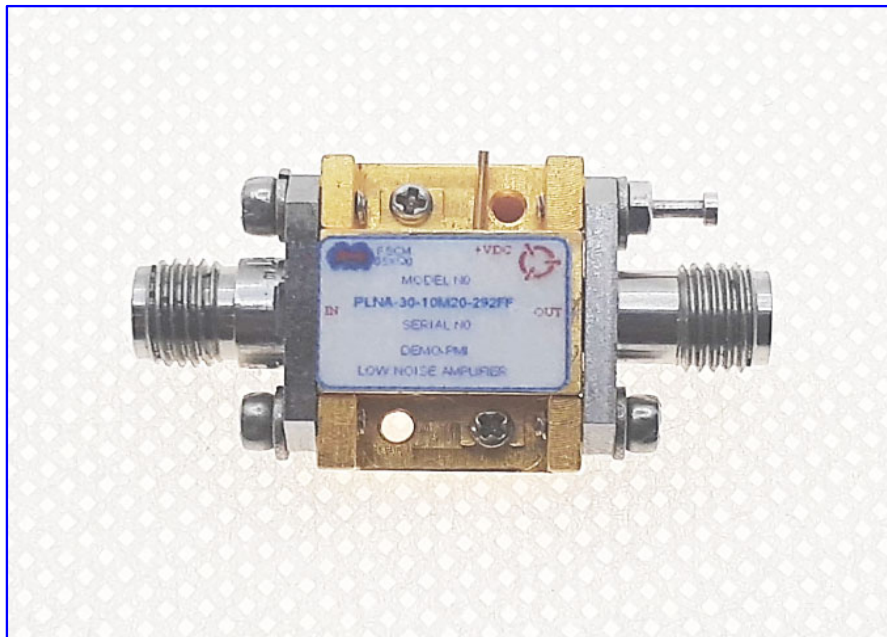




Typical Characteristics ON PLNA-30-10M20G-292FF

PMI MODEL NUMBER: PLNA-30-10M20-292FF IS A VERY LOW NOISE AMPLIFIER WITH WORKING FREQUENCY RANGE OF 10MHZ TO 20GHZ. THIS AMPLIFIER IS SUPPLIED IN A HOUSING THAT CAN BE USED AS A 2.92MM SURFACE MOUNT OR CONNECTORIZED COMPONENT.



February 17, 2021

Designed By:

**Dr. Ashok Gorwara
Sebastian Palacio
Alfredo Lopez**

Tested and Reported By:

Alfredo Lopez



Typical Characteristics ON PLNA-30-10M20G-292FF

Outline Drawing

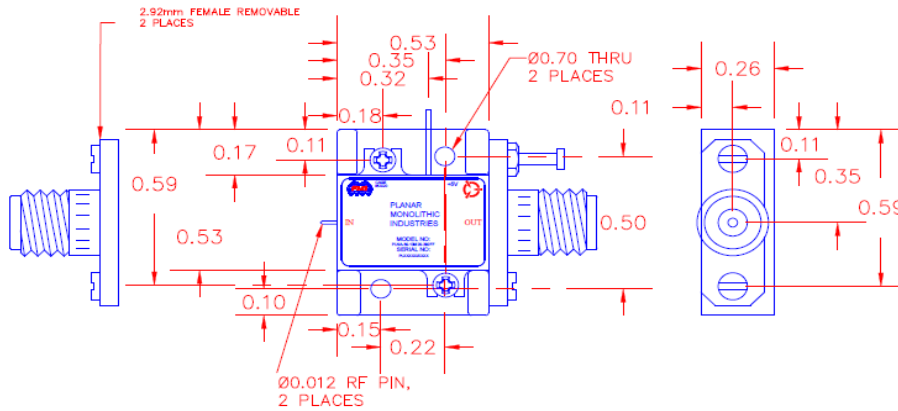
DESCRIPTION:

PMI MODEL NUMBER: PLNA-30-10M20-292FF IS A VERY LOW NOISE AMPLIFIER WITH WORKING FREQUENCY RANGE OF 10MHZ TO 20GHZ. THIS AMPLIFIER IS SUPPLIED IN A HOUSING THAT CAN BE USED AS A 2.92MM SURFACE MOUNT OR CONNECTORIZED COMPONENT.

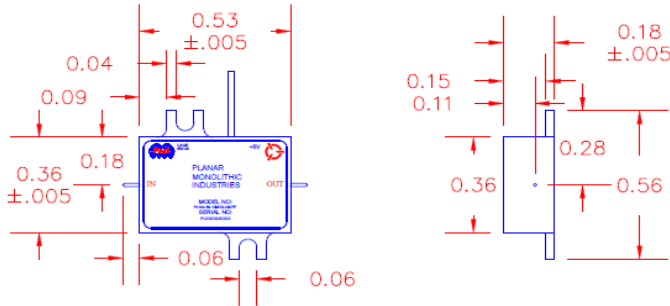
REVISIONS				APPROVED	REVISED
ZONE	REV	DESCRIPTION	DATE		
	A1	ORIGINAL RELEASE	02/12/21		
	B1	ECN # 22-0003	01/20/22		
	B2	ECN # 23-0006	01/05/23		

MECHANICAL OUTLINE

HOUSING WITH CARRIER



HOUSING WITHOUT CARRIER (SURFACE MOUNT)



PMI CONFIDENTIAL AND PROPRIETARY

ALL DIMENSIONS ARE IN INCHES
TOLERANCES:
X.XX ±0.020
X.XXX ±0.010

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E-MAIL: sales@pmi-rf.com
ISO 9001 CERTIFIED



APPROVALS		DATE	TITLE		
DRAWN		01/12/2021	PRODUCT FEATURE PLNA-30-10M20-292FF		
REDRAWN	ALC		SIZE A	PSCM NO. 27041260	REV. B2
ISSUED			SCALE N:S	SHEET 2 OF 2	

Specifications will vary over operating temperature.

MIL-STD-883 Screening Available

ISSUED	SCALE	SHEET
	N:S	1 OF 2



Typical Characteristics ON PLNA-30-10M20G-292FF

Mechanical Outline

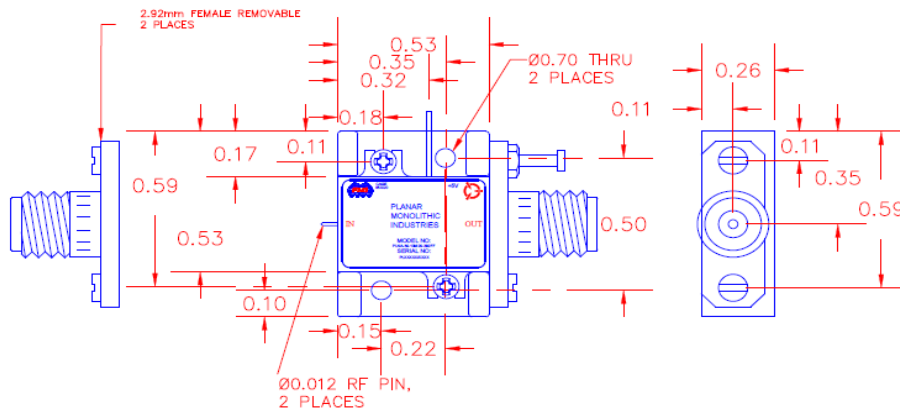
DESCRIPTION:

PMI MODEL NUMBER: PLNA-30-10M20-292FF IS A VERY LOW NOISE AMPLIFIER WITH WORKING FREQUENCY RANGE OF 10MHZ TO 20GHZ. THIS AMPLIFIER IS SUPPLIED IN A HOUSING THAT CAN BE USED AS A 2.92MM SURFACE MOUNT OR CONNECTORIZED COMPONENT.

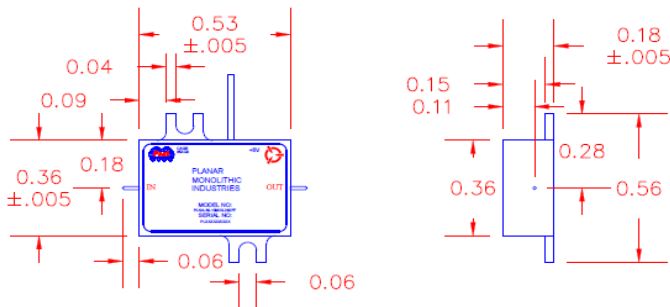
		REVISIONS		
ZONE	REV	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	02/12/21	
	B1	ECN # 22-0003	01/20/22	
	B2	ECN # 23-0006	01/05/23	

MECHANICAL OUTLINE

HOUSING WITH CARRIER



HOUSING WITHOUT CARRIER (SURFACE MOUNT)



PMI CONFIDENTIAL AND PROPRIETARY

ALL DIMENSIONS ARE IN INCHES
 TOLERANCES:
 XXX .00.020
 XXXX .00.010

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APPROVALS		DATE	TITLE		
DRAWN		01/12/2021	PRODUCT FEATURE PLNA-30-10M20-292FF		
REDRAWN	ALC		SIZE A	PSCM NO.	DWG NO. 27041260
ISSUED			SCALE N:S		SHEET 2 OF 2



Typical Characteristics ON PLNA-30-10M20G-292FF

Technical Specifications

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	Test Results			QA QC
			+25°C	-40°C	+85°C	
1	Frequency Range:	10MHz to 20GHz	10MHz to 20GHz	10MHz to 20GHz	10MHz to 20GHz	
2	Gain:	+26 dB Min. (10 MHz to 18 GHz)	30.75 dB Max.	31.41 dB Max.	30.4 dB Max.	
			26.8 dB Min.	27.23 dB Min.	26.57 dB Min.	
		+28 Min. (18 to 20 GHz)	31.4 dB Max.	32.46 dB Max.	30.89 dB Max.	
			28.98 dB Min.	30.25 dB Min.	28.41 dB Min.	
		See Graphs	See Graphs	See Graphs		
3	Gain Flatness:	±2.2 dB Max. (10MHz to 18 GHz)	1.98 dB (±)	2.09 dB (±)	1.91 dB (±)	
		±3.0 dB Max. (10MHz to 20 GHz) at any Operating Temp.	2.3 dB (±)	2.62 dB (±)	2.16 dB (±)	
			See Graphs	See Graphs	See Graphs	
4	Noise Figure:	3 dB Typ. (20MHz - 0.5GHz)	3.27 dB	3.27 dB	3.27 dB	
		2.5 dB Typ. (0.5 to 18GHz)	2.44 dB	2.44 dB	2.44 dB	
		3.3 dB Typ. (18 to 20 GHz)	3.12 dB	3.12 dB	3.12 dB	
		See Note	See Graphs	See Graphs	See Graphs	
5	OP1dB:	+14 dBm Typ.(10 MHz to 18 GHz)	14.34 dBm	14.4 dBm	13.91 dBm	
		+13 dBm Typ. (18 to 22 GHz)	13.15 dBm	13.63 dBm	12.37 dBm	
			See Graphs	See Graphs	See Graphs	
6	P _{sat} :	+15 dBm Typ. (10 MHz to 18 GHz)	14.95 dBm	15.26 dBm	14.44 dBm	
		+14 dBm Typ. (18 to 20 GHz)	14.04 dBm	14.36 dBm	13.51 dBm	
			See Graphs	See Graphs	See Graphs	
7	OIP3	+25 dBm Typ. (10MHz to 18 GHz)	28.07 dBm	28.07 dBm	28.07 dBm	
		+23 dBm Typ. (18 to 20 GHz)	23 dBm	23 dBm	23 dBm	
			See Plots	See Plots	See Plots	
8	Second Harmonic	Second harmonic -30dBm Input Power 70 dBc Typ.	75.67 dBc Max - 63.5 dBc Min	75.67 dBc Max - 63.5 dBc Min	75.67 dBc Max - 63.5 dBc Min	
		Second harmonic at P1dB 12 dBc Typ.	15.33 dBc Max - 10.93 dBc Min	15.33 dBc Max - 10.93 dBc Min	15.33 dBc Max - 10.93 dBc Min	
		Second harmonic at +5dBm Over P1dB 12 dBc Typ.	11.38 dBc Max - 9.8 dBc Min	11.38 dBc Max - 9.8 dBc Min	11.38 dBc Max - 9.8 dBc Min	
		Second harmonic at +10dBm Over P1dB 12 dBc Typ.	11.94 dBc Max - 9.9 dBc Min	11.94 dBc Max - 9.9 dBc Min	11.94 dBc Max - 9.9 dBc Min	
		Second harmonic at +15dBm Over P1dB 12 dBc Typ.	11.94 dBc Max - 9.87 dBc Min	11.94 dBc Max - 9.87 dBc Min	11.94 dBc Max - 9.87 dBc Min	
		See Graphs	See Graphs			
9	VSWR Input:	2.0:1 Max. (10MHz to 18GHz)	1.94 :1	1.92 :1	1.94 :1	
		2.2:1 Typ. (18GHz to 20GHz)	2.13 :1	2.42 :1	2.03 :1	
			See Graphs	See Graphs	See Graphs	
10	VSWR Output:	2.1:1 Max. (10MHz to 18GHz)	1.98 :1	2.13 :1	1.92 :1	
		2.4:1 Typ. (18GHz to 20GHz)	2.42 :1	2.63 :1	2.36 :1	
			See Graphs	See Graphs	See Graphs	
11	Reverse Isolation:	36 dB Min. (10 MHz to 18 GHz)	37.16 dB	37.03 dB	37.11 dB	
		35 dB Min. (18 to 20 GHz)	36.67 dB	36.06 dB	36.91 dB	
			See Graphs	See Graphs	See Graphs	
12	DC Supply:	+5 VDC @ 120 mA Max	+5 VDC @ 110 mA	+5 VDC @ 108 mA	+5 VDC @ 118 mA	

120 MHz (180°)

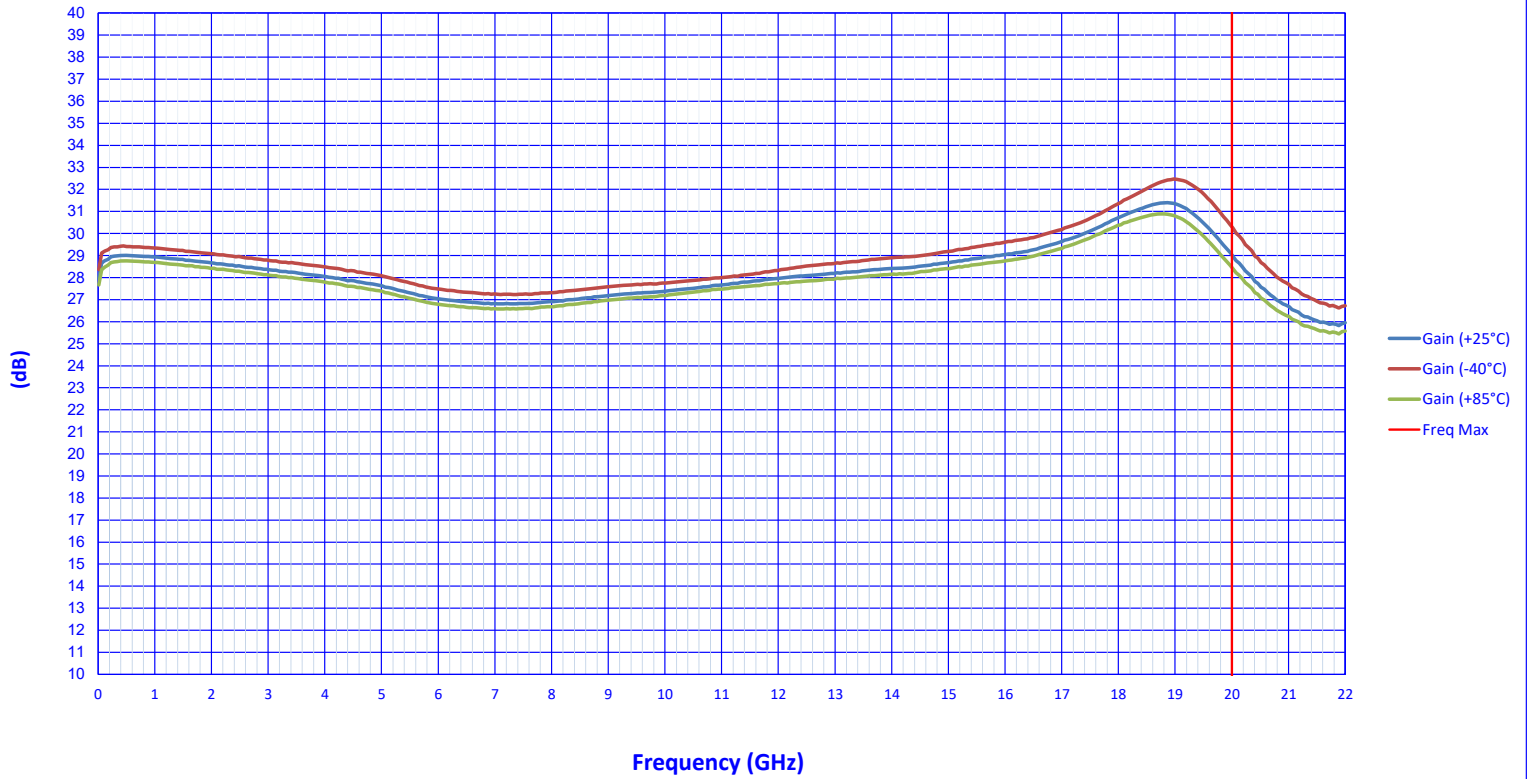
Note: Noise figure only valid above 20 MHz

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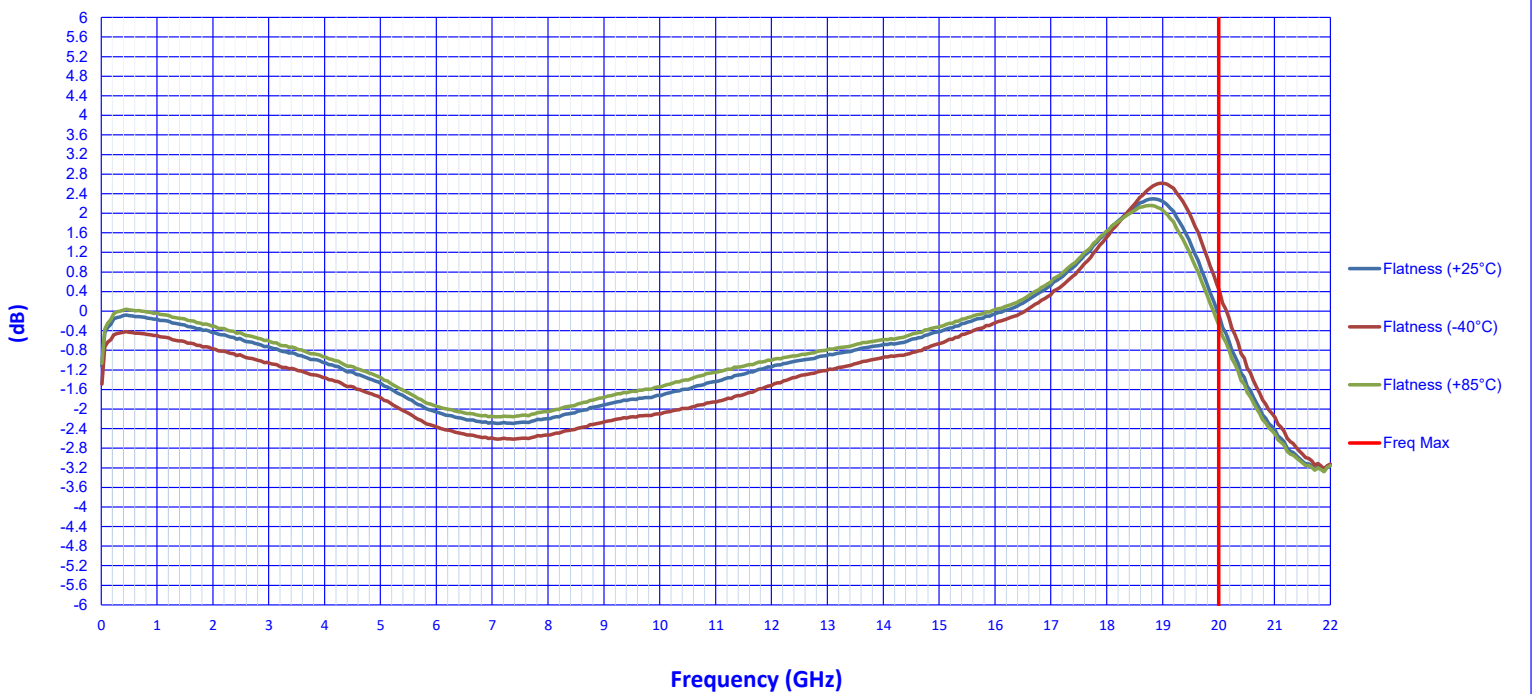


Typical Characteristics ON PLNA-30-10M20G-292FF

Gain Vs Temperature



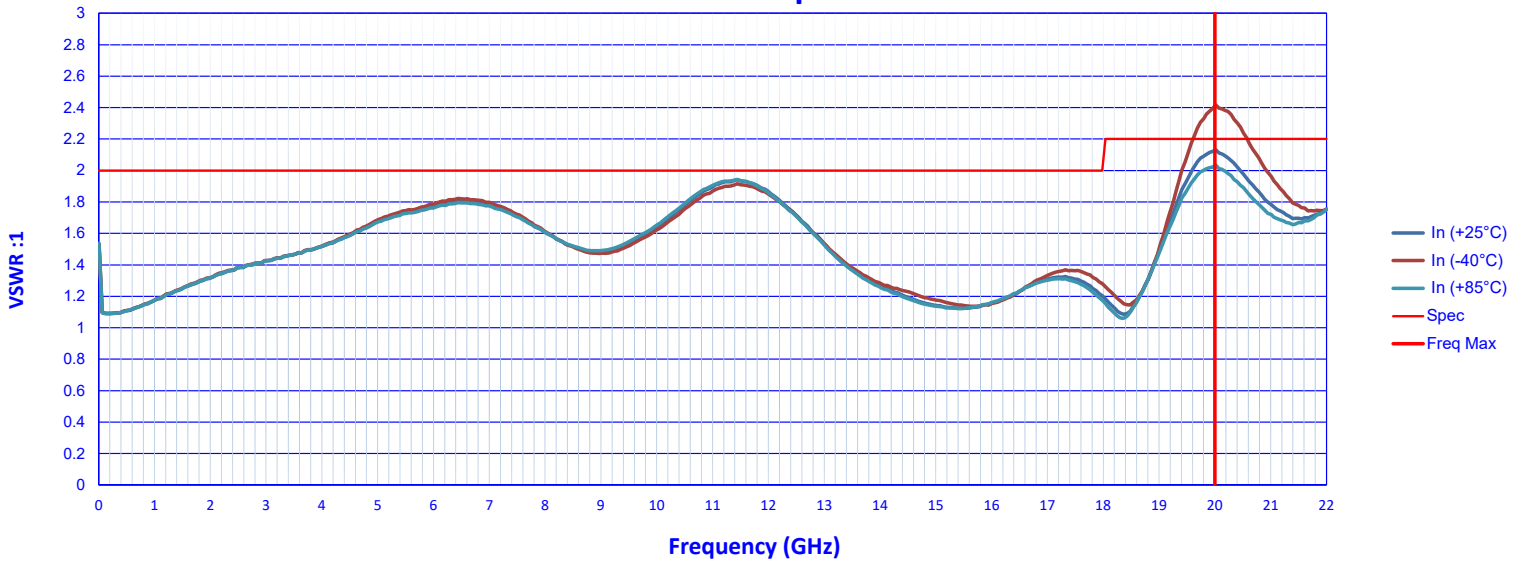
Gain Flatness Vs Temperature



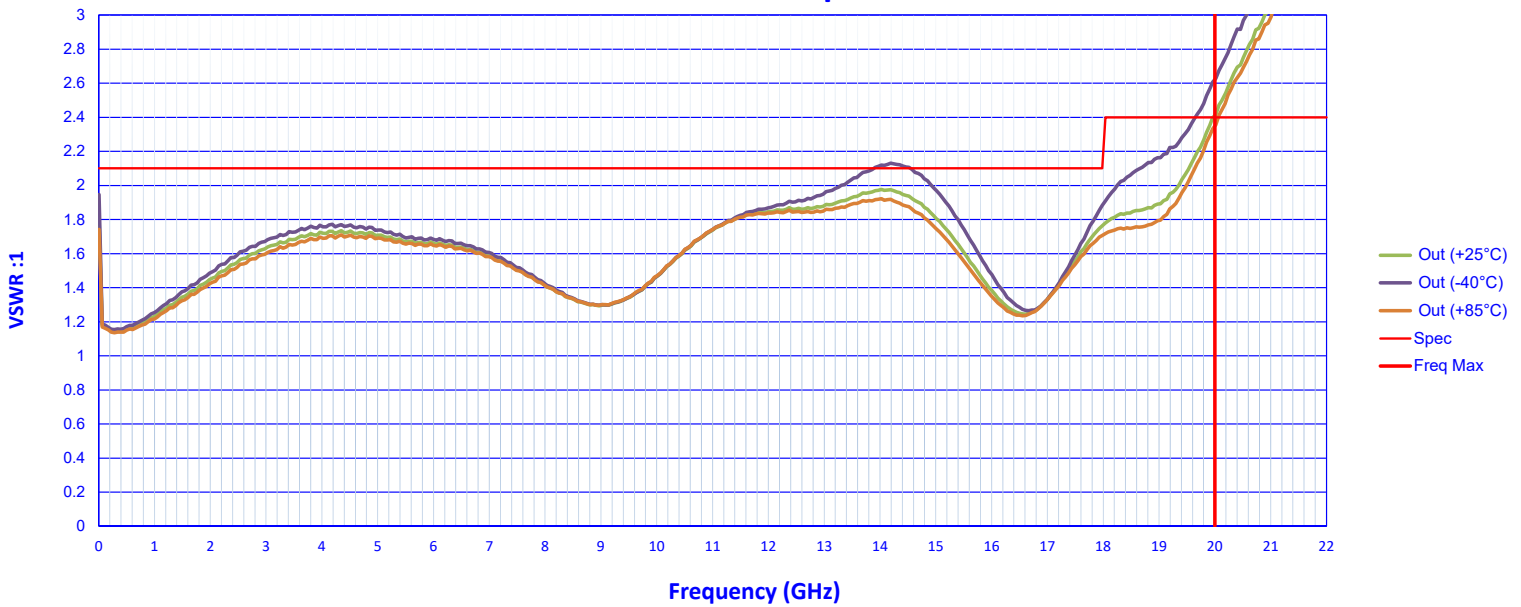


Typical Characteristics ON PLNA-30-10M20G-292FF

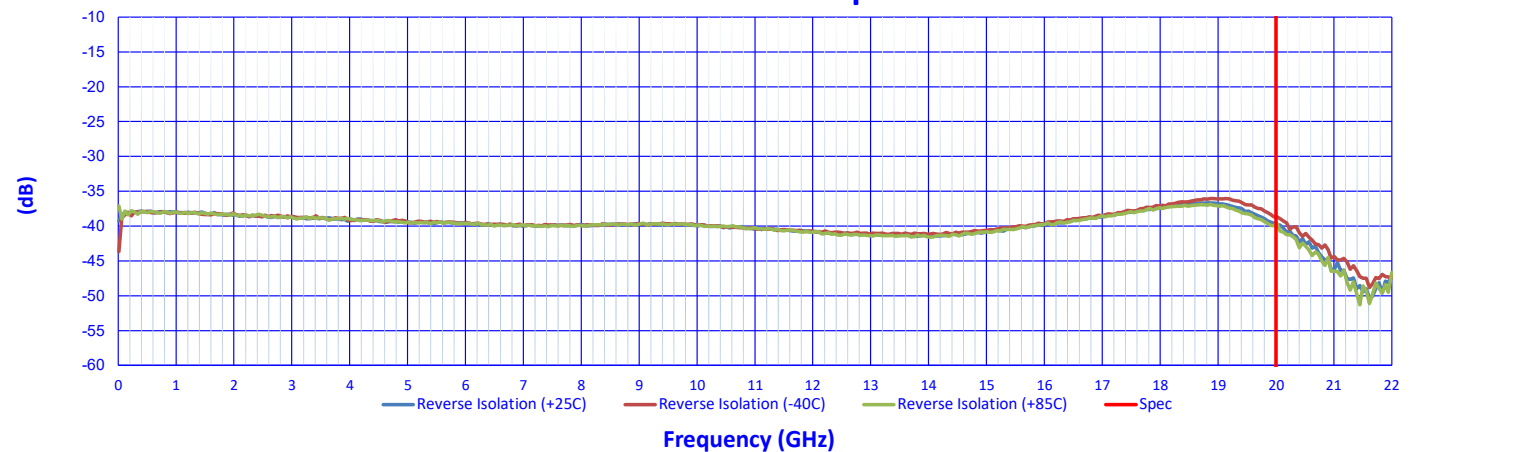
VSWR In Vs Temperature



VSWR Out Vs Temperature



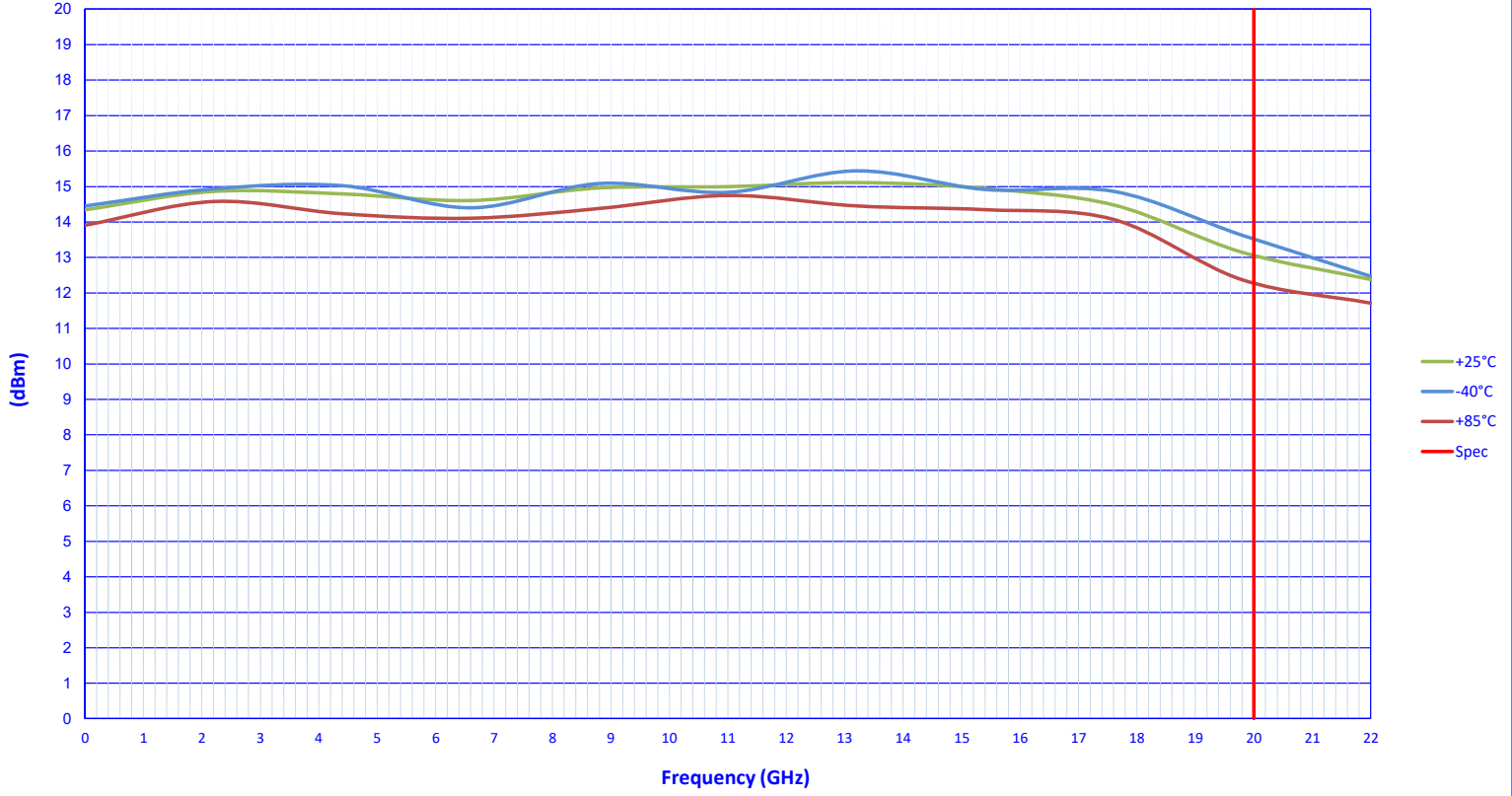
Reverse Isolation Vs Temperature



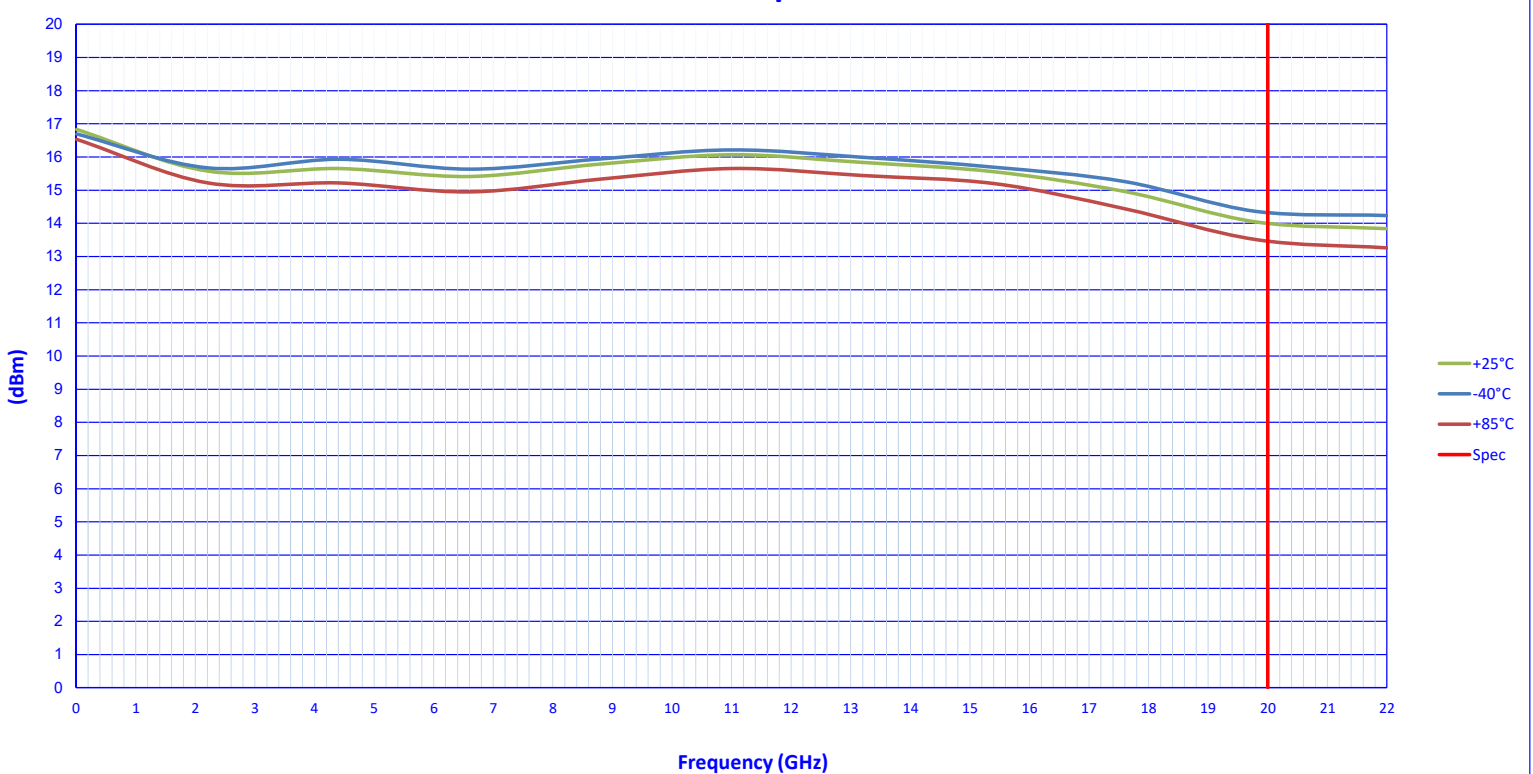


Typical Characteristics ON PLNA-30-10M20G-292FF

P1dB Vs Temperature



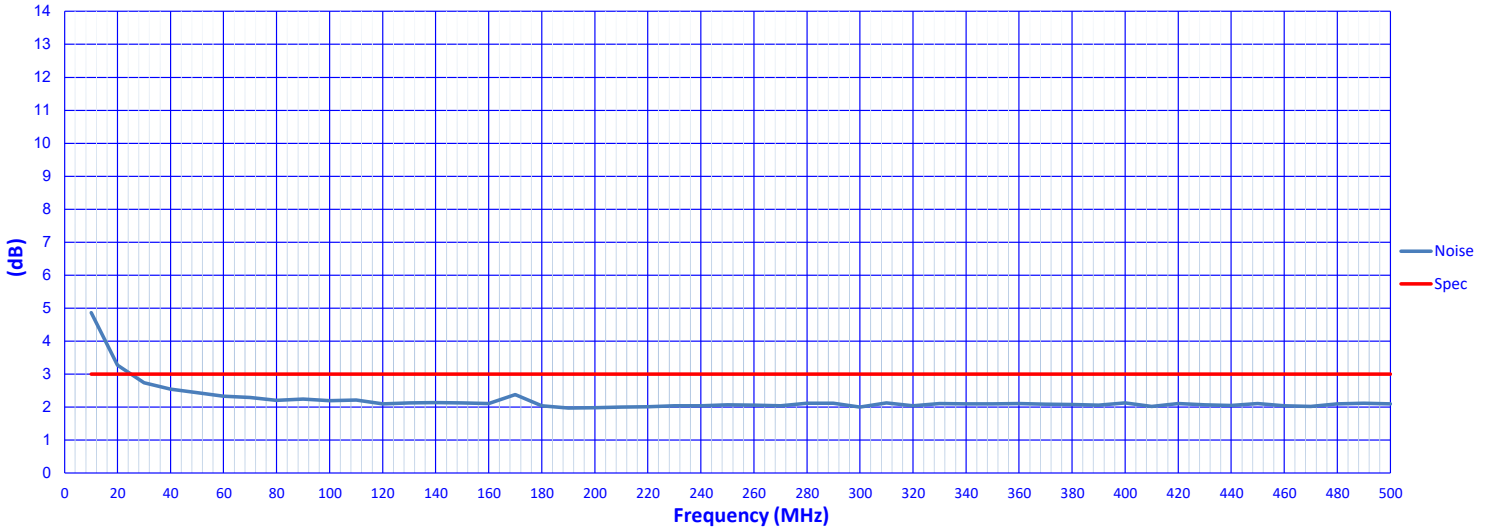
Psat Vs Temperature



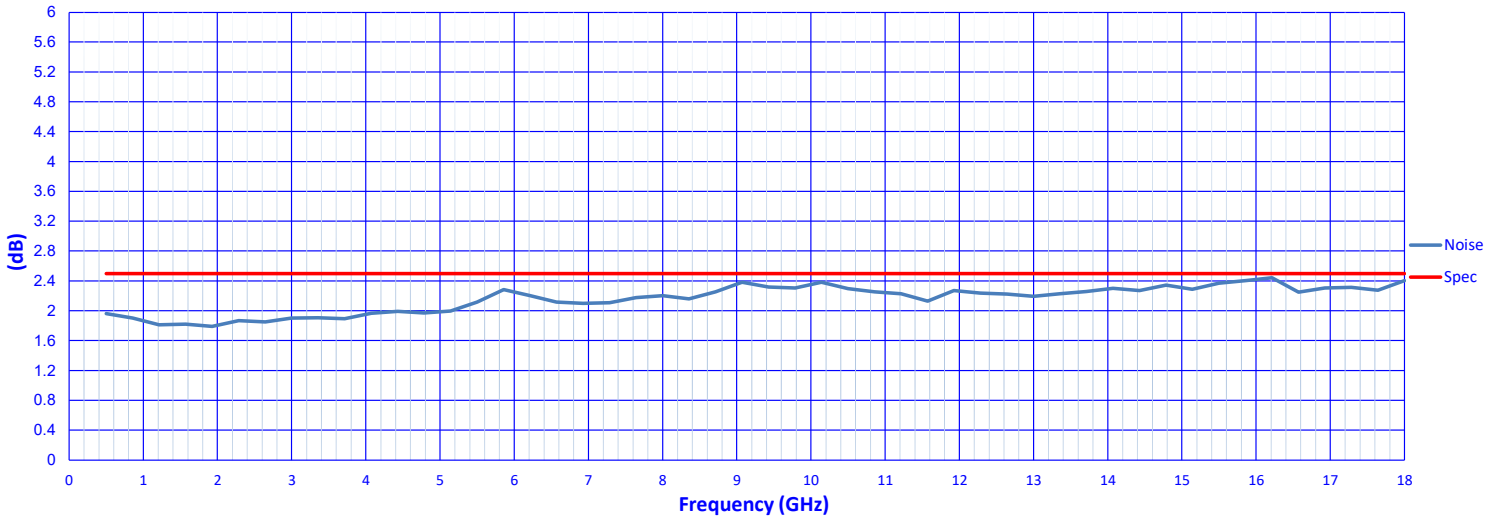


Typical Characteristics ON PLNA-30-10M20G-292FF

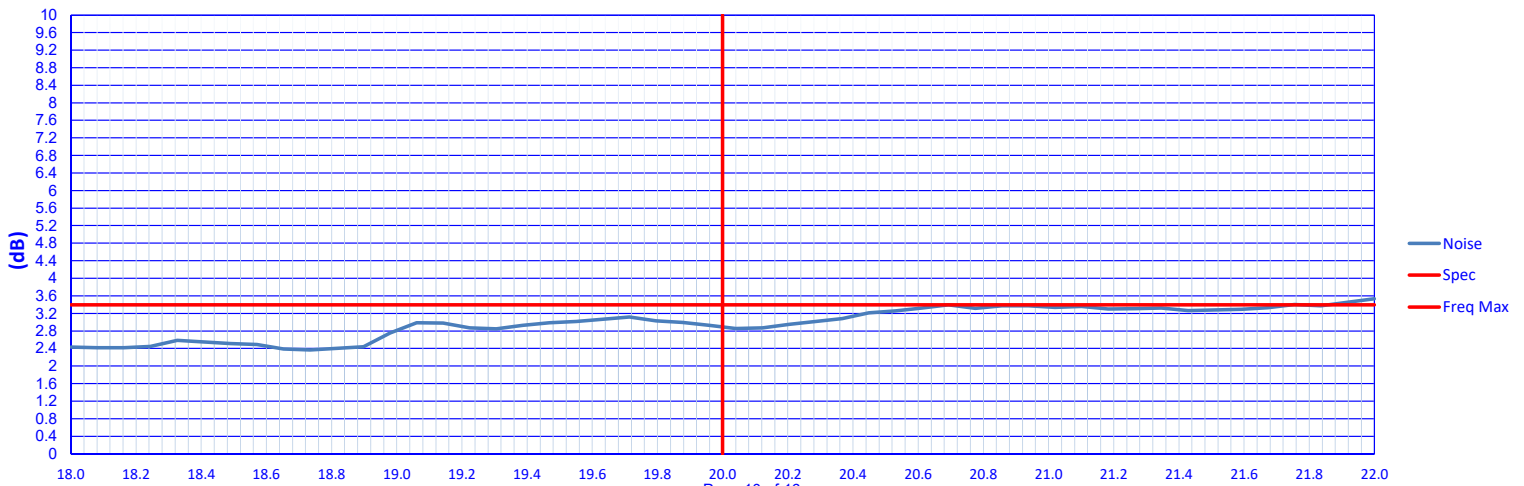
Noise Figure 10MHz to 0.5 GHz



Noise Figure 0.5 to 18 GHz



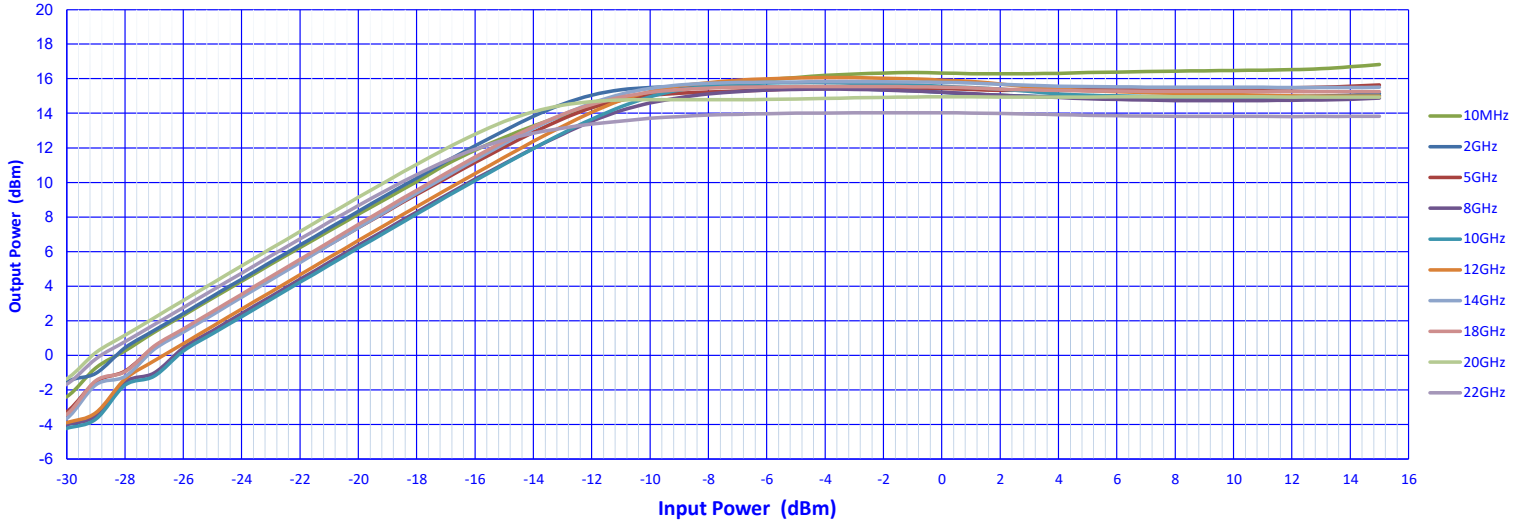
Noise Figure 18 to 20 GHz



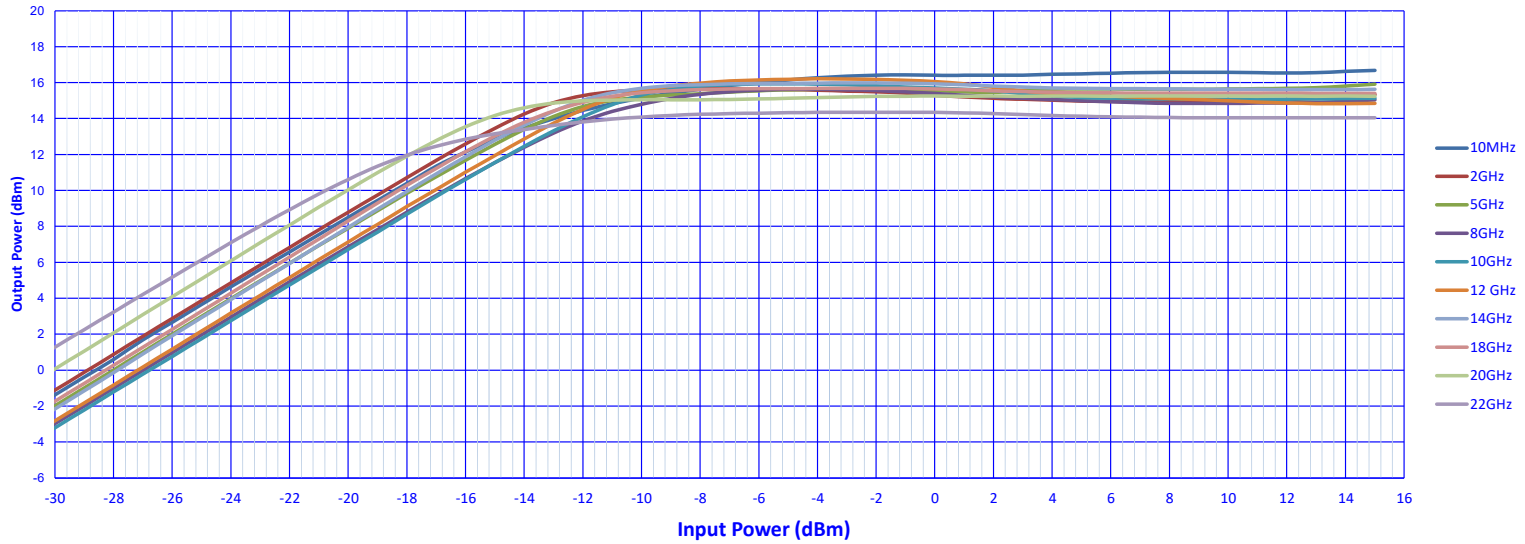


Typical Characteristics ON PLNA-30-10M20G-292FF

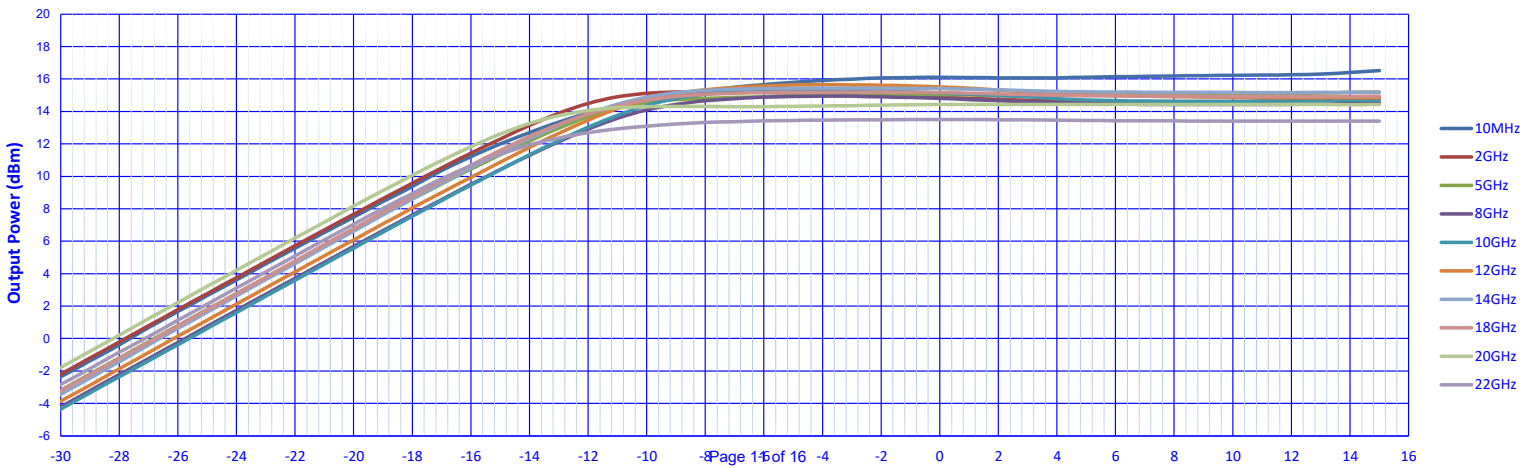
Input Power Vs Output Power (+25°C)



Input Power Vs Output Power (-40°C)



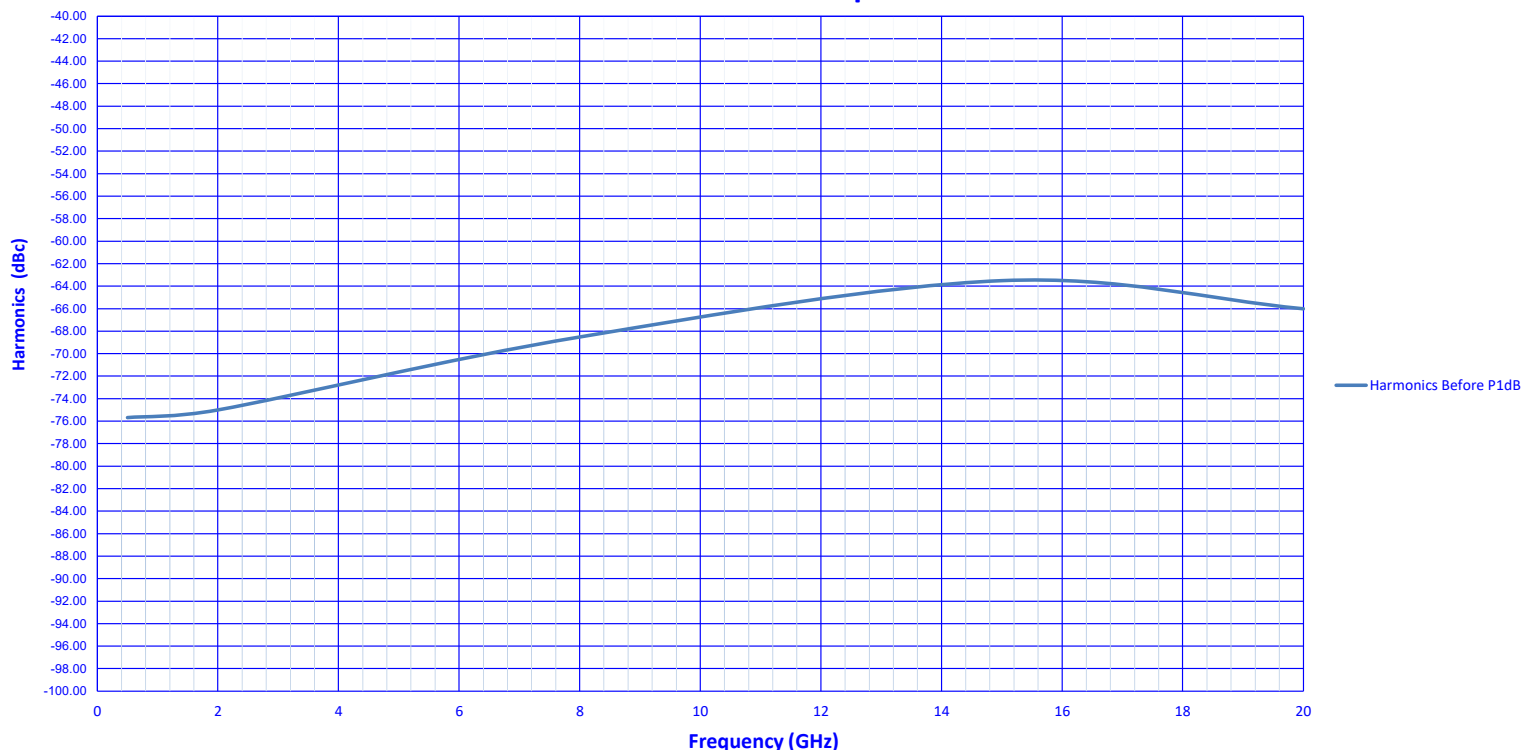
Input Power Vs Output Power



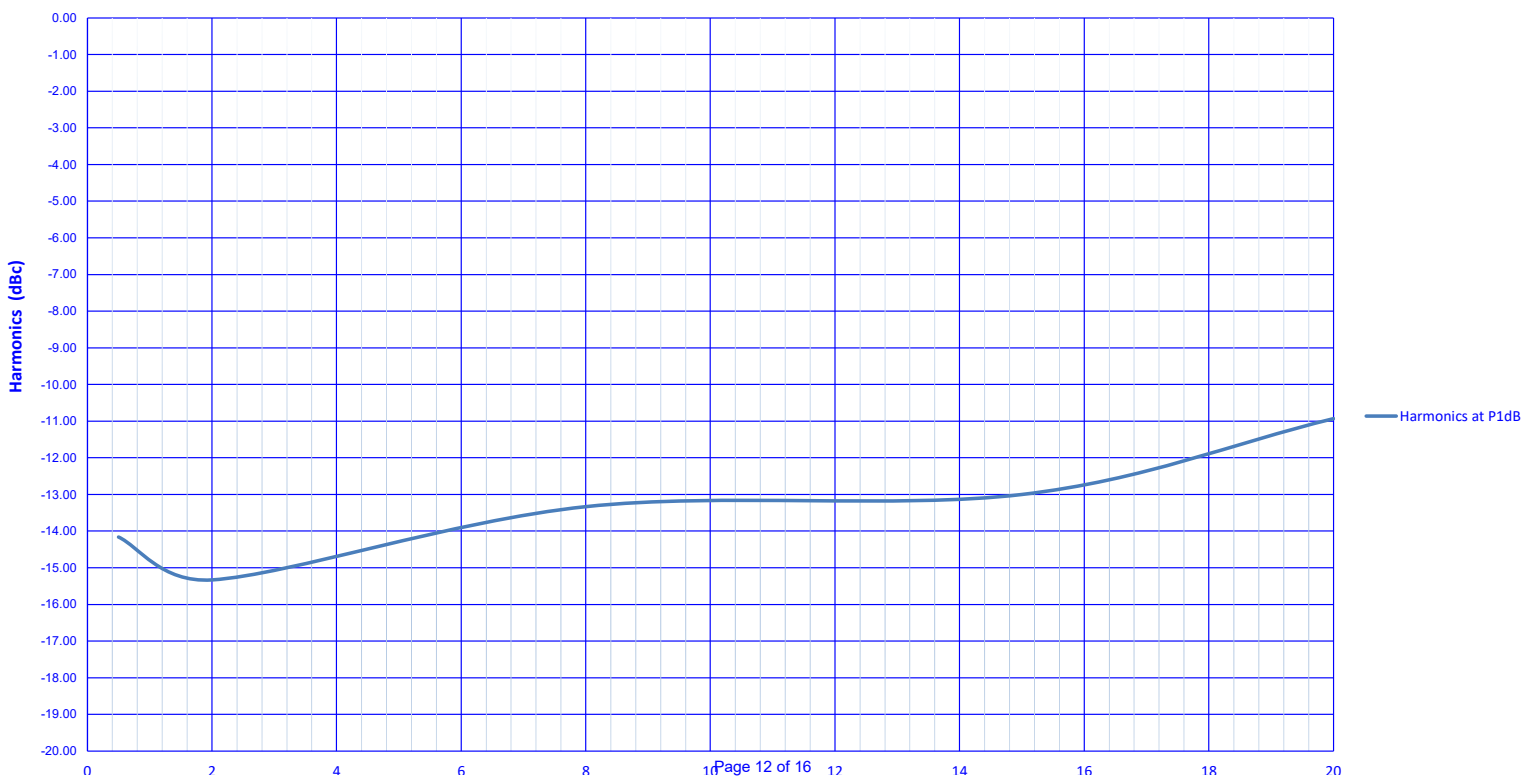


Typical Characteristics ON PLNA-30-10M20G-292FF

Second harmonic -30dBm Input Power

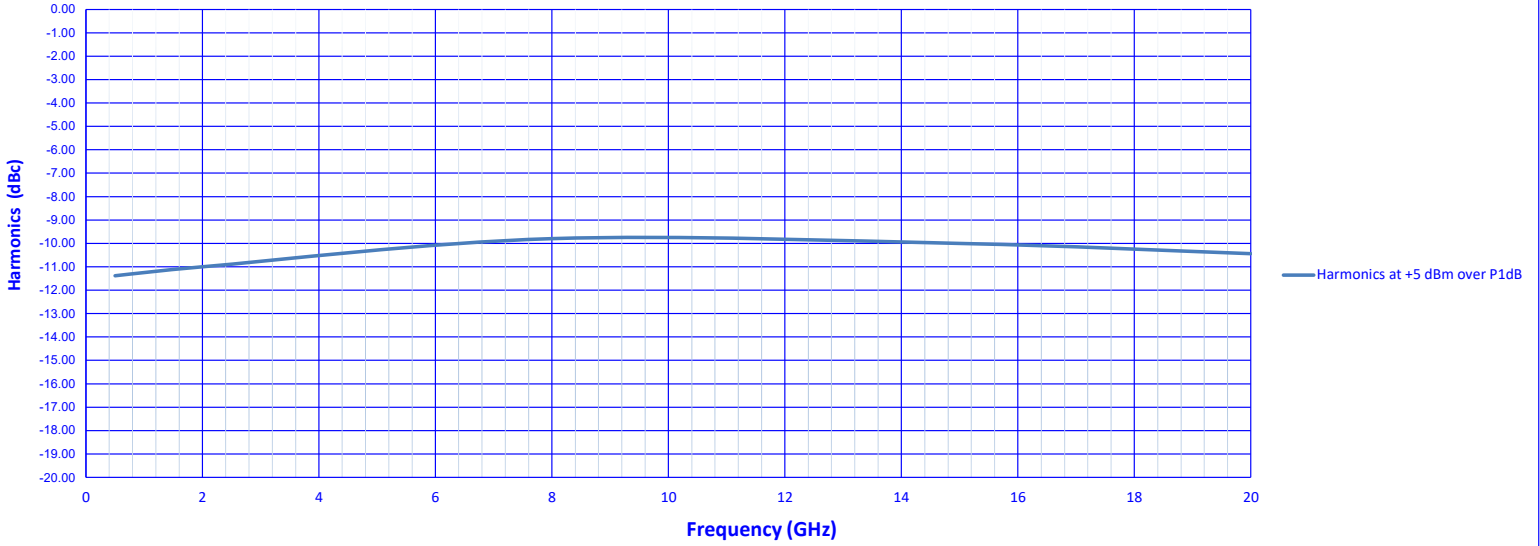


Second harmonic at P1dB

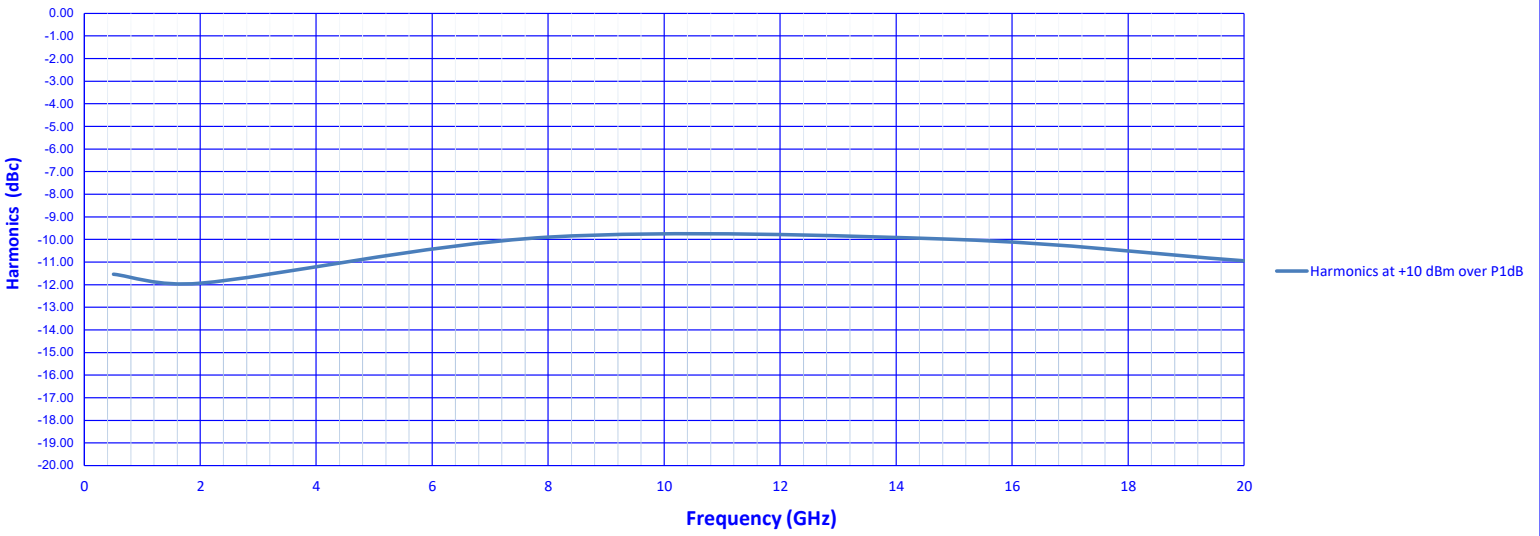


Typical Characteristics ON PLNA-30-10M20G-292FF

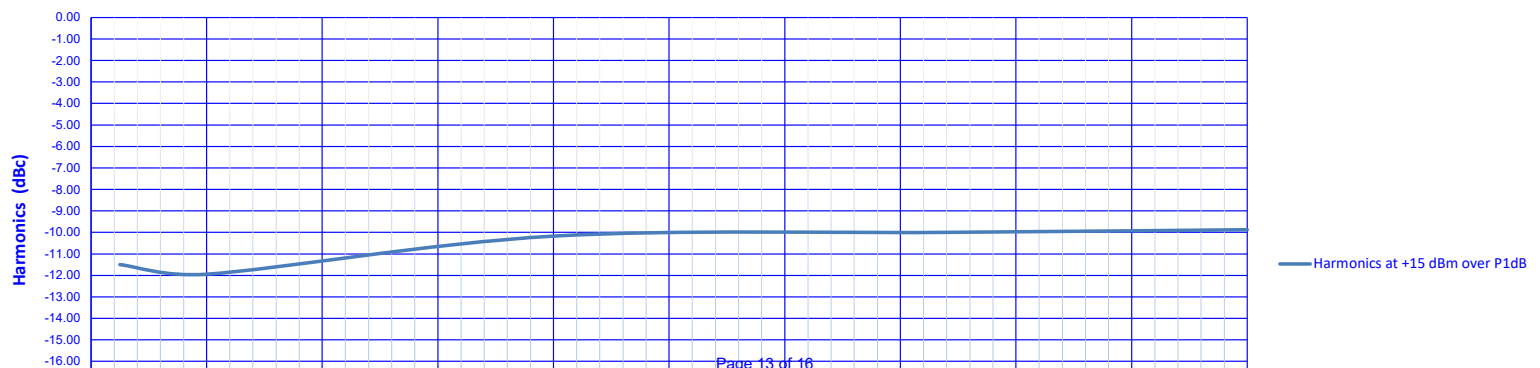
Second harmonic at +5dBm Over P1dB

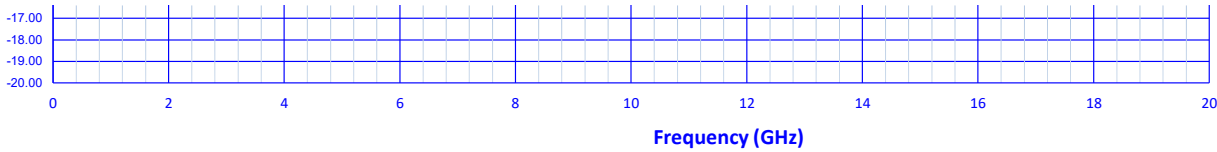


Second harmonic at +10dBm Over P1dB



Second harmonic at +15dBm Over P1dB



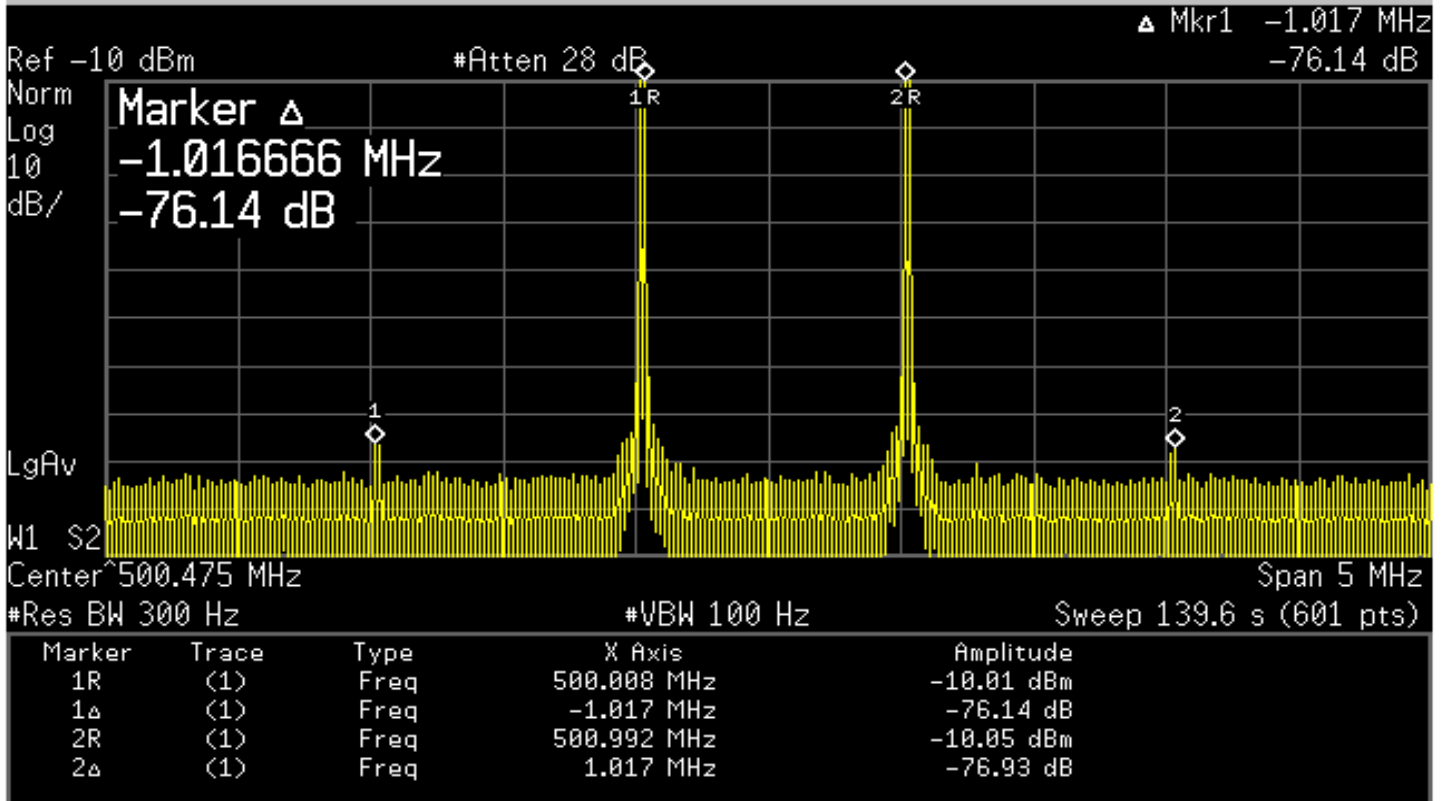


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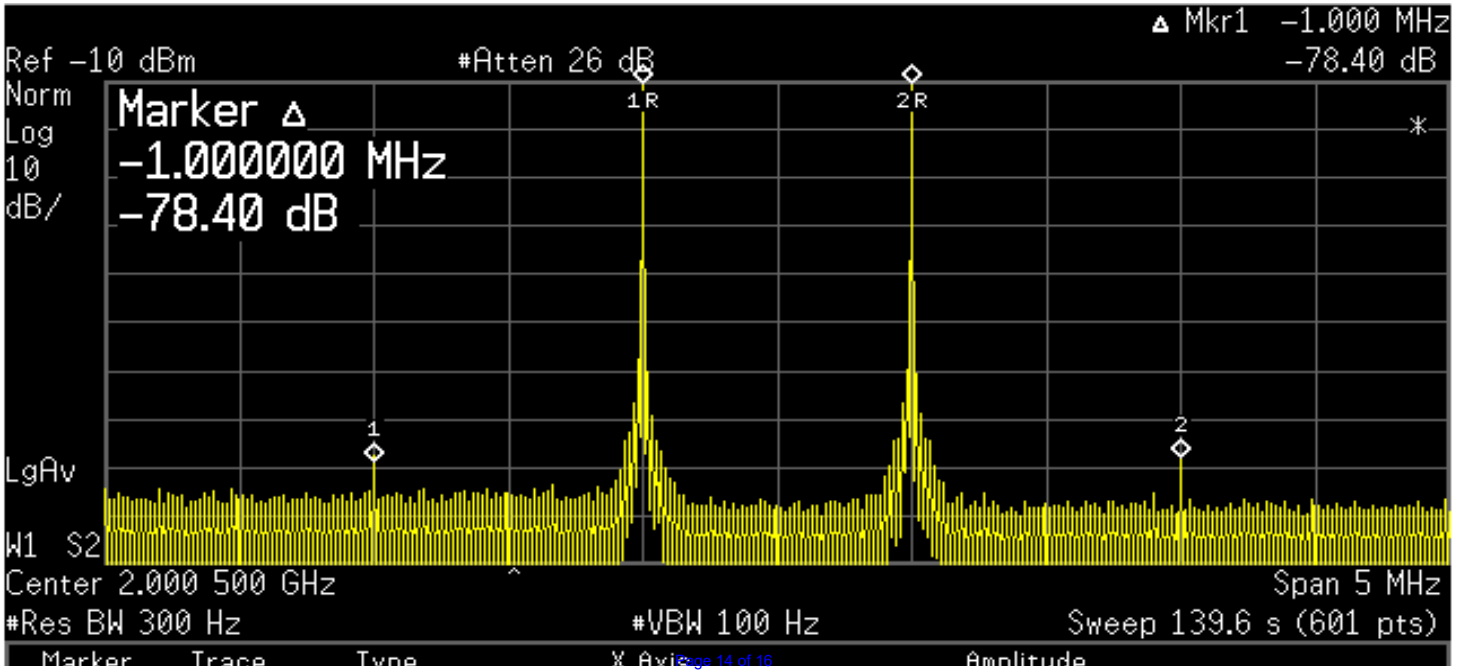
Typical Characteristics ON PLNA-30-10M20G-292FF

Output IP3 @ 0.5GHz



$OIP3 = P_{out} + dBc/2 = 28.07 \text{ dBm}$

Output IP3 @ 2 GHz



Marker	Trace	Type	W. Axis	Amplitude
1R	(1)	Freq	2.000 000 GHz	-10.46 dBm
1Δ	(1)	Freq	-1.000 MHz	-78.40 dB
2R	(1)	Freq	2.001 000 GHz	-10.53 dBm
2Δ	(1)	Freq	1.000 MHz	-77.47 dB

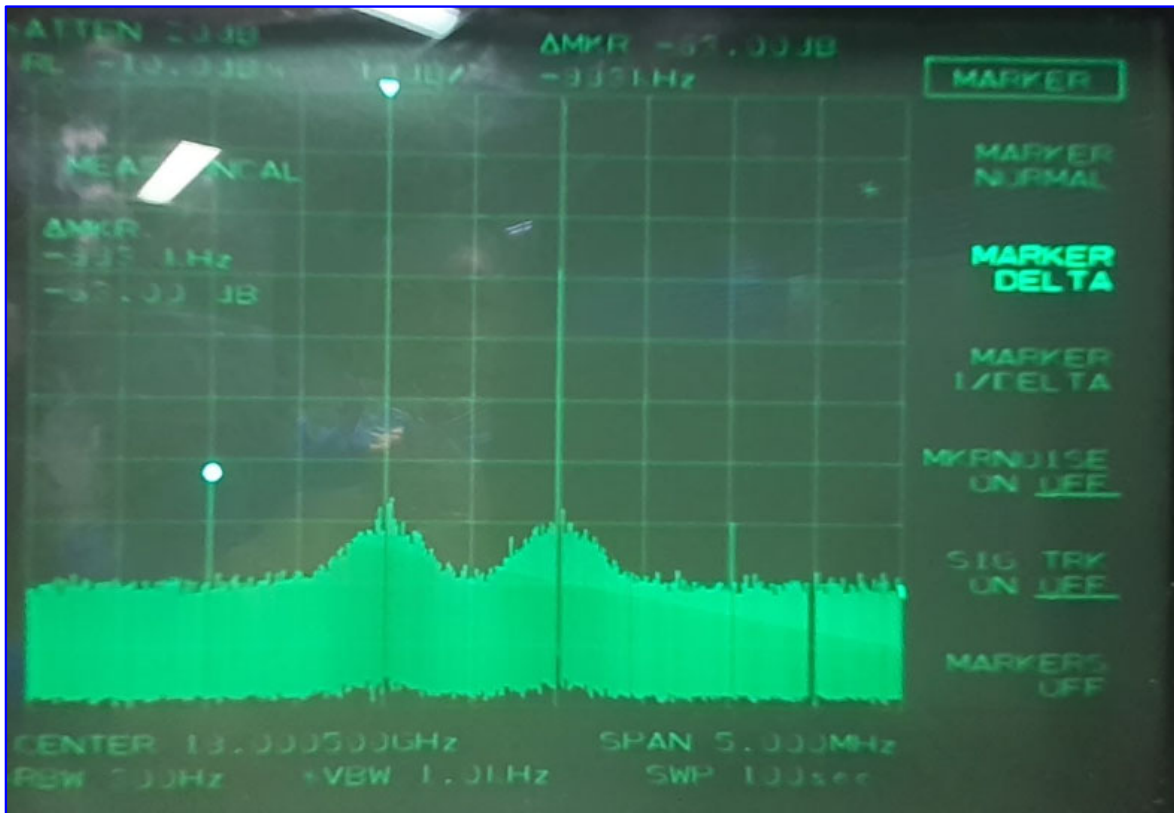
OIP3 = Pout +dBc/2 = 28.74 dBm

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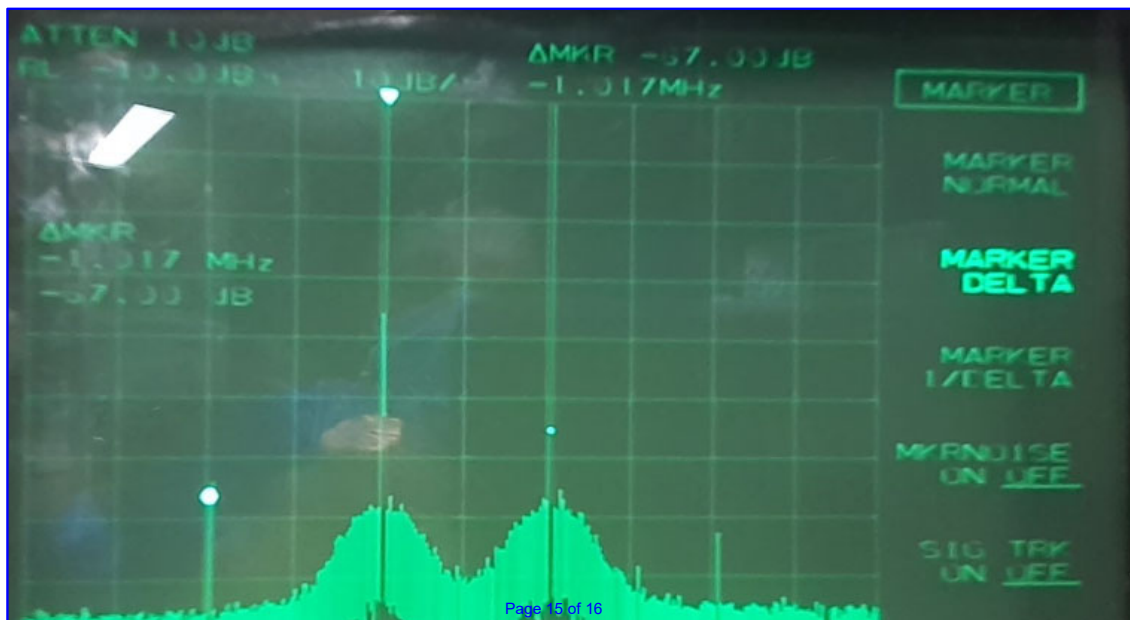
**Typical Characteristics
 ON
 PLNA-30-10M20G-292FF**

Output IP3 @ 18GHz



OIP3 = Pout +dBc/2 = 23 dBm

Output IP3 @ 20 GHz





OIP3 = Pout +dBc/2 = 23.5 dBm

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