



**Typical Characteristics  
for  
A-2G18G-30G-2N-13P**

**A-2G18G-30G-2R0N-13P is a high performance, high intercept point, multi-octave wide bandwidth, 50-ohm matched, ultra-low noise amplifier designed using state-of the art GaAs PHEMT devices. The amplifier is built using advance hybrid MIC techniques for reliability. Low input and output VSWR across the band allow the unit to be easily integrated into systems. The amplifier is built in a compact aluminum alloy housing with 4 mounting holes to facilitate balance mounting to improve contact for heat transfer between chassis and heat sink.**



Designed By: Hay Sai

Tested & Reported By: Jake Heisler

August 29, 2017



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# Typical Characteristics for A-2G18G-30G-2N-13P

## OUTLINE DRAWING

### DESCRIPTION

PMI MODEL: A-2G18G-30G-2R0N-13P is a high performance, high intercept point, multi-octave wide bandwidth, 50-ohm matched, ultra low noise amplifier designed using state-of-the-art GaAs PHEMT devices. The amplifier is built using advance hybrid MIC techniques for reliability. Low input and output VSWR across the band allow the unit to be easily integrated into systems. The amplifier is built in a compact aluminum alloy housing with 4 mounting holes to facilitate balance mounting to improve contact for heat transfer between chassis and heat sink.

#### Features:

- Low noise broadband operation
- Single positive power supply
- Internal DC regulated voltage
- Internal reverse polarity protection
- Field replaceable SMA connectors

### SPECIFICATIONS AT +25°C UNLESS OTHERWISE SPECIFIED

- Frequency Range: ----- 2.0 GHz to 18.0 GHz
- Gain: ----- 30 dB Min., 33 dB Max.
- Gain Flatness vs Frequency: ----- ±1.5 dB Max. Peak to Peak
- Noise Figure: ----- 2.0 dB Max..
- VSWR Input (DC-Coupled): ----- 2.0 : 1 Max.
- VSWR Input (AC-Coupled): ----- 2.5 : 1 Max.
- VSWR Output: ----- 2.0 : 1 Max.
- P1dB Out: ----- 13 dBm Min.
- IP3 Out: ----- 23 dBm Typ.
- IP2 Out: ----- 33 dBm Typ.
- Allowable Maximum Input Power: ----- 13 dBm Max.
- DC Power Supply: ----- +12V @ 200 mA Nom.
- Connectors (In/Out): ----- SMA Female
- Finish: ----- Gold Plated

### ENVIRONMENTAL RATINGS

- Temperature: ----- -40 °C to +85 °C (Operating)  
-54 °C to +95 °C (Non-Operating)
- HUMIDITY: ----- RH 45 to 85% Max.

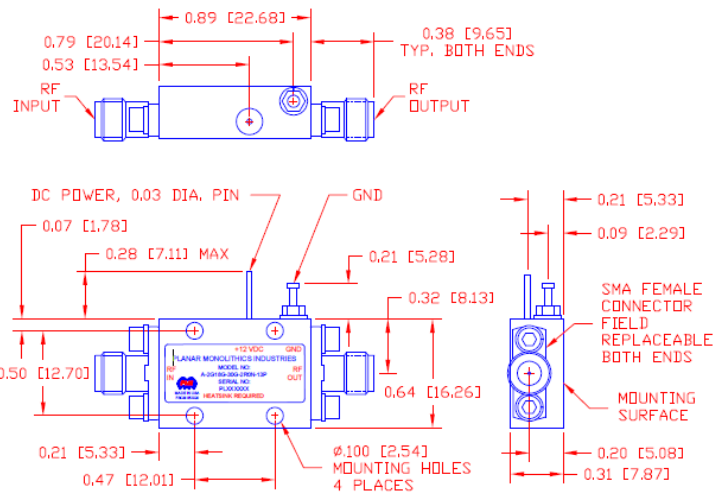
NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE  
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

ALL DIMENSIONS  
ARE IN INCHES (mm)  
TOLERANCES (INCHES):  
X.XX ±0.010  
X.XXX ±0.005

PMI CONFIDENTIAL AND PROPRIETARY

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	INITIAL RELEASE	7/14/2017	HAI SAY

### MECHANICAL OUTLINE



### PLANAR MONOLITHICS INDUSTRIES, INC.

7311-F GROVE ROAD  
FREDERICK, MARYLAND 21704 USA  
TEL: (301)-662-5019, FAX: (301)-662-1731  
WEB: www.pmi-rf.com, EMAIL: sales@pmi-rf.com  
ISO 9001 CERTIFIED



APPROVALS		DATE	TITLE		
DRAWN:	HAI SAY	02/14/17	PRODUCT FEATURE		
CHECKED:	HAI SAY	02/14/17	LOW NOISE AMPLIFIER: 2.0 TO 18.0 GHz		
ISSUED:			A-2G18G-30G-2R0N-13P		
SIZE:	A	FROM NO:	DWG NO:	REV:	
		05XQ00	27033191	A	
SCALE:	N:S		SHEET:	1 OF 1	



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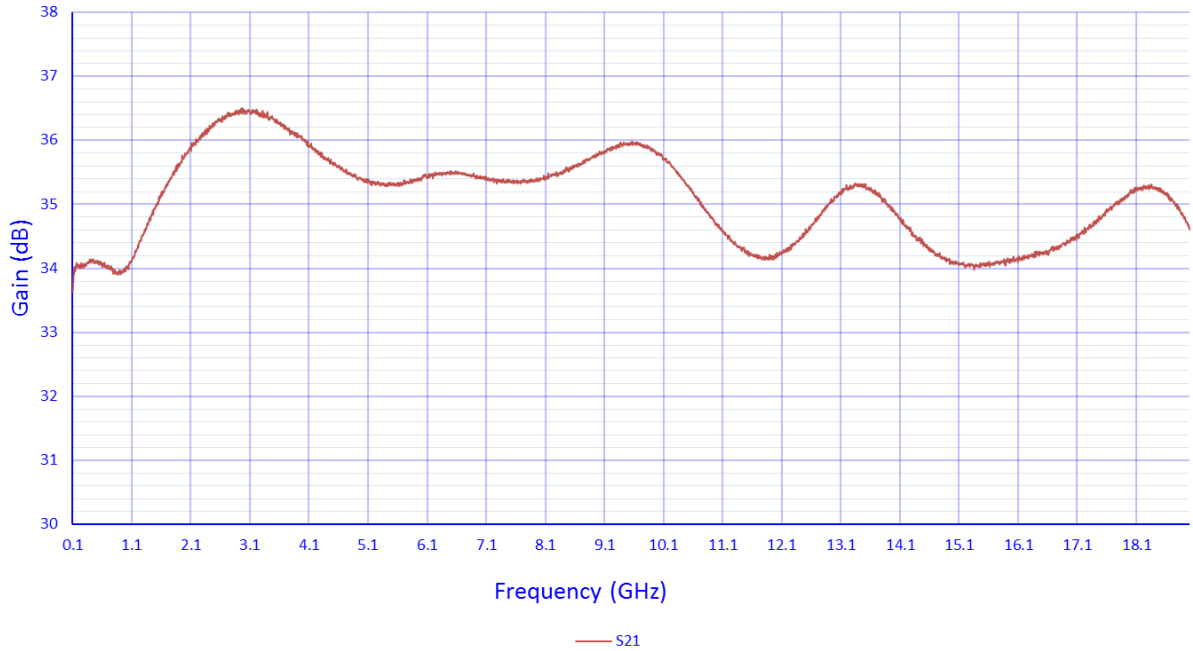
**SUMMARY DATA**

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE TESTED @ +25°C	TEST RESULTS
1	Frequency Range	0.1 GHz TO 19 GHz	0.1 GHz TO 19 GHz
2	Small Signal Gain		36.33 dB MAX
			33.76 dB MIN
			See Plot
3	GAIN @ 0.1 GHz	30 dB MIN	33.78 dB
	GAIN @ 1 GHz		33.83 dB
	GAIN @ 2 GHz		35.63 dB
	GAIN @ 3 GHz		36.3 dB
	GAIN @ 4 GHz		35.96 dB
	GAIN @ 5 GHz		35.41 dB
	GAIN @ 6 GHz		35.55 dB
	GAIN @ 7 GHz		35.51 dB
	GAIN @ 8 GHz		35.5 dB
	GAIN @ 9 GHz		35.94 dB
	GAIN @ 10 GHz		35.99 dB
	GAIN @ 11 GHz		34.79 dB
	GAIN @ 12 GHz		34.32 dB
	GAIN @ 13 GHz		35.25 dB
	GAIN @ 14 GHz		34.99 dB
	GAIN @ 15 GHz		34.21 dB
	GAIN @ 16 GHz		34.31 dB
GAIN @ 17 GHz	34.6 dB		
GAIN @ 18 GHz	35.31 dB		
GAIN @ 19 GHz	35.09 dB		
3	Noise Figure	2 dB MAX @ 2-18GHz	4.28 dB @ < 0.5 GHz
			4.28 dB @ 0.1-19 GHz
			2.87 dB @ 0.5-19 GHz
			1.89 dB @ 2-18 GHz
			See Plot
4	P1dB Compression Point	13 dBm MIN	0 dBm See Plot
5	Gain Flatness	±1.5 dB MAX	±1.29 dB 0.1-19 GHz
			±1.29 dB 0.5-19 GHz
			±1.18 dB 2-18 GHz
			See Plot
6	VSWR	2:1 MAX	1.98
			See Plot

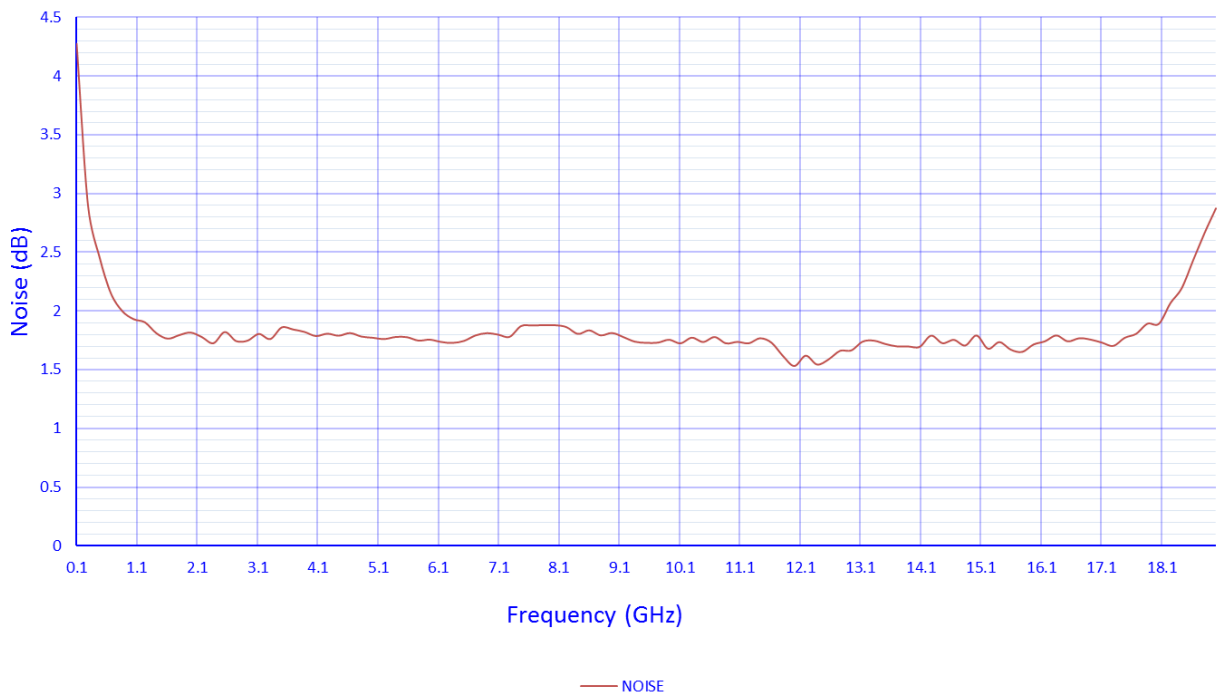


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### Small Signal Gain



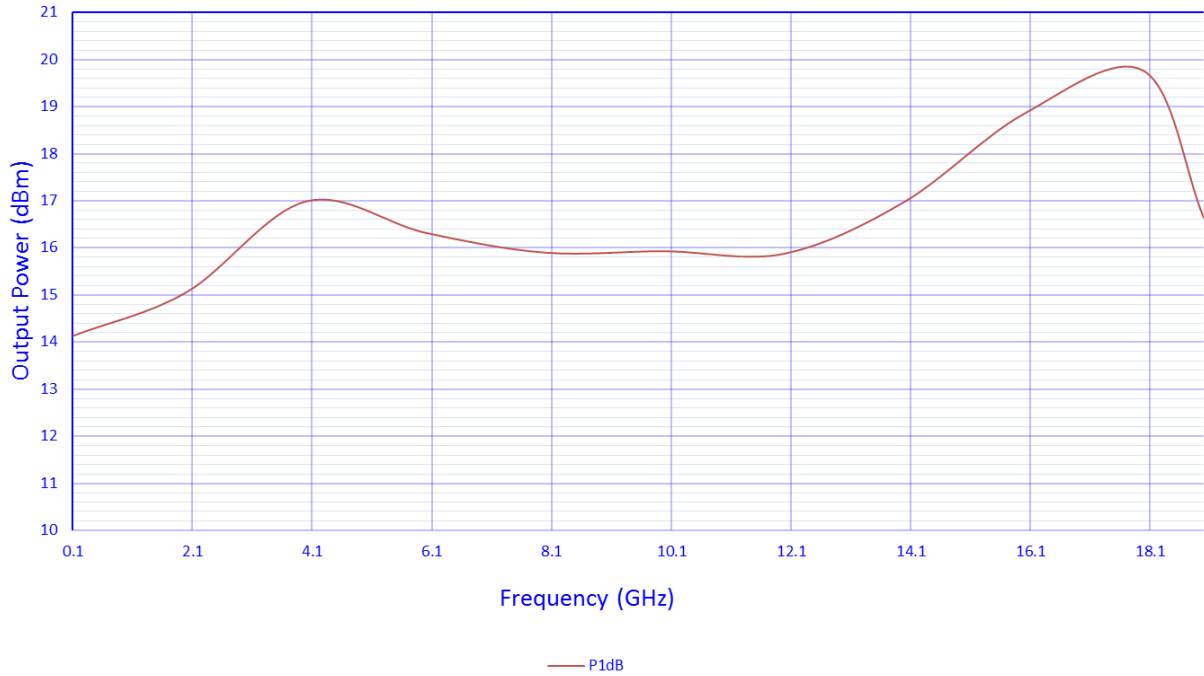
### Noise Figure



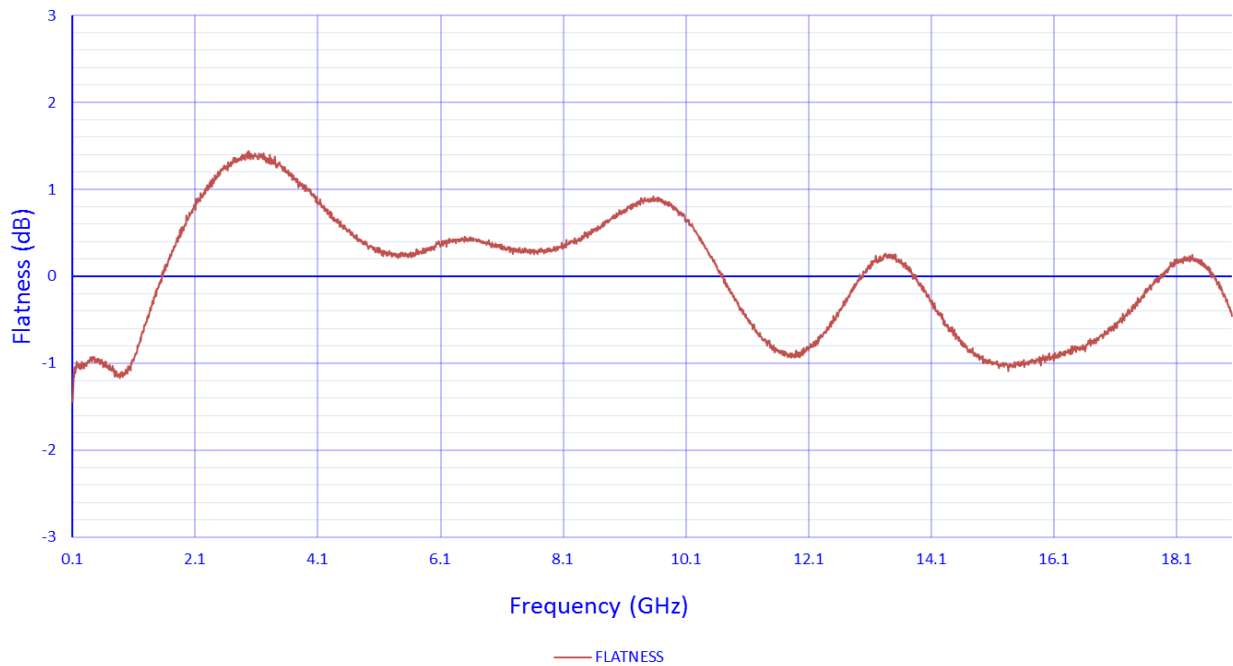


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### P1dB



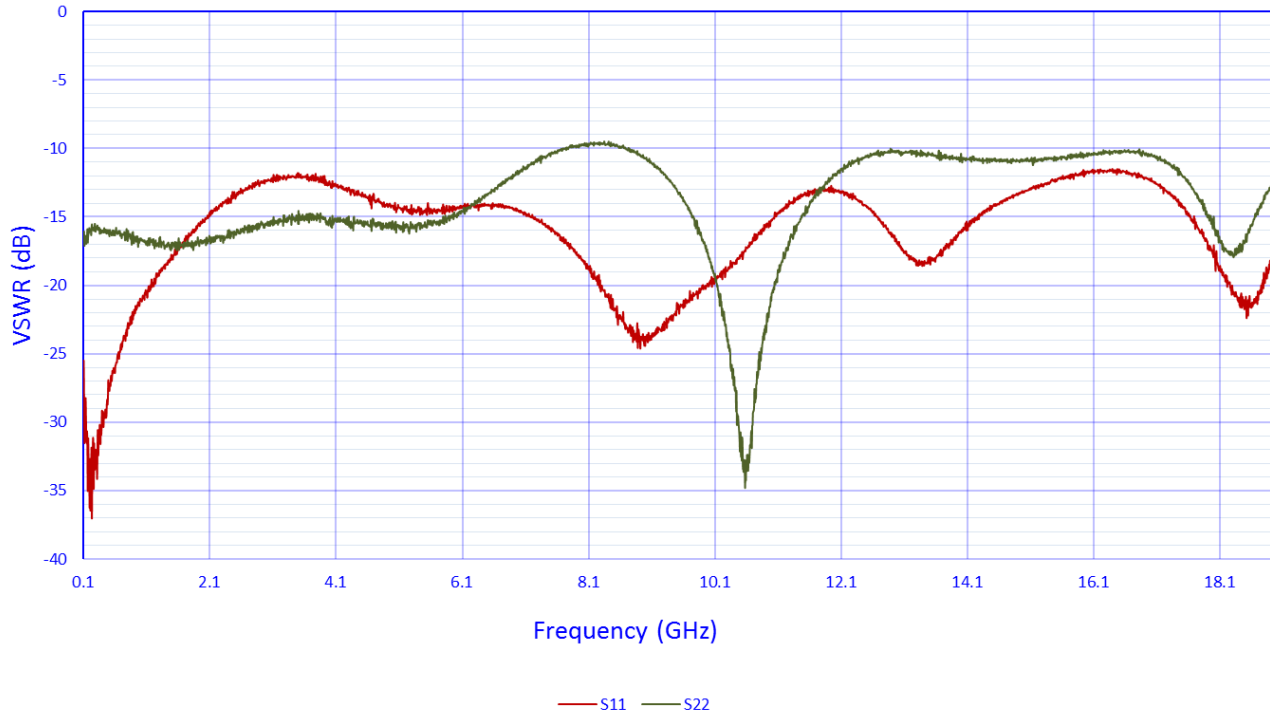
### Gain Flatness





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VSWR





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## TESTING OVER TEMPERATURE

