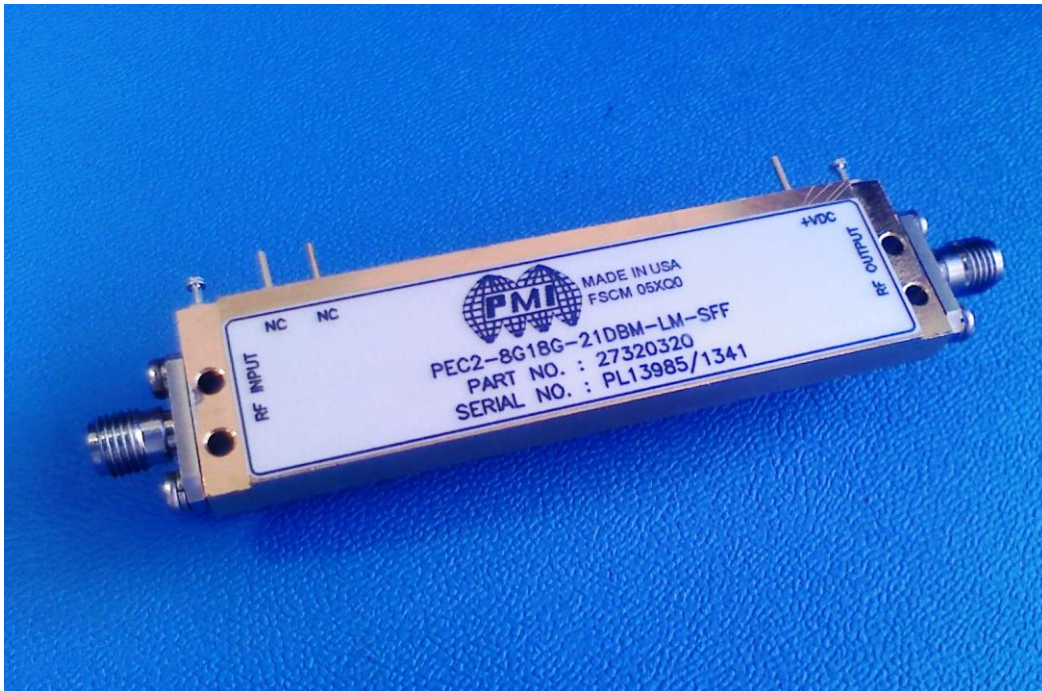




Typical Characteristics On PEC2-8G18G-21DBM-LM-SFF

PMI Model No. PEC2-8G18G-21DBM-LM-SFF is a 8.0 to 18.0 GHz limiting amplifier that provides a limited output power level of +21dBm to +25dBm for an input power range of -50 to +10dBm CW. This model has output power level versus frequency compensation such that the limited output power has a flat frequency response. Supplied in a small housing measuring only 2.98" X 0.78" X 0.26"



October 15th, 2013
Designed By: Kevin Mason
Reported & Tested By:
Edwin Benson / Ken Schwarz



Typical Characteristics On PEC2-8G18G-21DBM-LM-SFF

ZONE	REV.	DESCRIPTION	DATE	APPROVED
1		ORIGINAL RELEASE	07/06/18	

MECHANICAL OUTLINE

DESCRIPTION

PMI MODEL PEC2-8G18G-21DBM-LM-SFF IS AN 8.0 TO 18.0 GHz LIMITING AMPLIFIER THAT PROVIDES A NOMINAL OUTPUT POWER LEVEL OF +20.0dBm FOR AN INPUT POWER RANGE OF -50 TO +10dBm CW. THIS MODEL HAS OUTPUT POWER LEVEL VERSUS FREQUENCY COMPENSATION SUCH THAT THE LIMITED OUTPUT POWER HAS A FLAT FREQUENCY RESPONSE. SUPPLIED IN A SMALL HOUSING MEASURING ONLY 2.98" X 0.78" X 0.36".

THIS MODEL PROVIDES THE FOLLOWING PERFORMANCE.

SPECIFICATIONS

- FREQUENCY RANGE: 8.0 TO 18.0 GHz
- INPUT POWER: -50 TO +10dBm CW
- OUTPUT POWER: ±2.0dBm NOMINAL
- OUTPUT POWER VARIATION: ±2.0dBm MAX. OVER OPERATING TEMPERATURE RANGE
- OP1dB: 4dBm BELOW Psat TYPICAL
- 2ND HARMONIC REJECTION: -8dBc @ Psat
- 3RD ORDER INTERCEPT POINT: 35dBm TYP
- VSWR INPUT/OUTPUT: 2.0:1 MAX
- MAXIMUM INPUT POWER: +17dBm CW
- DC VOLTAGE SUPPLY: +15VDC
- DC CURRENT DRAW: 700 mA MAX
- CONNECTORS: SMA(F)
- OPERATING TEMPERATURE: -20 TO +70° C
- FINISH: GOLD PLATED
- SIZE: 2.98" X 0.78" X 0.36"

Dimensions shown in drawing:
 Overall length: 2.620, 2.420, 2.660, 2.820, 2.98
 Input connector offset: 0.037, 0.450, 0.200
 Output connector offset: 0.78, 0.325, 0.112, 0.26
 Spacer plate length: 2.980, 0.100
 Mounting hole offset: 0.360, 0.325
 Mounting hole diameter: Ø0.100 THRU (4 PLCS)

ENVIRONMENTAL RATINGS

- TEMPERATURE: -55°C TO +85°C (OPERATING)
-65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202F, METHOD 1039 COND. B
- SOLDER: MIL-STD-202F, METHOD 2138 COND. B
- BRISTLES: MIL-STD-202F, METHOD 2040 COND. B
- ALKALI: MIL-STD-202F, METHOD 2041 COND. A
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 1079 COND. A

NOTES: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

PMI CONFIDENTIAL AND PROPRIETARY

PLANAR MONOLITHICS INDUSTRIES, INC.

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 FREDERICK, MARYLAND 21704 USA
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 WEBSITE: www.pmi-rf.com
 E-MAIL: sales@pmi-rf.com
 ISO 9001 CERTIFIED

APPROVALS	DATE	PRODUCT FEATURE	REV.
AW/S	07/06/18	PEC2-8G18G-21DBM-LM-SFF	1
CHECKED		SIZE / PGM NO.	
ISSUED		A / 05X00	
		DWG NO. 27020321	
		SCALE N:S	SHEET 1 OF 1



Typical Characteristics On PEC2-8G18G-21DBM-LM-SFF

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS
1	Frequency Range:	8.0 GHz to 18.0 GHz	8.0 GHz to 18.0 GHz See Plots
2	Input Power (CW):	-45 dBm to +10 dBm CW +17 dBm CW Max.	Pass
3	OP1dB:	4dBm Below Psat Typical	19.6dBm Typ.
4	Saturated Output Power: Output Power Variation:	+20 dBm Nominal +/- 2dBm Max. Over Temperature Range	22dBm Typ. See Plots
5	Input VSWR:	2.0:1 Max	Input 1.77:1 See Plot
6	3 rd Order Intercept Point:	35 dBm Goal	34.92dBm Typ. See Plot
7	2 nd Harmonic Rejection:	8dBc @ Psat	18.62dBc See Plot
8	DC Supply:	700 mA Max. @ +15V to +/- 25V Reverse & Over Voltage Protection	410mA

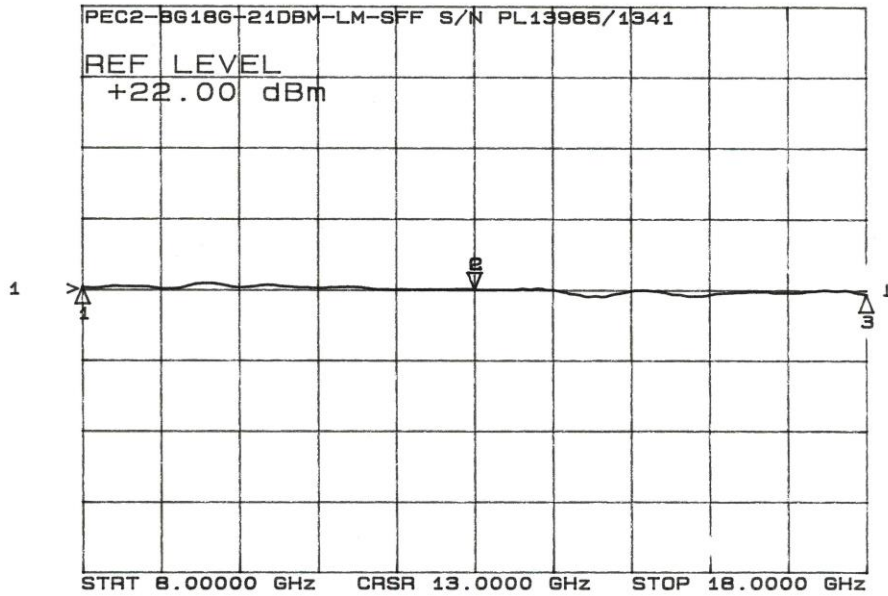


Typical Characteristics On PEC2-8G18G-21DBM-LM-SFF

Saturated Output Power @ -45dBm

CH1: A +22.12 dBm
10.0 dB/ REF 22.00 dBm

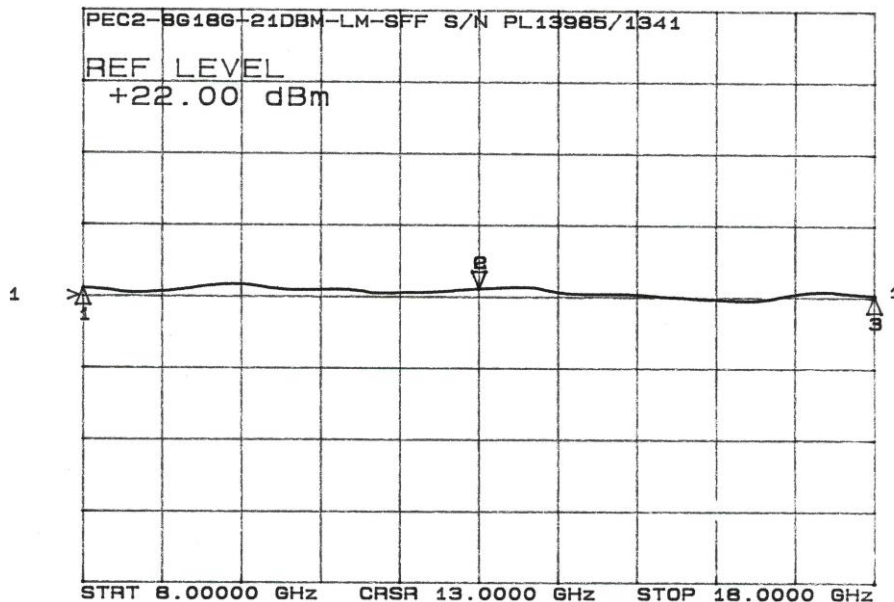
1/P PWR = -45 dBm



Saturated Output Power @ -35dBm

CH1: A +23.23 dBm
10.0 dB/ REF 22.00 dBm

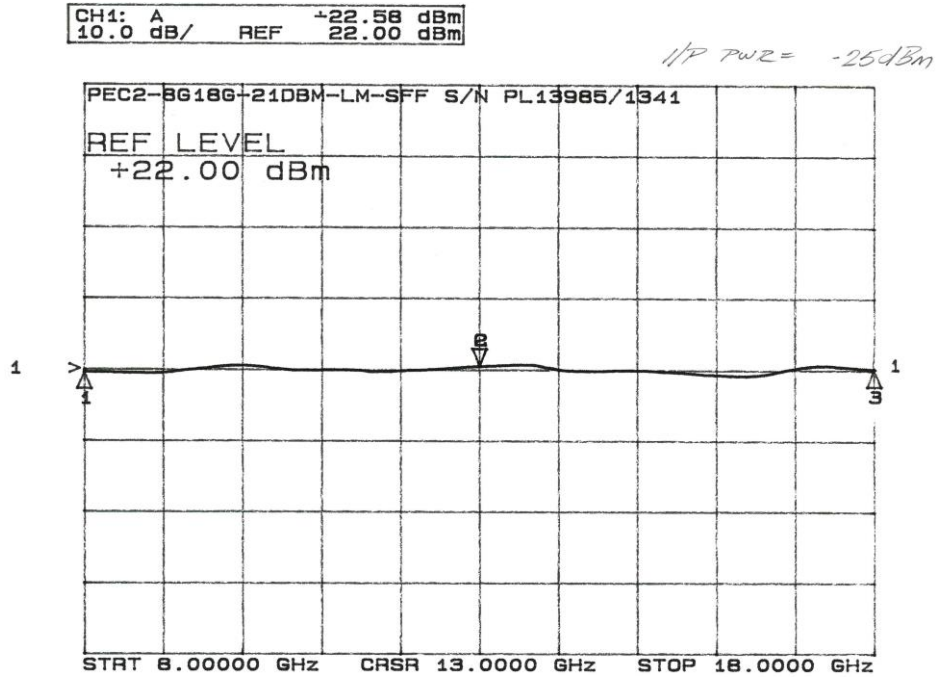
1/P PWR = -35 dBm



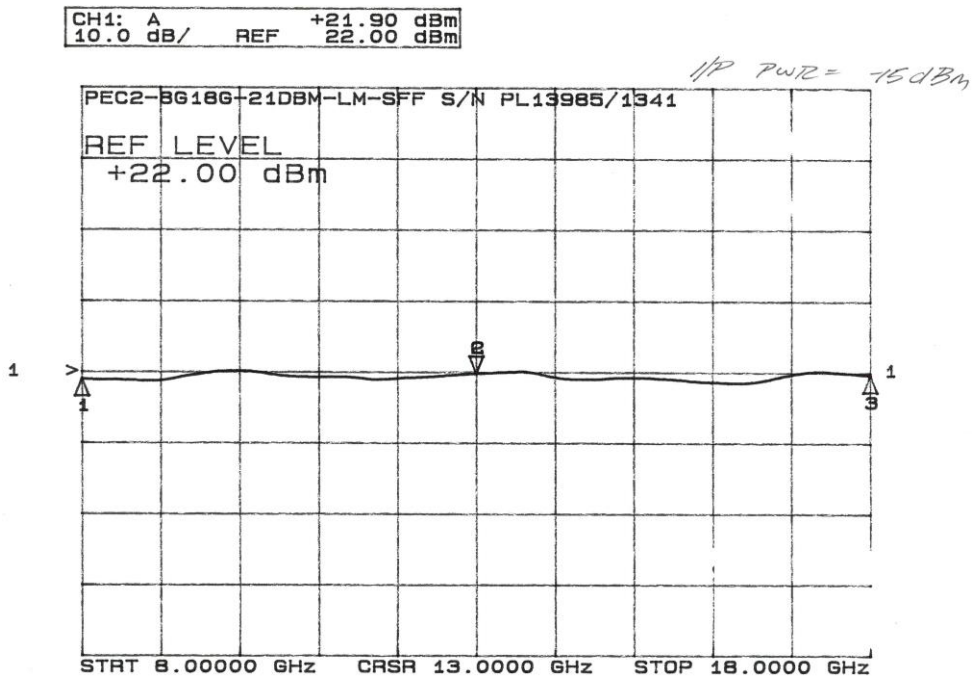


Typical Characteristics On PEC2-8G18G-21DBM-LM-SFF

Saturated Output Power @ -25dBm



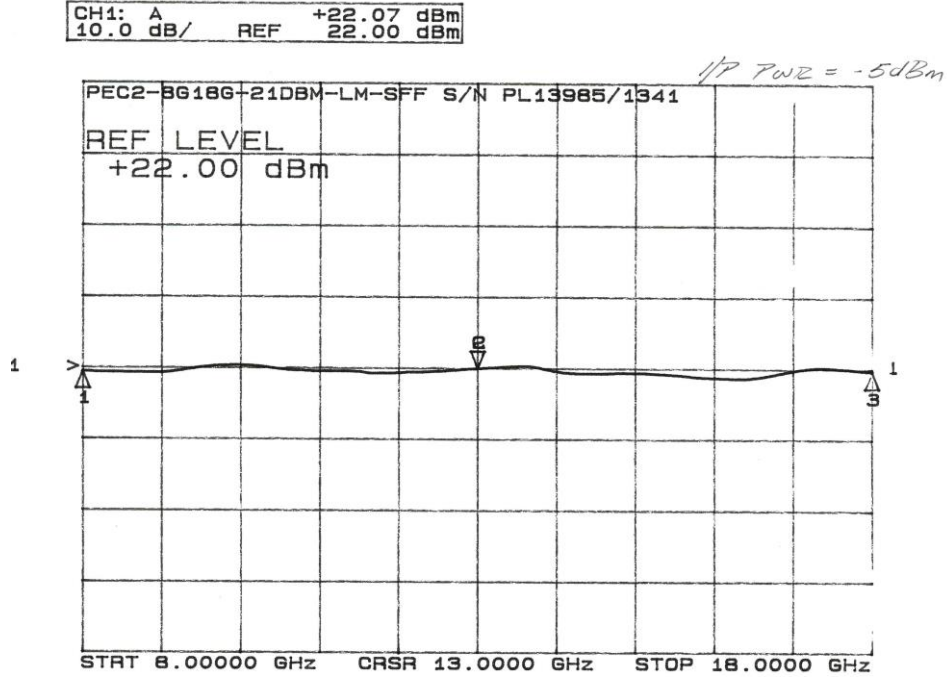
Saturated Output Power @ -15dBm



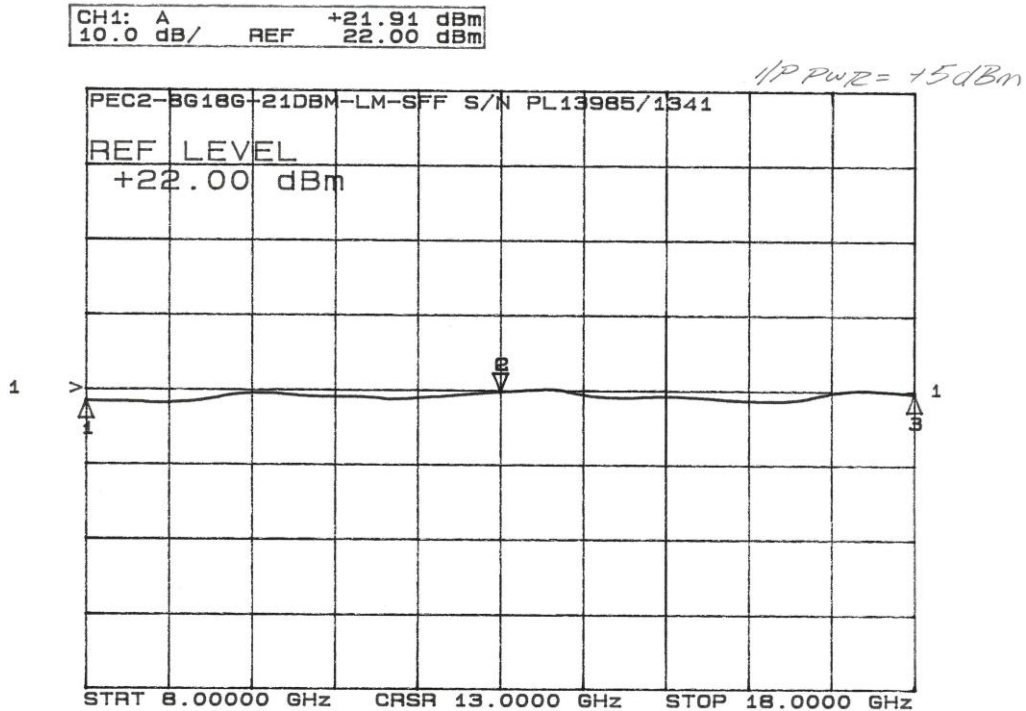


Typical Characteristics On PEC2-8G18G-21DBM-LM-SFF

Saturated Output Power @ -5dBm



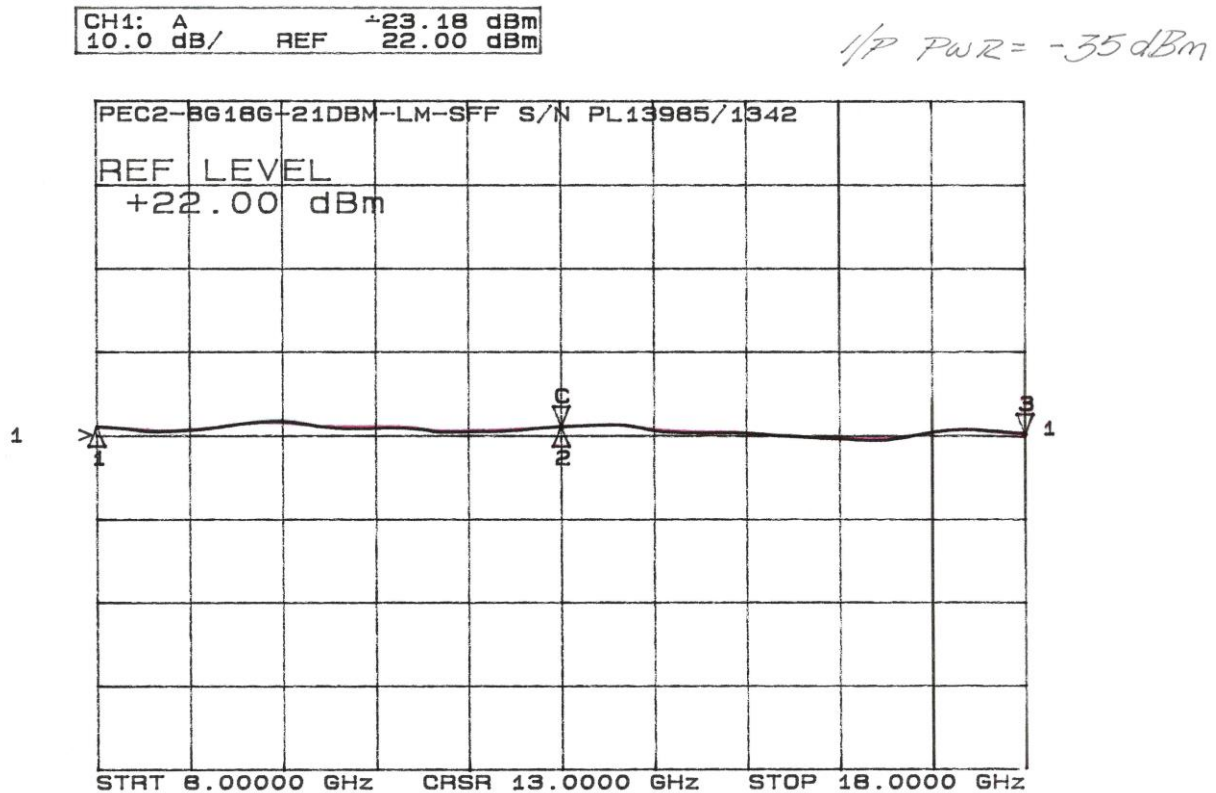
Saturated Output Power @ 5dBm





Typical Characteristics On PEC2-8G18G-21DBM-LM-SFF

Limiting VS Temperature



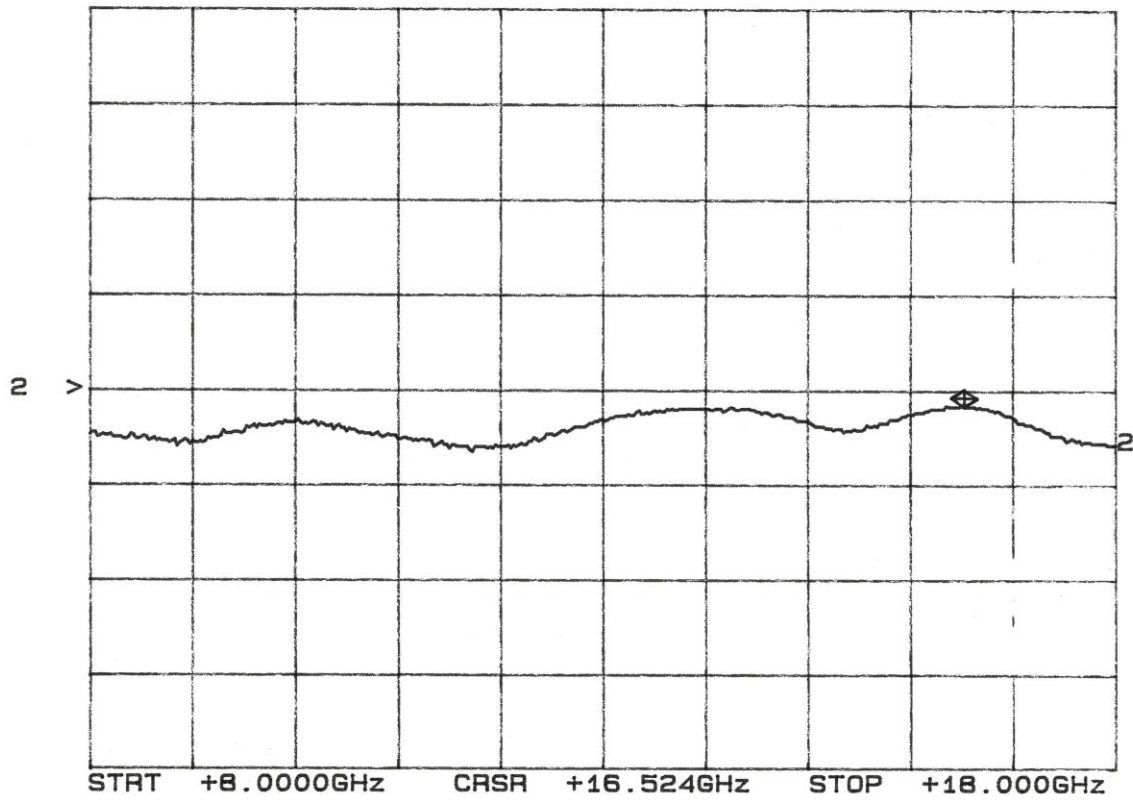
Virtually No change from +25C to -20C and +70C



Typical Characteristics On PEC2-8G18G-21DBM-LM-SFF

Input VSWR

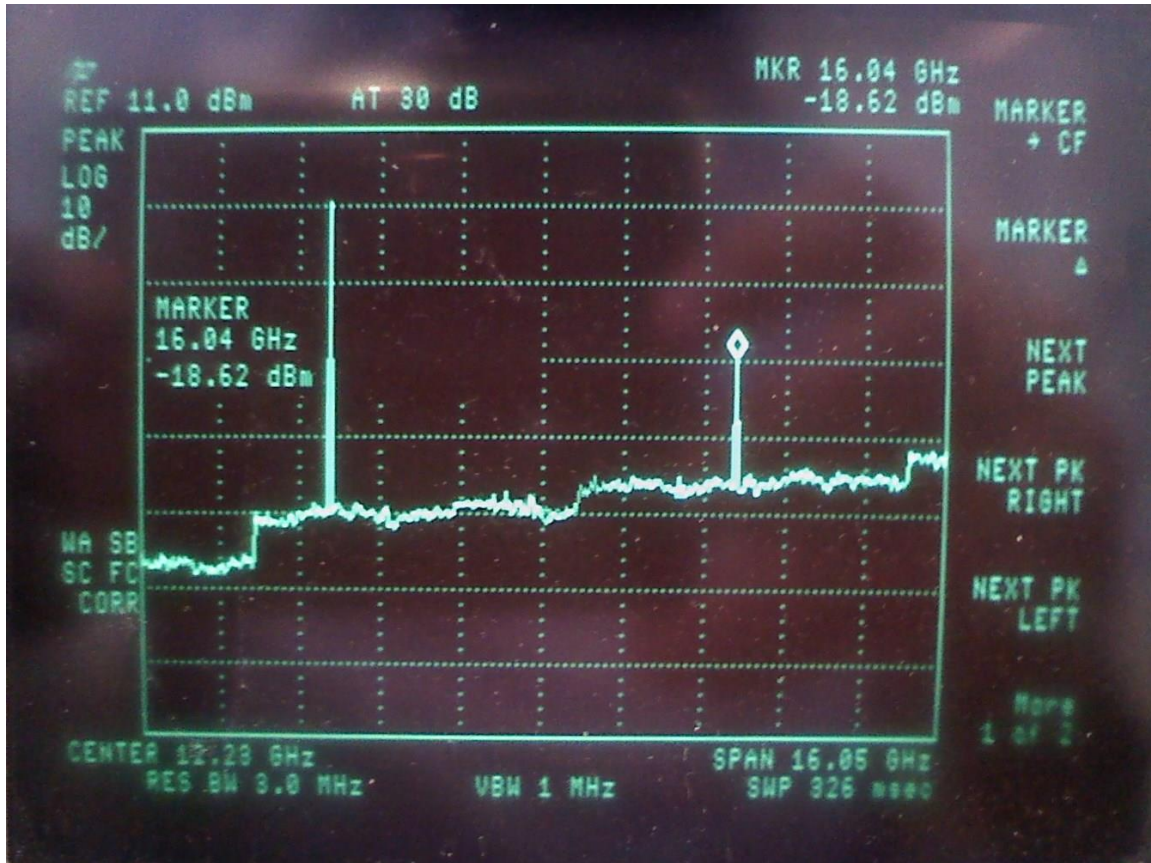
CH2: B -M - 11.13 dB
10.0 dB/ REF - 9.50 dB





Typical Characteristics On PEC2-8G18G-21DBM-LM-SFF

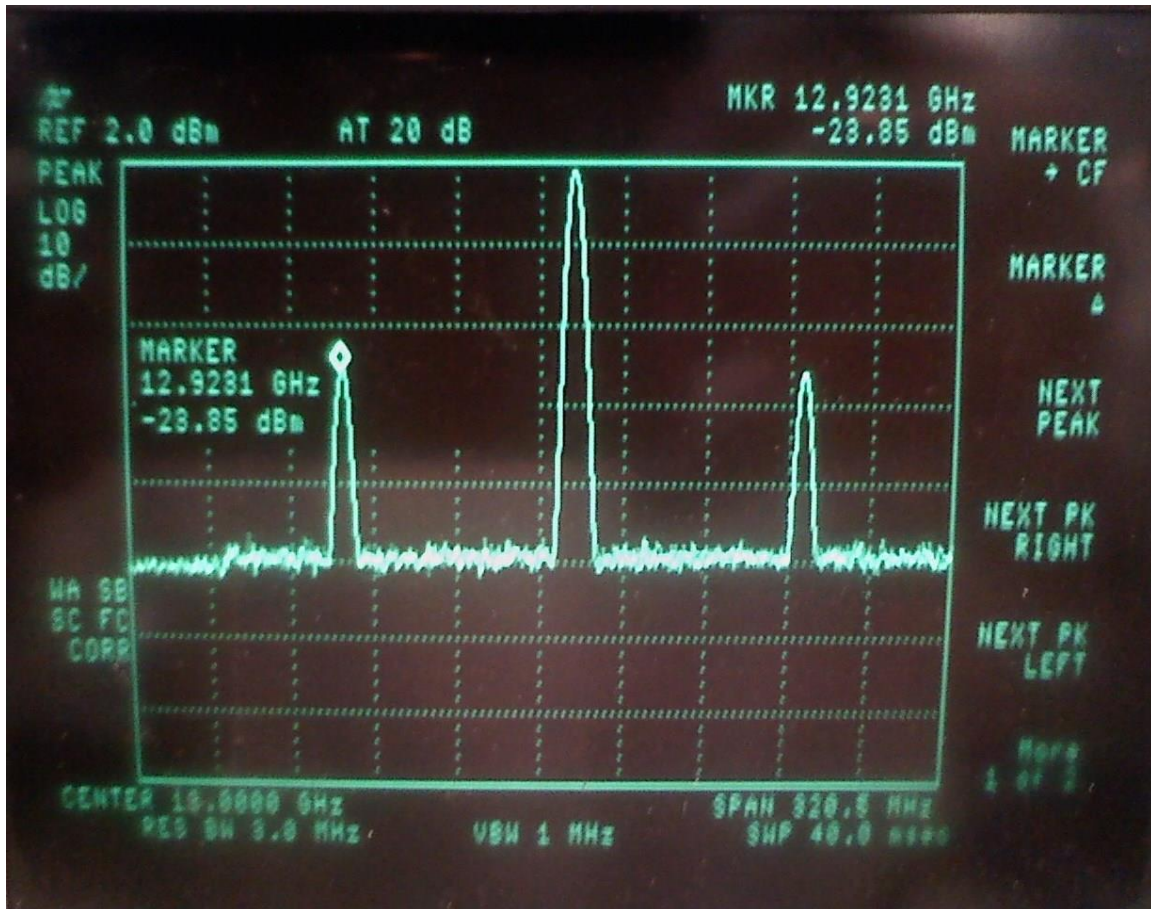
2nd Harmonic @ 8GHz





Typical Characteristics On PEC2-8G18G-21DBM-LM-SFF

OIP3 @ 10 GHz



$$\text{OIP3} = \text{Pout} + \text{dBc}/2 + 34.92\text{dBm} = 22 + (25.85/2)$$