

## DESCRIPTION

AM153042SF-4H is a broadband High Power Amplifier designed for instrumentation, and communications applications. It operates from 1500 MHz to 3000 MHz and typically delivers more than 20 watts (43dBm) CW output power and 37 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 1500 to 3000 MHz
- High Gain and High Power,  $P_{\text{sat}} = 43\text{dBm}$ , Gain = 37dB
- +15 to +20V DC Single Bias
- Output power detector

## APPLICATIONS

- Instrumentation
- Broadband communication

## PERFORMANCE

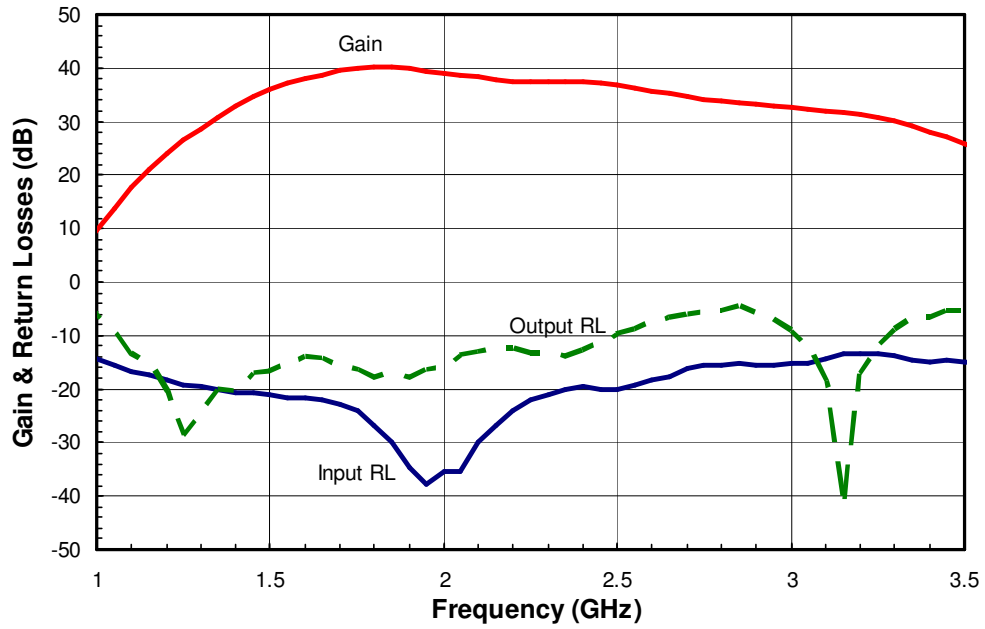
( $V_{\text{dd}} = +15\text{V}$ ,  $I_{\text{dq}} = 6\text{A}$ ,  $T_a = 25^\circ\text{C}$ )

Parameters	Minimum	Typical	Maximum
Frequency	1500 – 3000 MHz	1300 – 3400 MHz	
Small signal Gain	30 dB	37 dB	44 dB
Gain Variation		$\pm 3$ dB	$\pm 6$ dB
P1dB @ 1GHz	40 dBm	42 dBm (15W)	
Psat @ 1 GHz	41 dBm	43 dBm (20W)	
1GHz 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

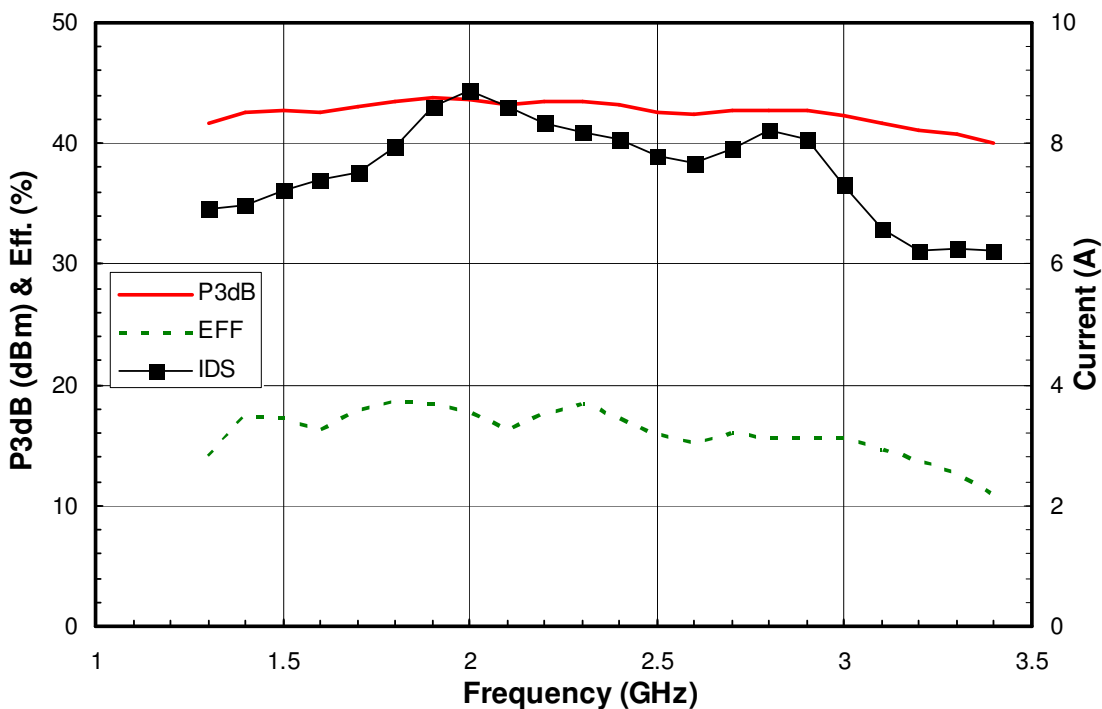
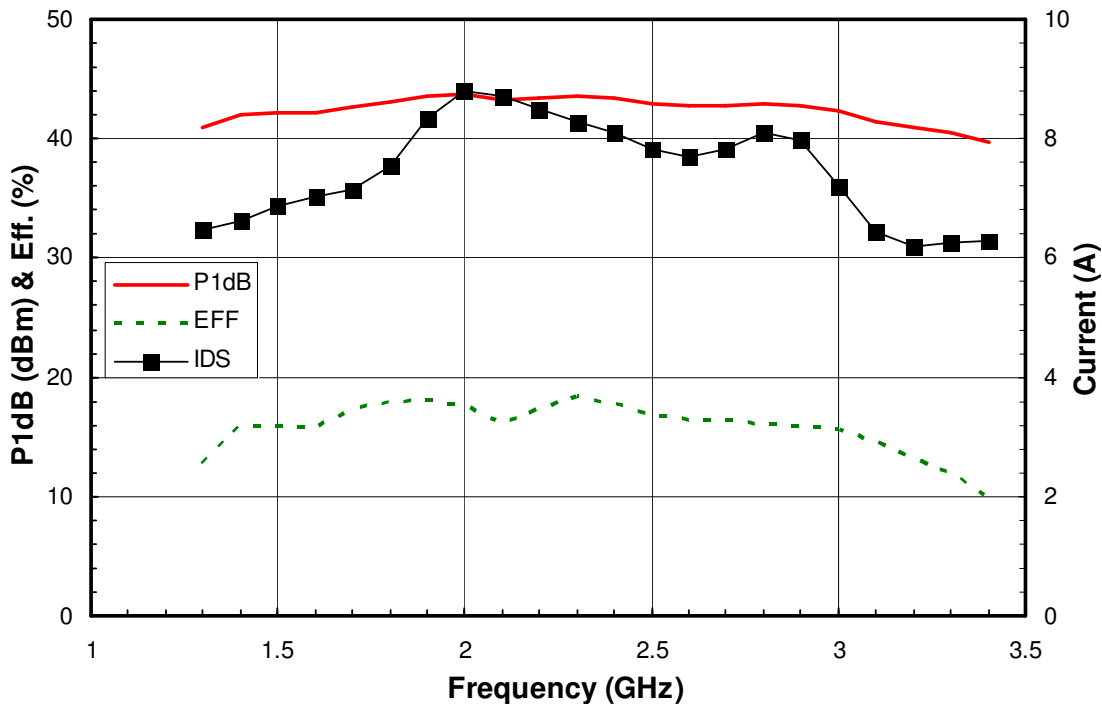
Parameter	Symbol	Rating
Supply voltage	$V_{\text{dd}}$	20 V
Continuous dissipation at room temperature	$P_t$	150 W
Operating ambient temp	$T_a$	-40°C to 85 °C
Storage temperature	$T_{\text{sto}}$	-60°C to +150°C

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

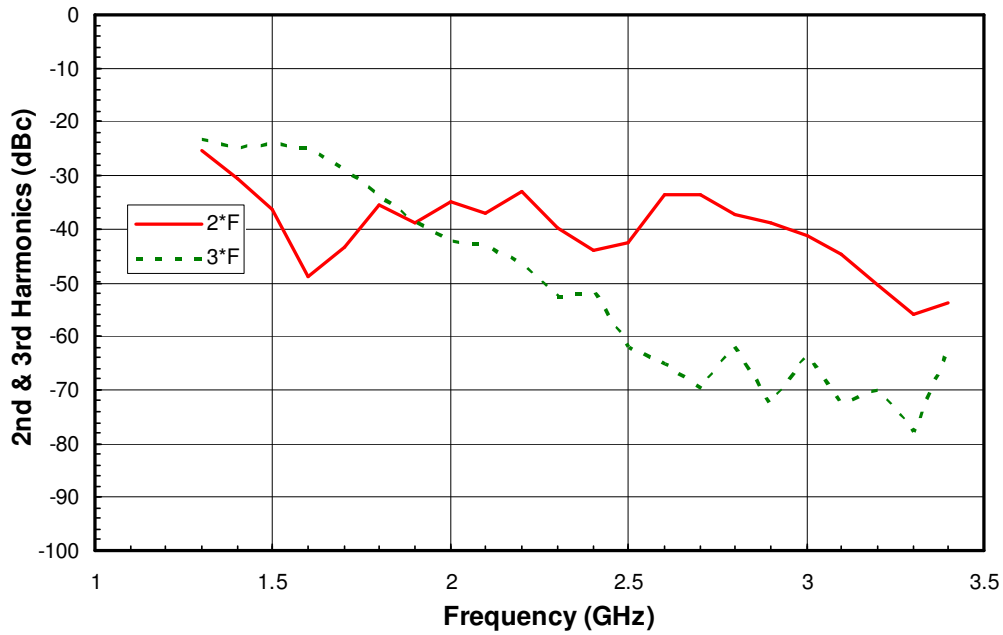


POWER DATA ( $V_{dd} = +15V$ ,  $I_{dq} = 6A$ ,  $T_a = 25^\circ C$ )

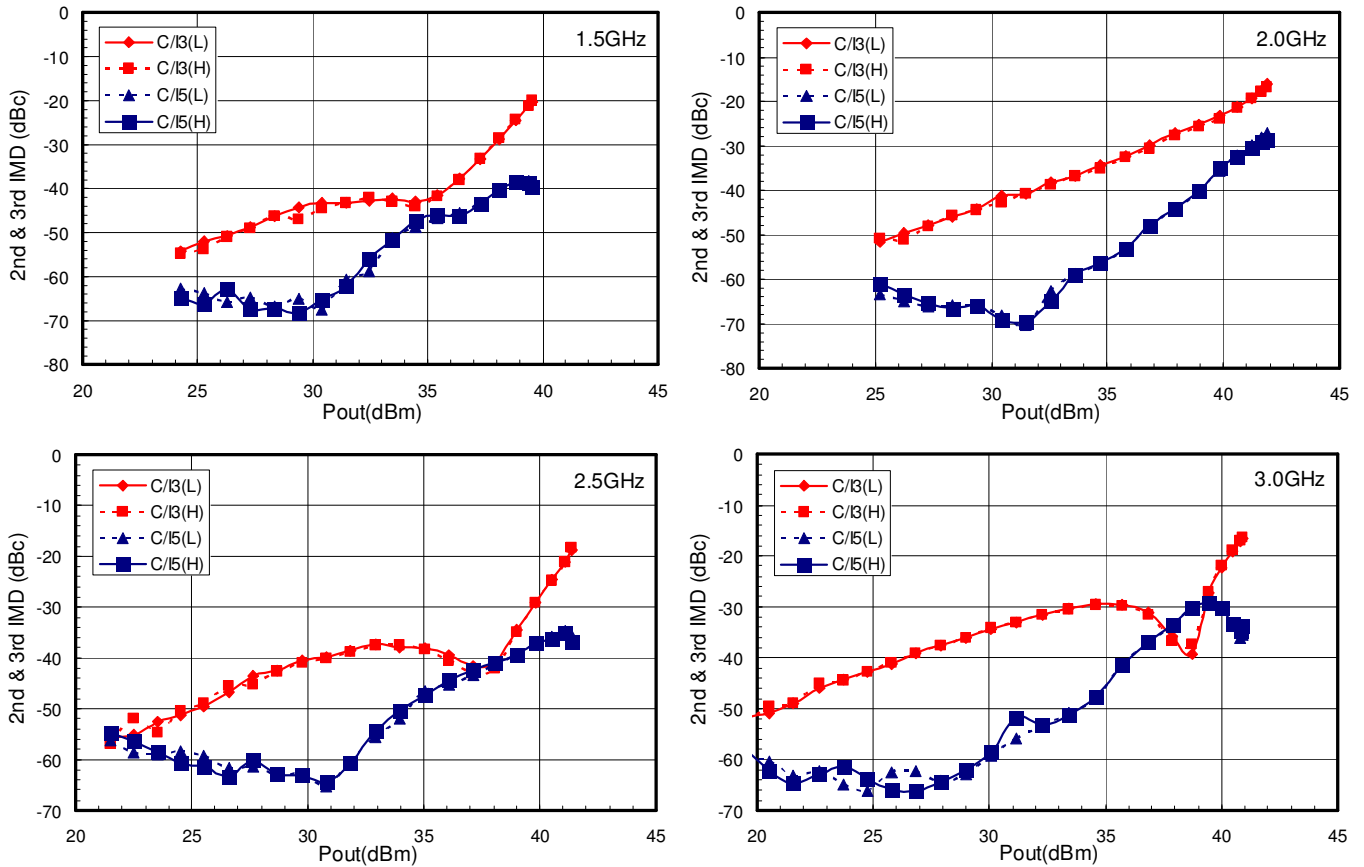
A) Output Power, Efficiency & Current at 1dB and 3dB Gain Compression

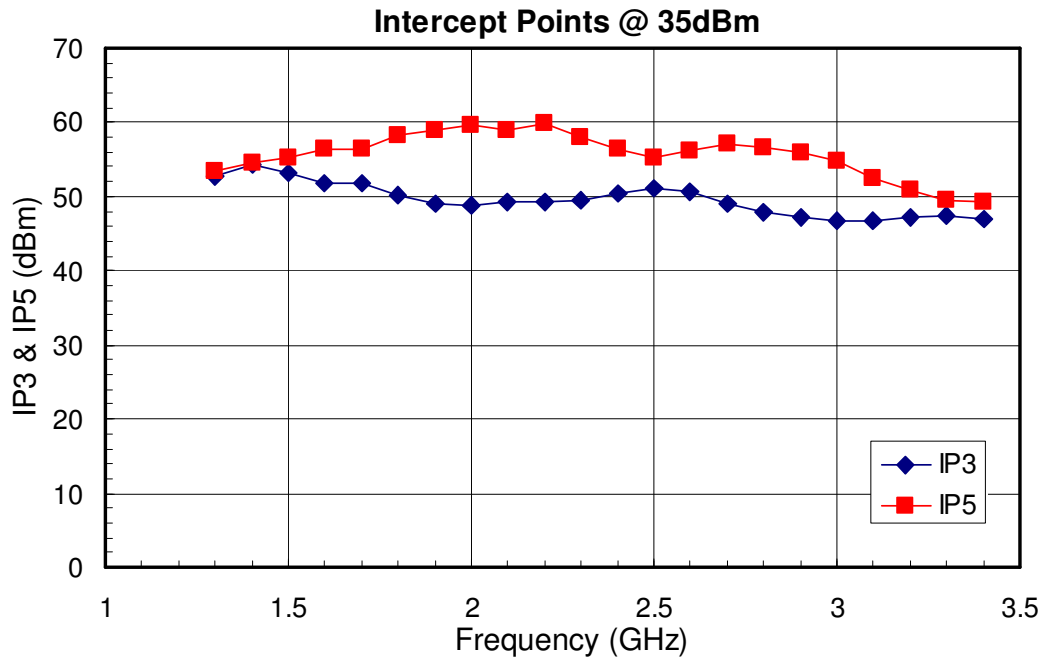


B) 2<sup>nd</sup> and 3<sup>rd</sup> Harmonics at 1dB Gain Compression

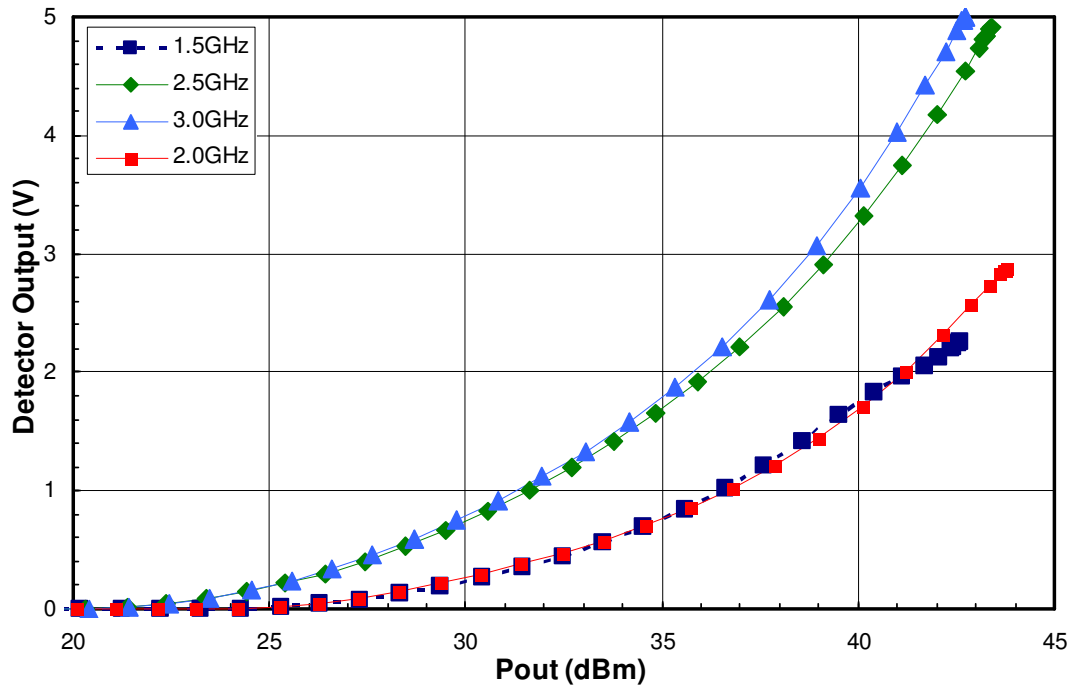


C) 2<sup>nd</sup> & 3<sup>rd</sup> Intermodulation Distortions





D) Detector Voltage versus Pout



PACKAGE OUTLINE

