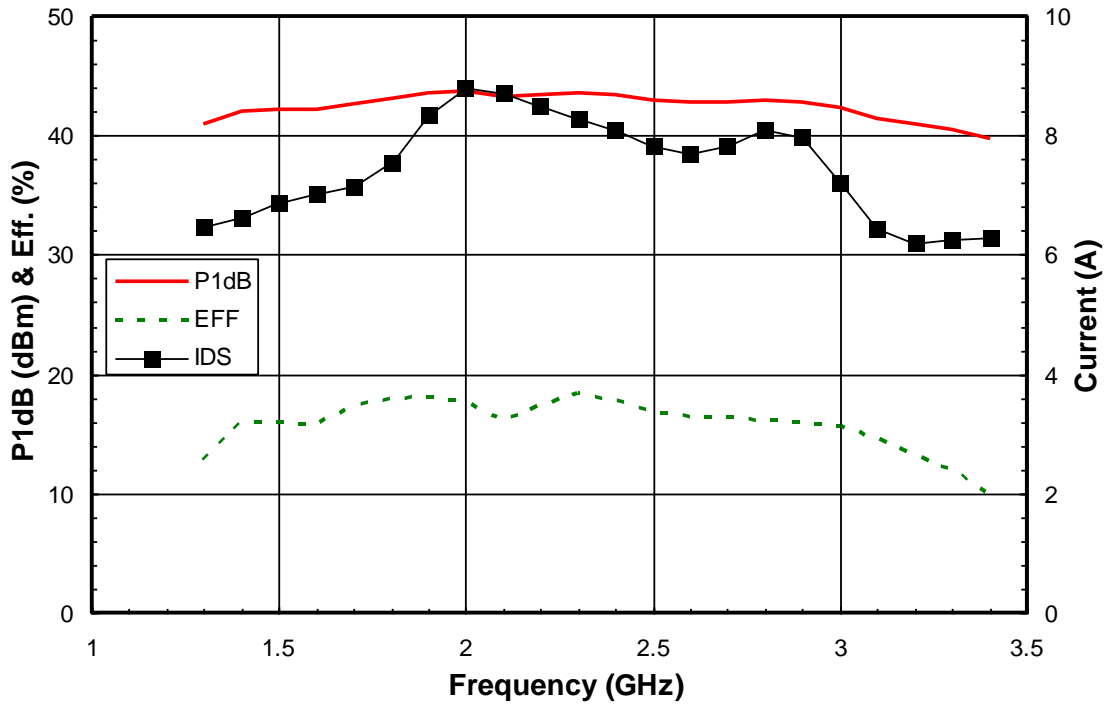
Parameter	Symbol	Rating
Supply voltage	$V_{\text{dd}}$	20 V
Continuous dissipation at room temperature	$P_t$	150 W
Operating ambient temp	$T_a$	-40°C to 85 °C
Storage temperature	$T_{\text{sto}}$	-60°C to +150°C

LINEAR DATA ( $V_{dd} = +15V$ ,  $I_{dq} = 6A$ ,  $T_a = 25^\circ C$ )

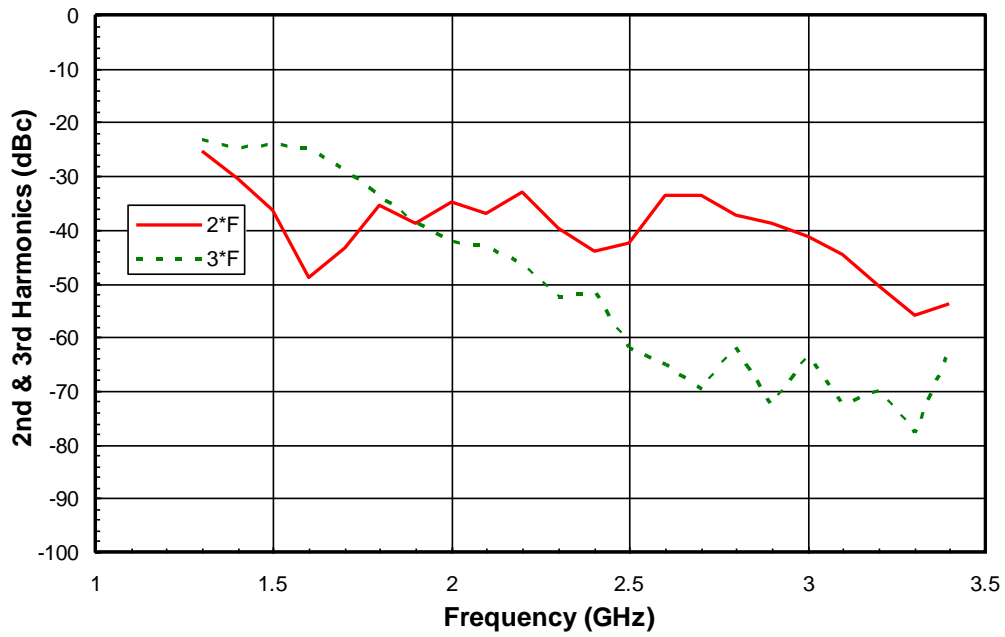


POWER DATA ( $V_{dd} = +15V$ ,  $I_{dq} = 6A$ ,  $T_a = 25^\circ C$ )

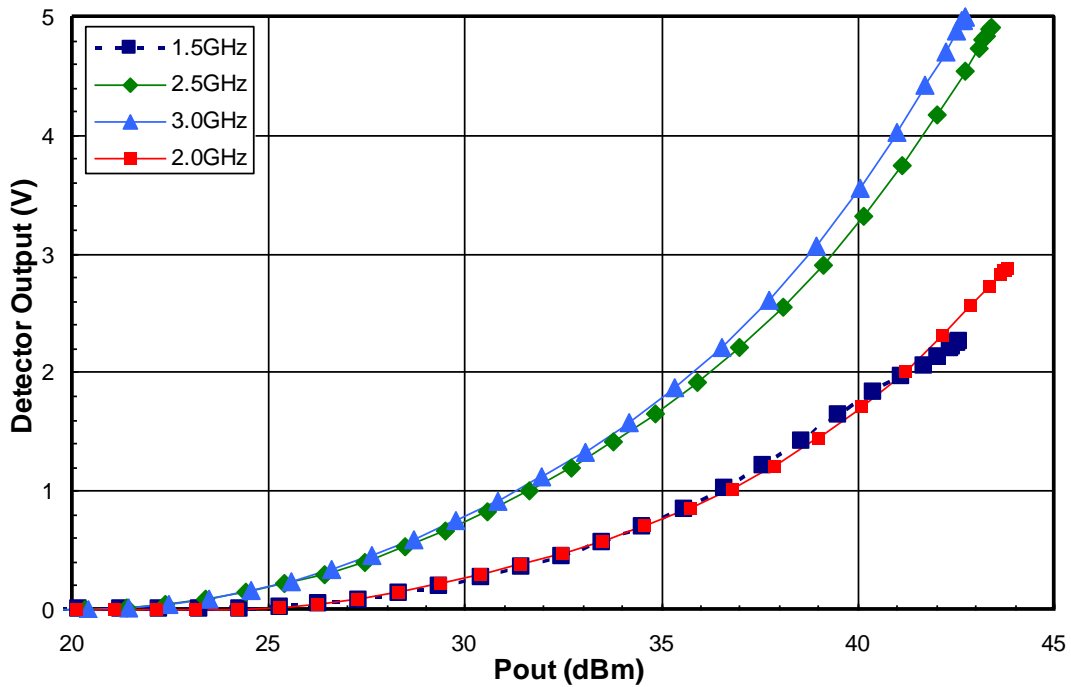
A) Output Power, Efficiency & Current at 1dB and 3dB Gain Compression



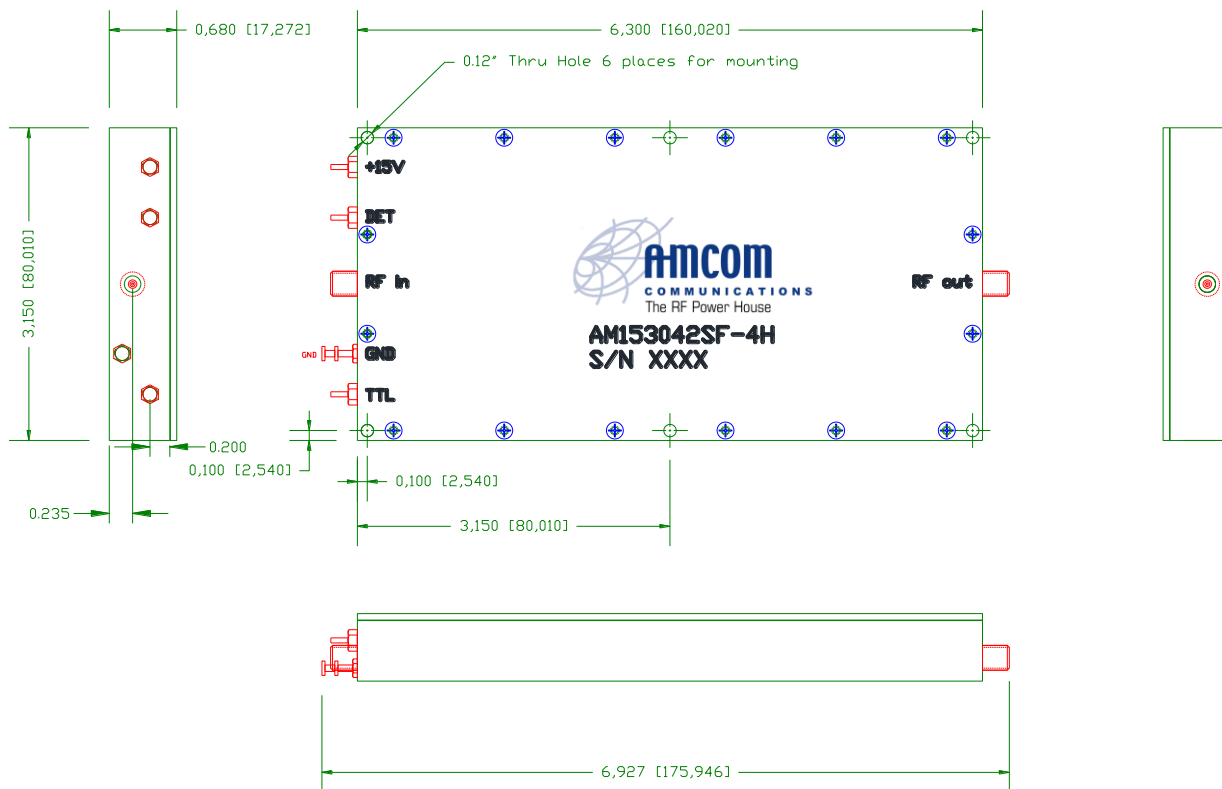
B) 2<sup>nd</sup> and 3<sup>rd</sup> Harmonics at 1dB Gain Compression



C) Detector Voltage versus Pout



PACKAGE OUTLINE



Note:

- 1- The top pin is +15V, Second pin is detector output. The 3rd pin is TTL logic, 0=ON, 1=OFF.
- 2- Use part # AM153042SF-4H-TTLoff for TTL logic disabled. Amplifier is on when the +15V is applied.