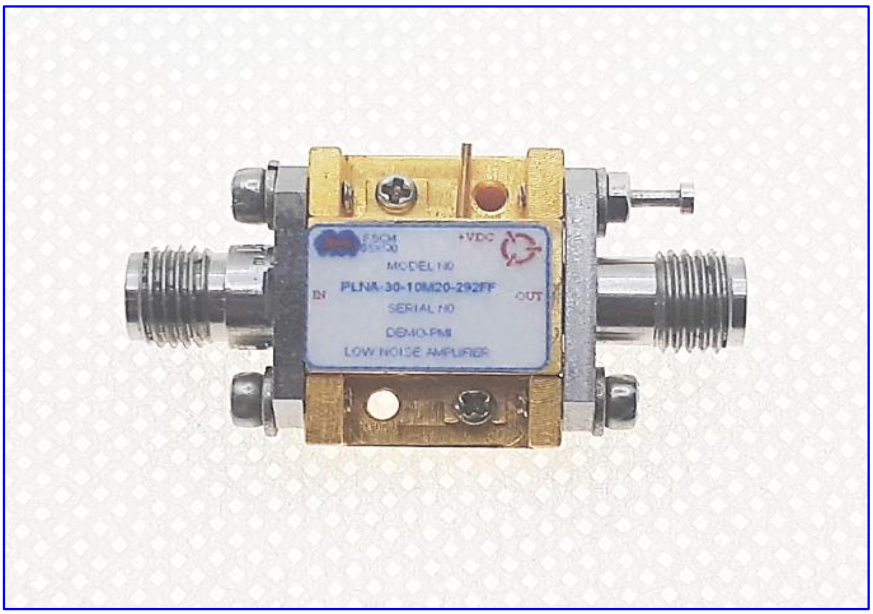
Typical Characteristics
ON
PLNA-30-10M20G-292FF

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

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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

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	02/12/21	

SPECIFICATIONS:

Frequency Range:	10 MHz to 20 GHz
Gain:	+26 dB Min. (10MHz to 18 GHz) +28 dB Min. (18 to 20 GHz)
Gain Flatness:	±2.0 dB Typ. (10MHz to 18 GHz) ±2.5 dB Typ. (10MHz to 20 GHz)
Noise Figure: (See Note)	3.0 dB Typ. (20MHz to 0.5 GHz) 2.5 dB Typ. (0.5 to 18 GHz) 3.3 dB Typ. (18 to 20 GHz)
OP1dB:	+14 dBm Typ. (10MHz to 18 GHz) +13 dBm Typ. (18 to 20 GHz)
PSat:	+15 dBm Typ. (10 MHz to 18 GHz) +14 dBm Typ. (18 to 20 GHz)
OIP3:	+25 dBm Typ. (10MHz to 18 GHz) +23 dBm Typ. (20 to 20 GHz)
VSWR Input:	2.0:1 Max.(10MHz to 18 GHz) 2.2:1 Typ. (18 to 20 GHz)
VSWR Output:	2.1:1 Max.(10MHz to 18 GHz) 2.4:1 Typ. (18 to 20 GHz)

Note: Noise figure only valid above 20 MHz

ENVIRONMENTAL RATINGS:

Temperature:	-40°C to + 85°C (Operating) -40°C to +100°C (Storage)
Humidity:	MIL-STD-202F, METHOD 103B COND B.
Shock:	MIL-STD-202F, METHOD 213B COND B.
Altitude:	MIL-STD-202F, METHOD 105C COND B.
Temperature Cycle:	MIL-STD-202F, METHOD 107D COND A

Note: The above specifications are subject to change or revision.
Specifications will vary over operating temperature.

SPECIFICATIONS:

Second Harmonic:	
(-30dBm Input Power)	70 dBc Typ.
(At P1dB)	12 dBc Typ.
(+5dBm Over P1dB)	12 dBc Typ.
(+10dBm Over P1dB)	12 dBc Typ
(+15dBm Over P1dB)	12 dBc Typ.
Reverse Isolation:	36 dB Min. (10 MHz to 18 GHz) 35 dB Min. (18 to 20 GHz)
DC Supply:	+5 VDC @ 120 mA Max.
Connectors In/Out:	2.92mm Female
Finish:	Gold Plated

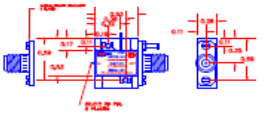
FEATURES:

Internal Voltage Regulation
Unconditional Stability

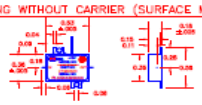
AVAILABLE OPTIONS:

Various Package types
Various Connector types
Temperature Compensation
Gain and Phase Matching
MIL-STD-883 Screening Available

HOUSING WITH CARRIER



HOUSING WITHOUT CARRIER (SURFACE MOUNT)



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
DRAWN	01/12/2021
REDRAWN	ALC
ISSUED	

TITLE: PRODUCT FEATURE
PLNA-30-10M20-292FF

SIZE A | FSCM NO. | DWG NO PRELIMINARY | REV A1
SCALE N:S | SHEET 1 OF 2

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

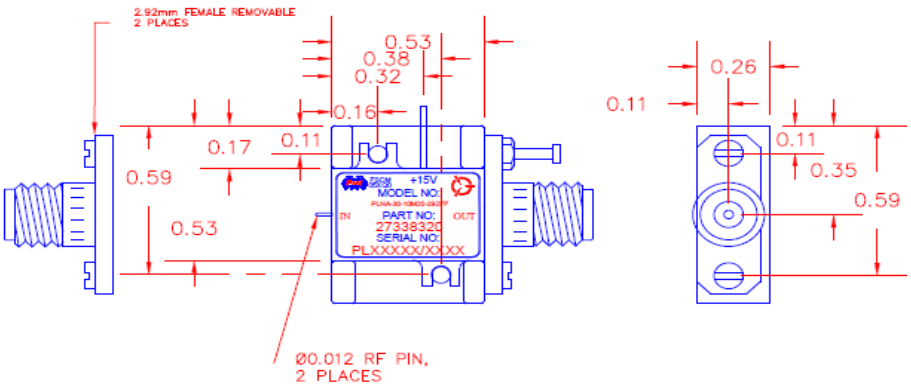
Mechanical Outline

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.

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	02/12/21	

HOUSING WITH CARRIER



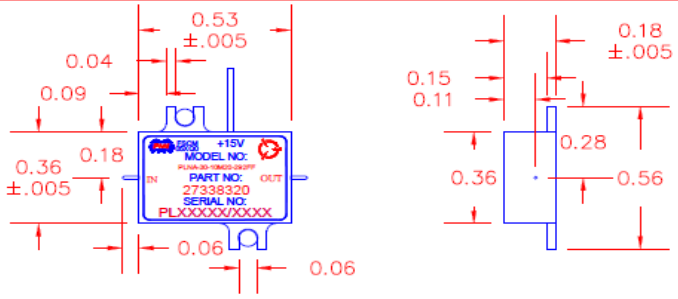
MECHANICAL OUTLINE

ENVIRONMENTAL RATINGS:

Temperature:	-40°C to + 85°C (Operating)
	-40°C to +100°C (Storage)
Humidity:	MIL-STD-202F, METHOD 103B COND B.
Shock:	MIL-STD-202F, METHOD 213B COND B.
Altitude:	MIL-STD-202F, METHOD 105C COND B.
Temperature Cycle:	MIL-STD-202F, METHOD 107D COND A

Note: The above specifications are subject to change or revision.
Specifications will vary over operating temperature.

HOUSING WITHOUT CARRIER (SURFACE MOUNT)



ALL DIMENSIONS ARE IN INCHES
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X.XXX ±0.010

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APROVALS	DATE
DRAWN	01/12/2021
REDRAWN	ALC
ISSUED	

TITLE: PRODUCT FEATURE
PLNA–30–10M20–292FF

SIZE A | FSCM NO. | DWG NO PRELIMINARY | REV A

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 dB Typ. (10MHz to 18 GHz) ±2.5 dB Typ. (10MHz to 20 GHz)	**1.98 dB (±)**	**2.09 dB (±)**	**1.91 dB (±)**	
			2.3 dB (±)	**2.62 dB (±)**	**2.16 dB (±)**	
			See Graphs	**See Graphs**	**See Graphs**	
4	Noise Figure:	3 dB Typ. (20MHz - 0.5GHz) 2.5 dB Typ. (0.5 to 18GHz) 3.3 dB Typ. (18 to 20 GHz) See Note	**3.27 dB**	**3.27 dB**	**3.27 dB**	
			2.44 dB	**2.44 dB**	**2.44 dB**	
			3.12 dB	**3.12 dB**	**3.12 dB**	
			See Graphs	**See Graphs**	**See Graphs**	
5	OP1dB:	+14 dBm Typ.(10 MHz to 18 GHz) +13 dB Typ. (18 to 22 GHz)	**14.34 dBm**	**14.4 dBm**	**13.91 dBm**	
			13.15 dBm	**13.63 dBm**	**12.37 dBm**	
			See Graphs	**See Graphs**	**See Graphs**	
6	Psat:	+15 dBm Typ. (10 MHz to 18 Ghz) +14 dBm Typ. (18 to 20 GHz)	**14.95 dBm**	**15.26 dBm**	**14.44 dBm**	
			14.04 dBm	**14.36 dBm**	**13.51 dBm**	
			See Graphs	**See Graphs**	**See Graphs**	
7	OIP3	+25 dBm Typ. (10MHz to 18 GHz) +23 dBm Typ. (18 to 20 GHz)	**28.07 dBm**	**28.07 dBm**	**28.07 dBm**	
			23 dBm	**23 dBm**	**23 dBm**	
			See Plots	**See Plots**	**See Plots**	
8	Second Harmonic	Second harmonic -30dBm Input Power 70 dBc Typ. Second harmonic at P1dB 12 dBc Typ. Second harmonic at +5dBm Over P1dB 12 dBc Typ. Second harmonic at +10dBm Over P1dB 12 dBc Typ. Second harmonic at +15dBm Over P1dB 12 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**	
			15.33 dBc Max - 10.93 dBc Min	**15.33 dBc Max - 10.93 dBc Min**	**15.33 dBc Max - 10.93 dBc Min**	
			11.38 dBc Max - 9.8 dBc Min	**11.38 dBc Max - 9.8 dBc Min**	**11.38 dBc Max - 9.8 dBc Min**	
			11.94 dBc Max - 9.9 dBc Min	**11.94 dBc Max - 9.9 dBc Min**	**11.94 dBc Max - 9.9 dBc Min**	
			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) 2.2:1 Typ. (18GHz to 20GHz)	**1.94 :1**	**1.92 :1**	**1.94 :1**	
			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) 2.4:1 Typ. (18GHz to 20GHz)	**1.98 :1**	**2.13 :1**	**1.92 :1**	
			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) 35 dB Min. (18 to 20 GHz)	**37.16 dB**	**37.03 dB**	**37.11 dB**	
			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**	

Note: Noise figure only valid above 20 MHz

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Typical Characteristics
ON
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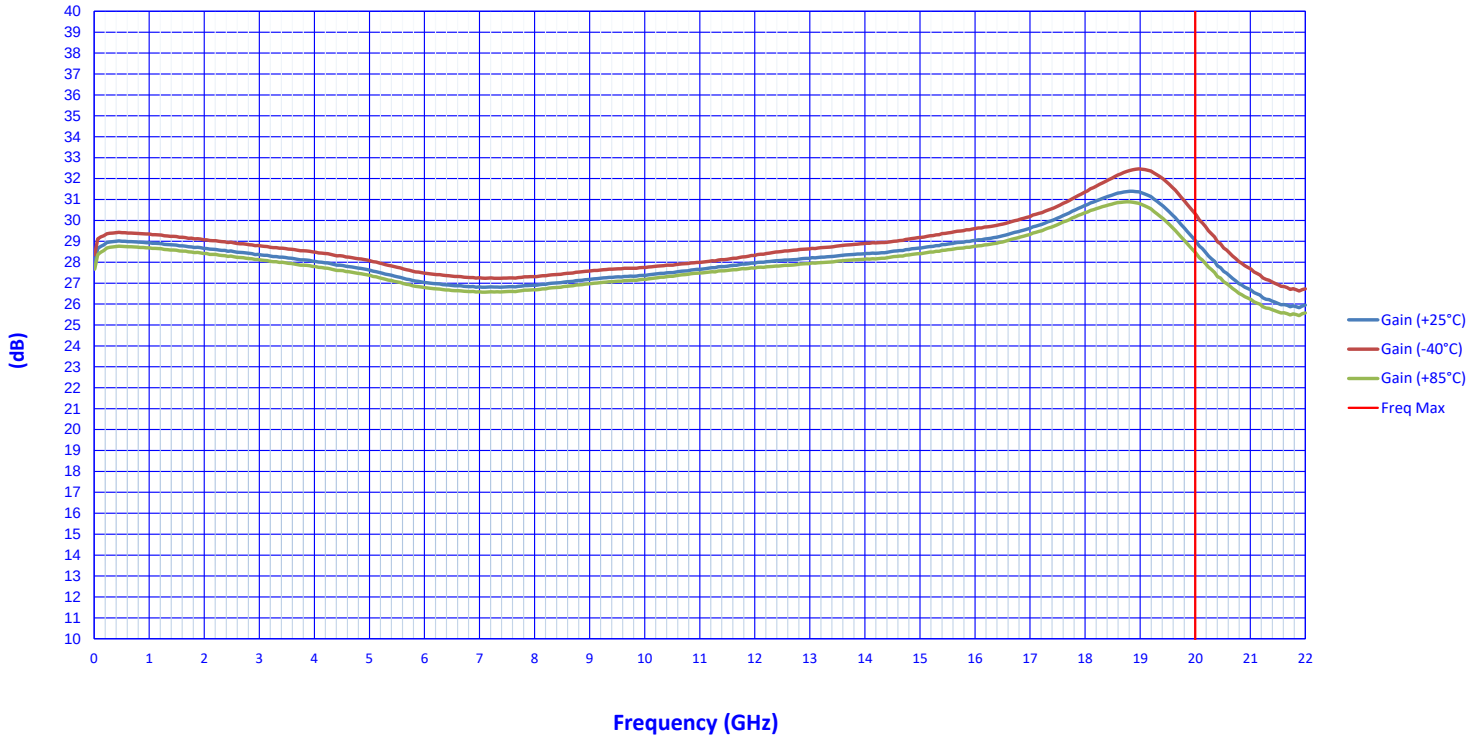
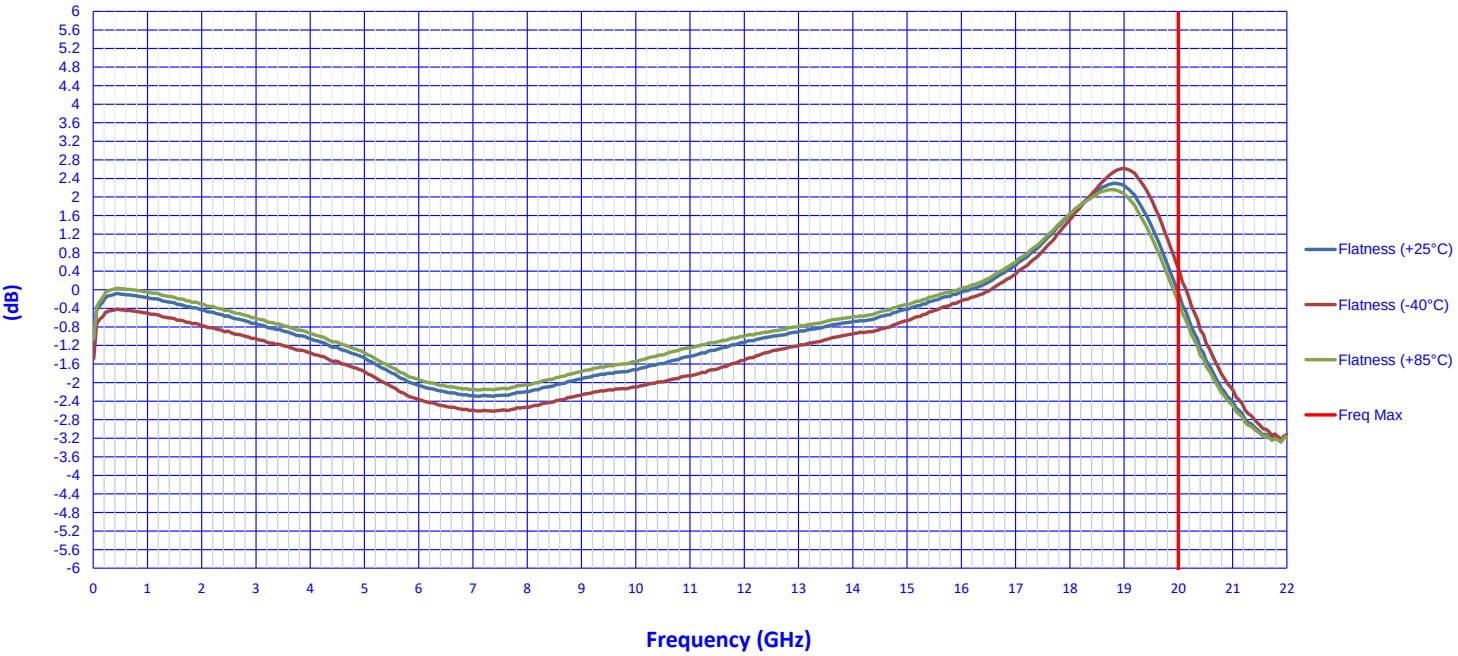
Gain Vs Temperature



Gain Flatness Vs Temperature



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Typical Characteristics
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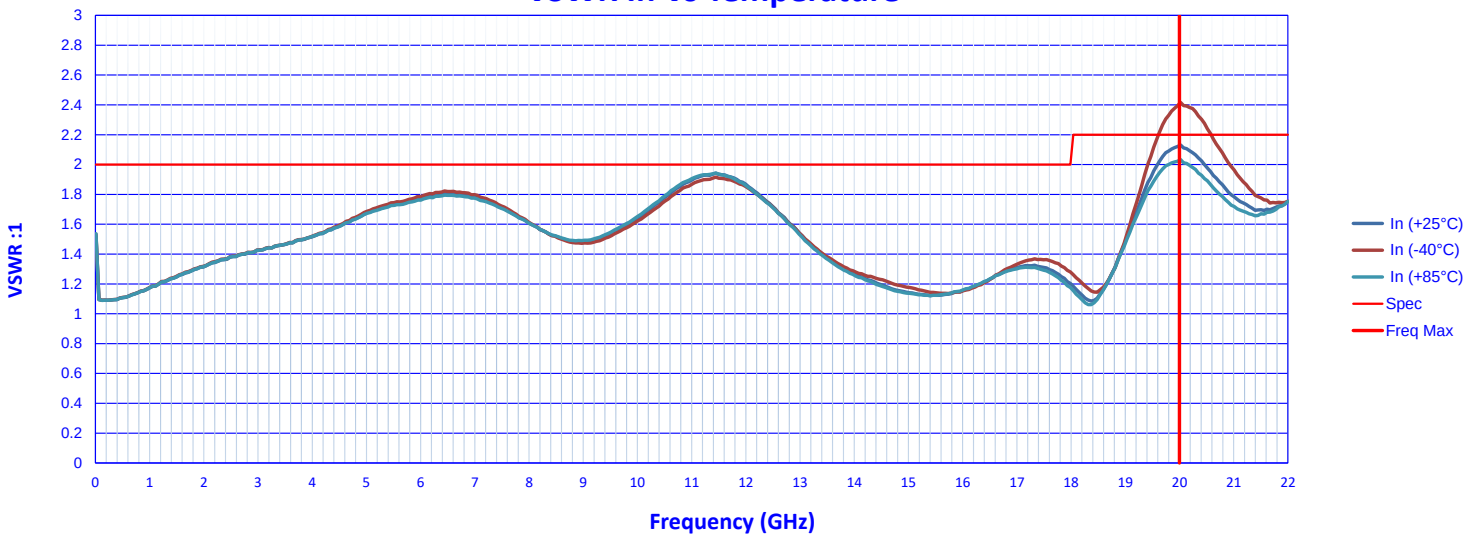
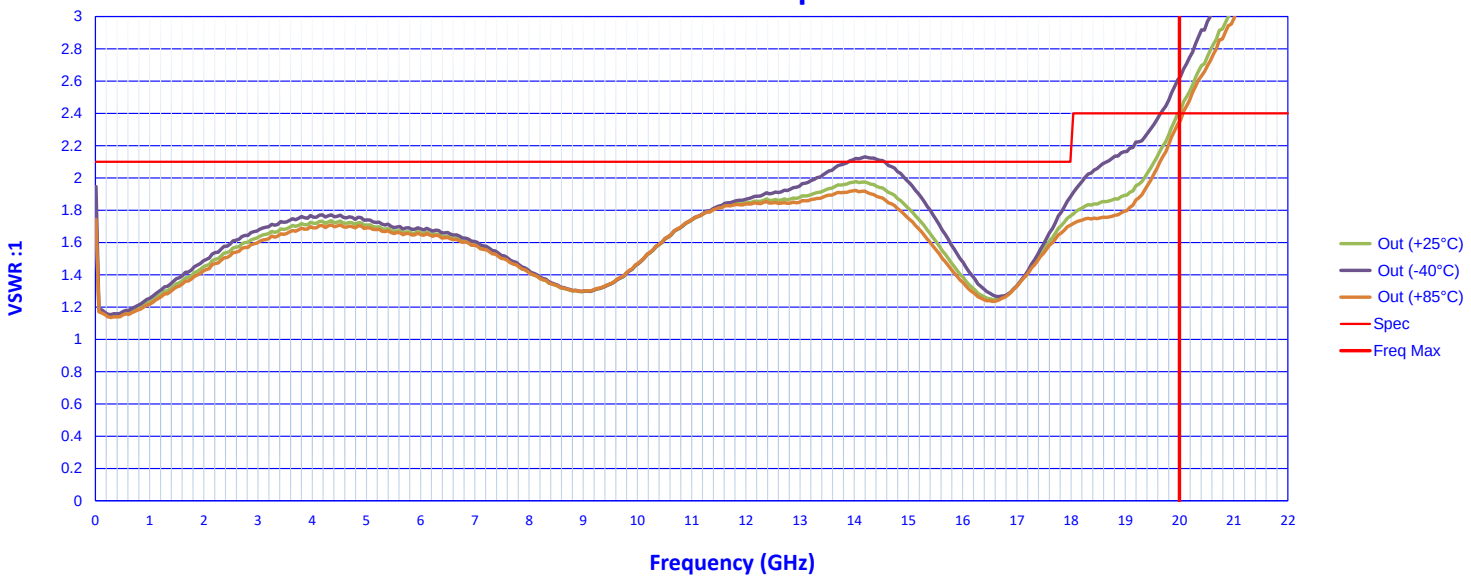
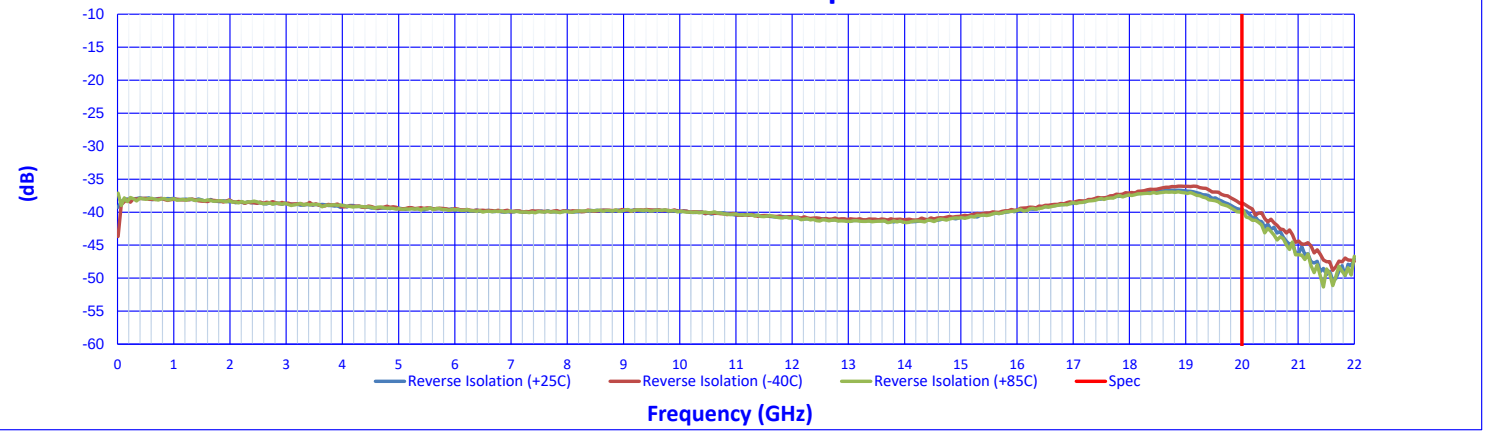
VSWR In Vs Temperature



VSWR Out Vs Temperature



Reverse Isolation Vs Temperature



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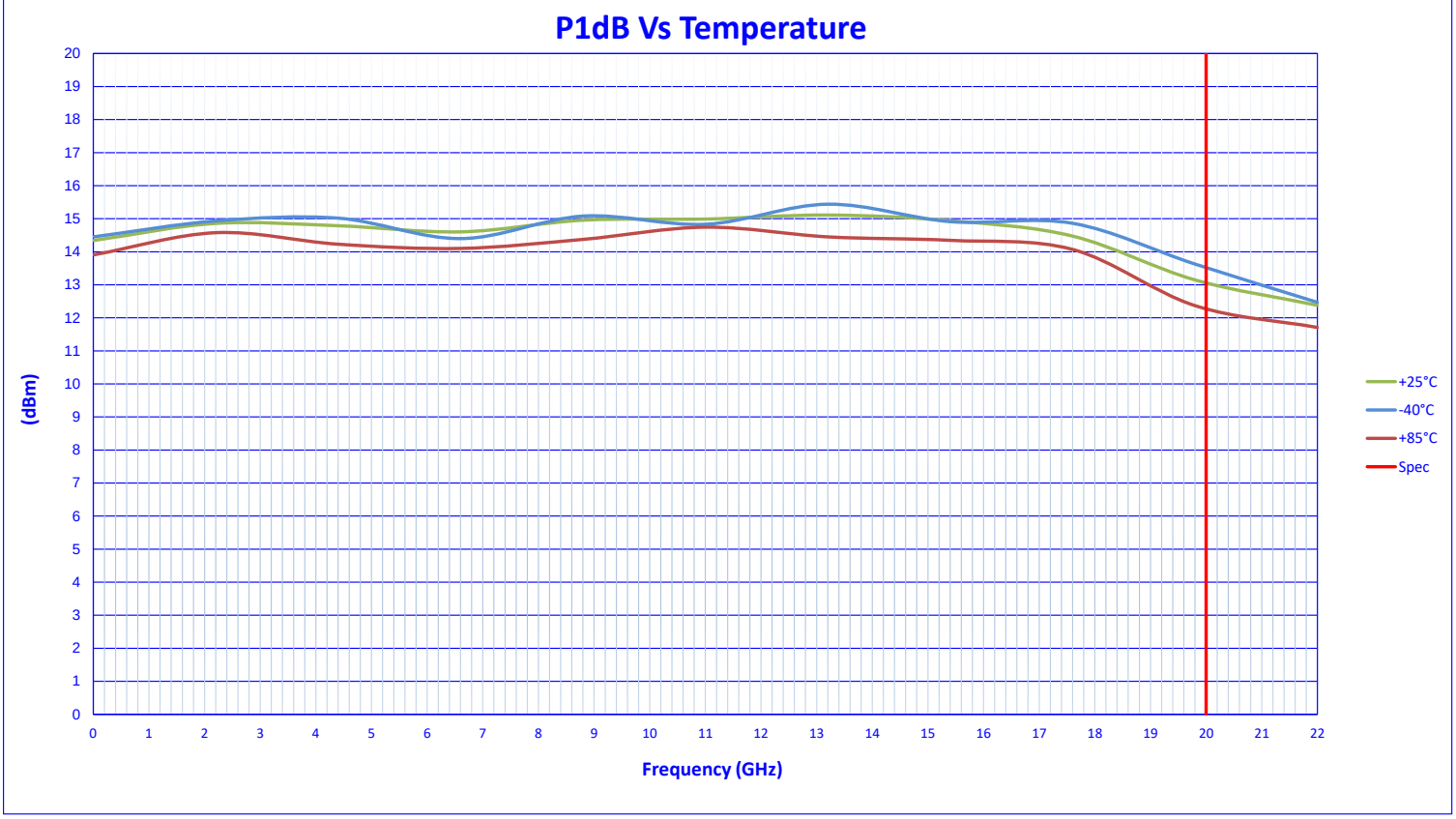

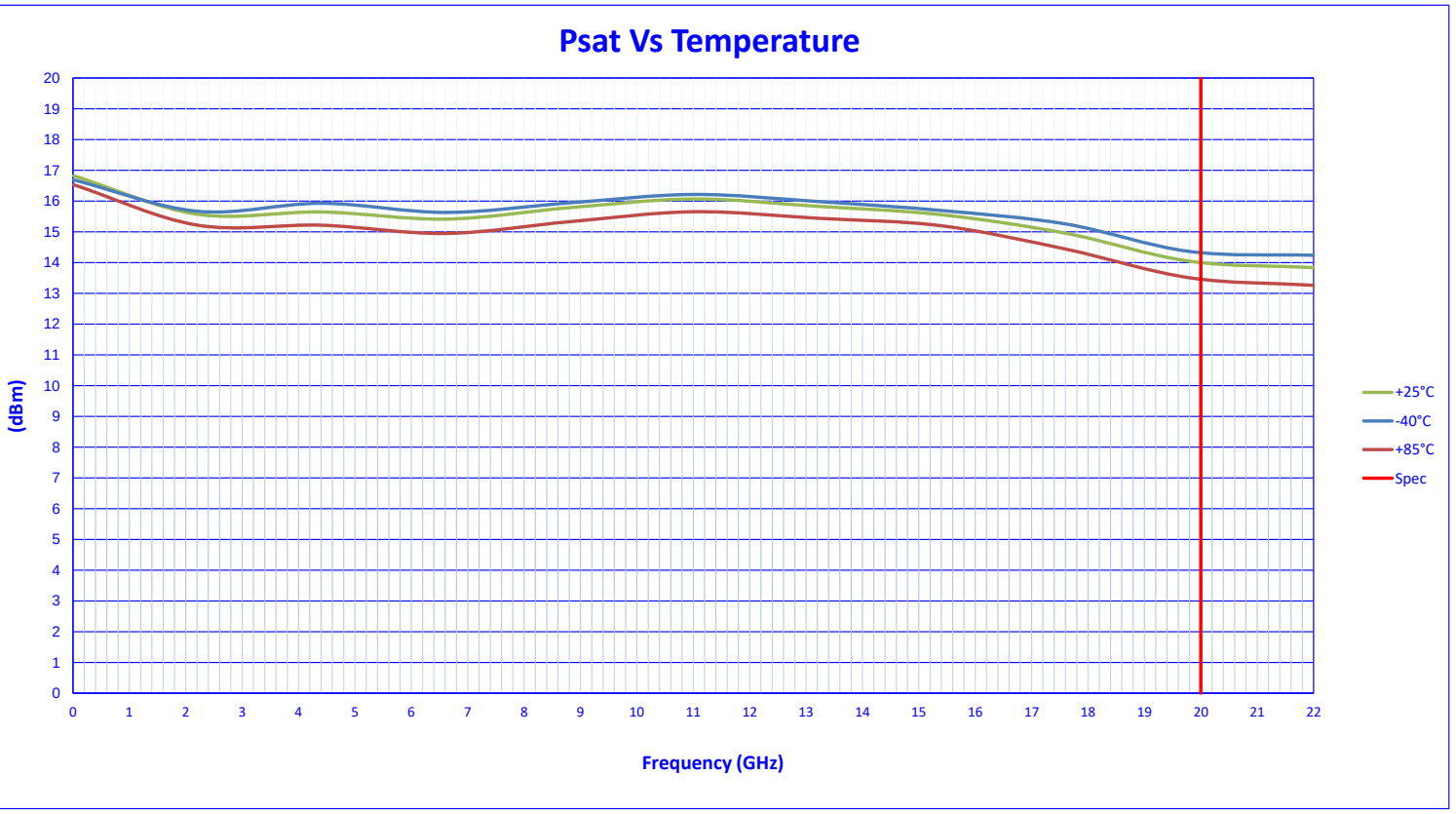

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Typical Characteristics
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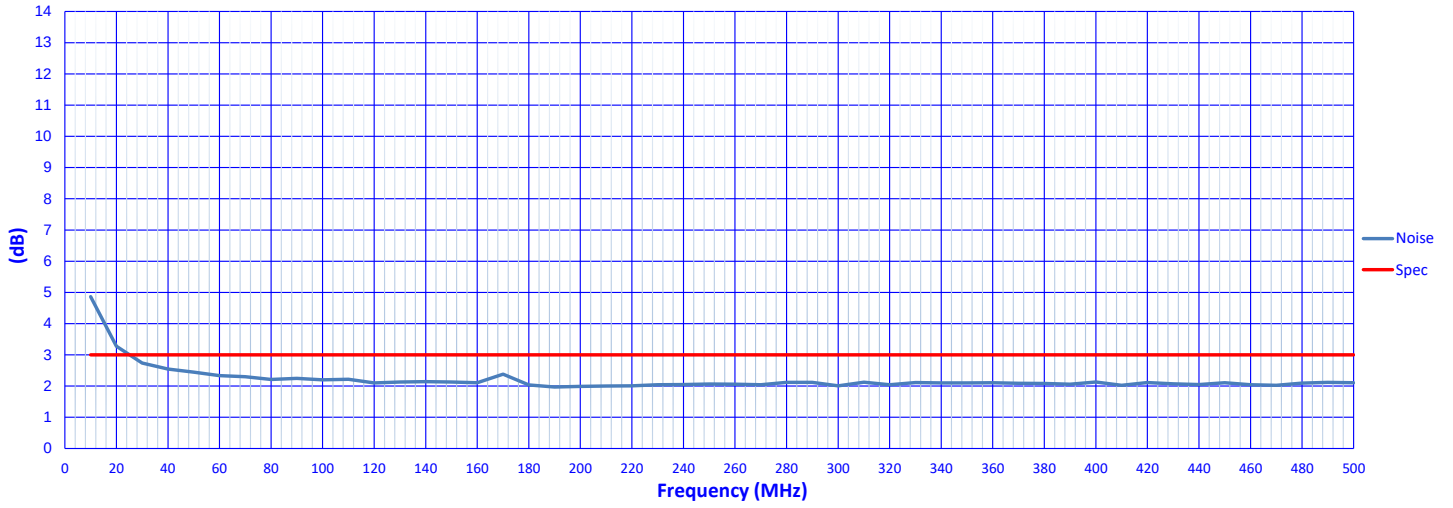
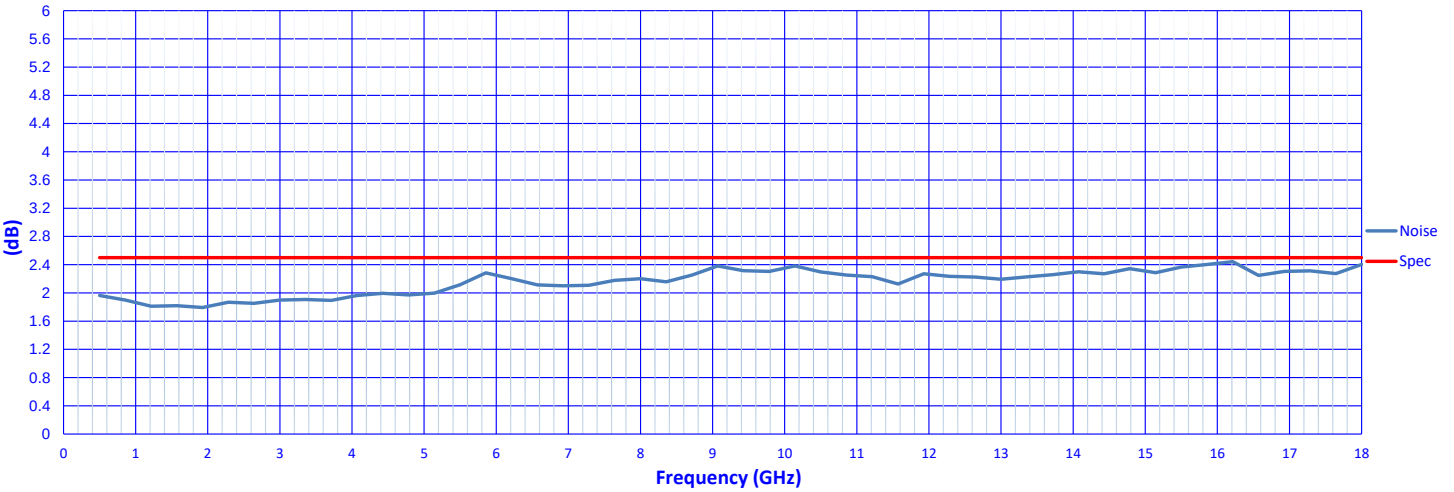
PLNA-30-10M20G-292FF

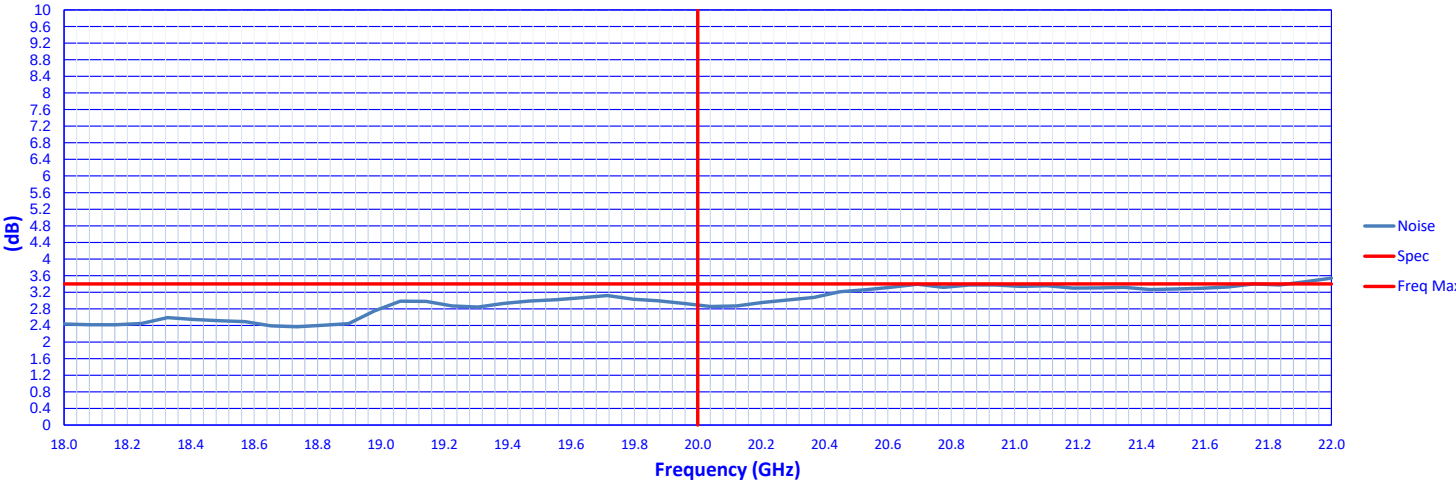
Noise Figure 10MHz to 0.5 GHz



Noise Figure 0.5 to 18 GHz



Noise Figure 18 to 20 GHz



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Typical Characteristics
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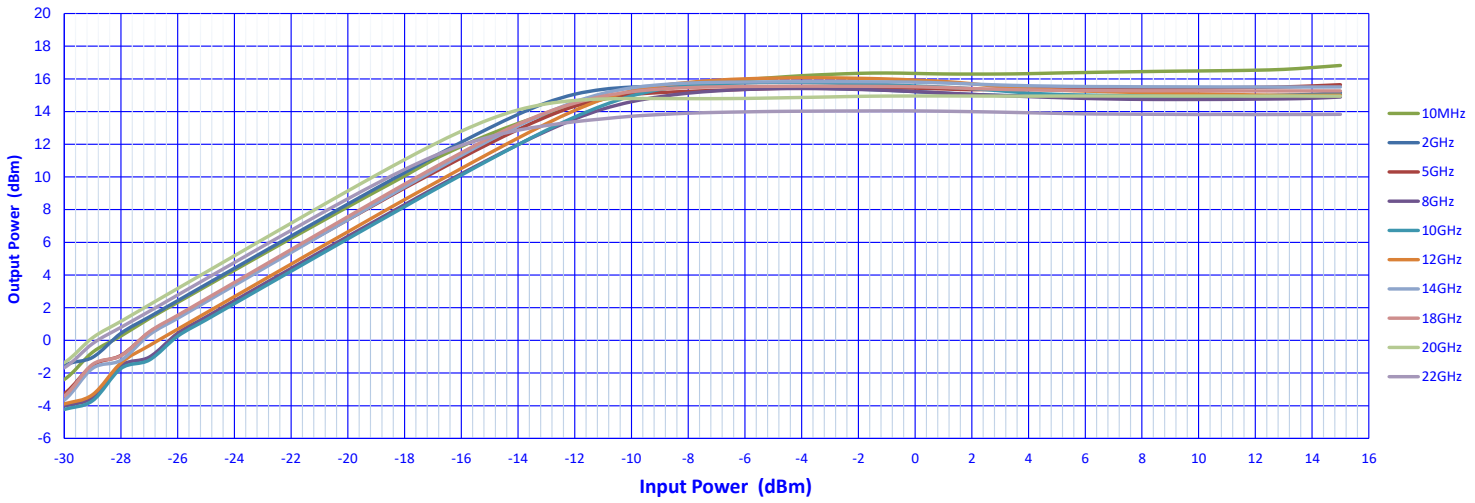
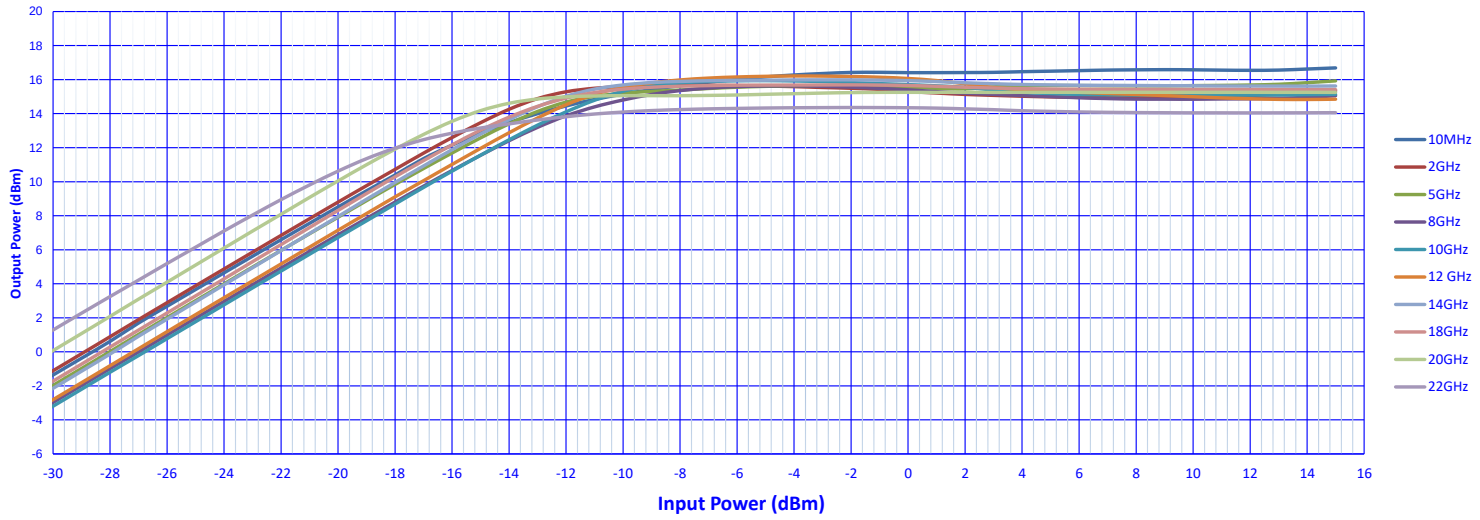
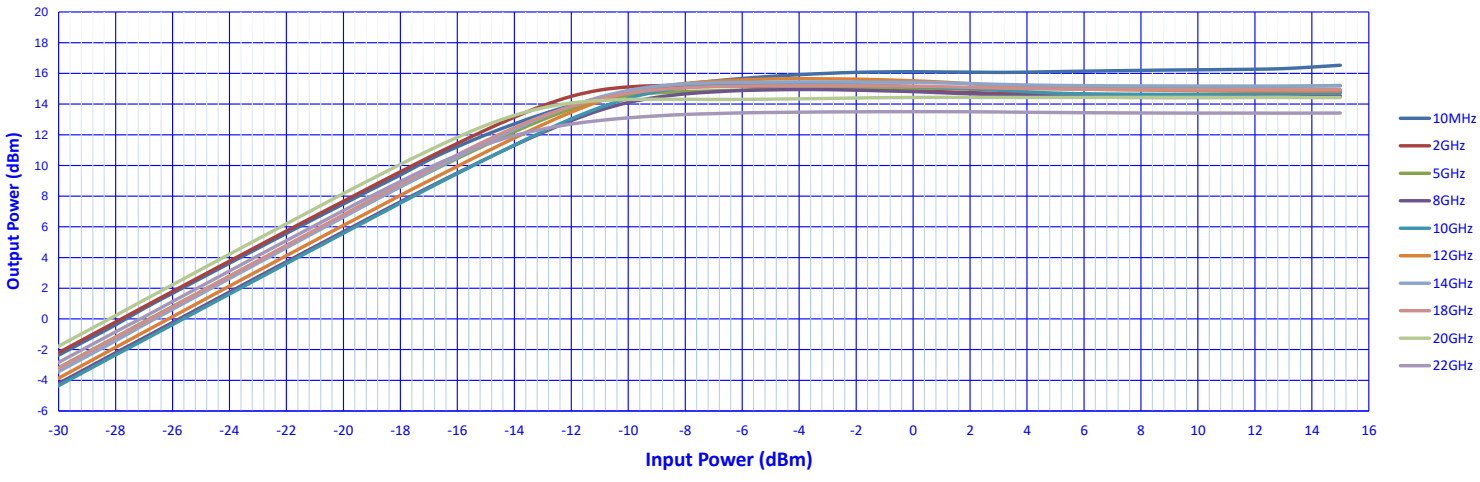
Input Power Vs Output Power (+25°C)



Input Power Vs Output Power (-40°C)



Input Power Vs Output Power



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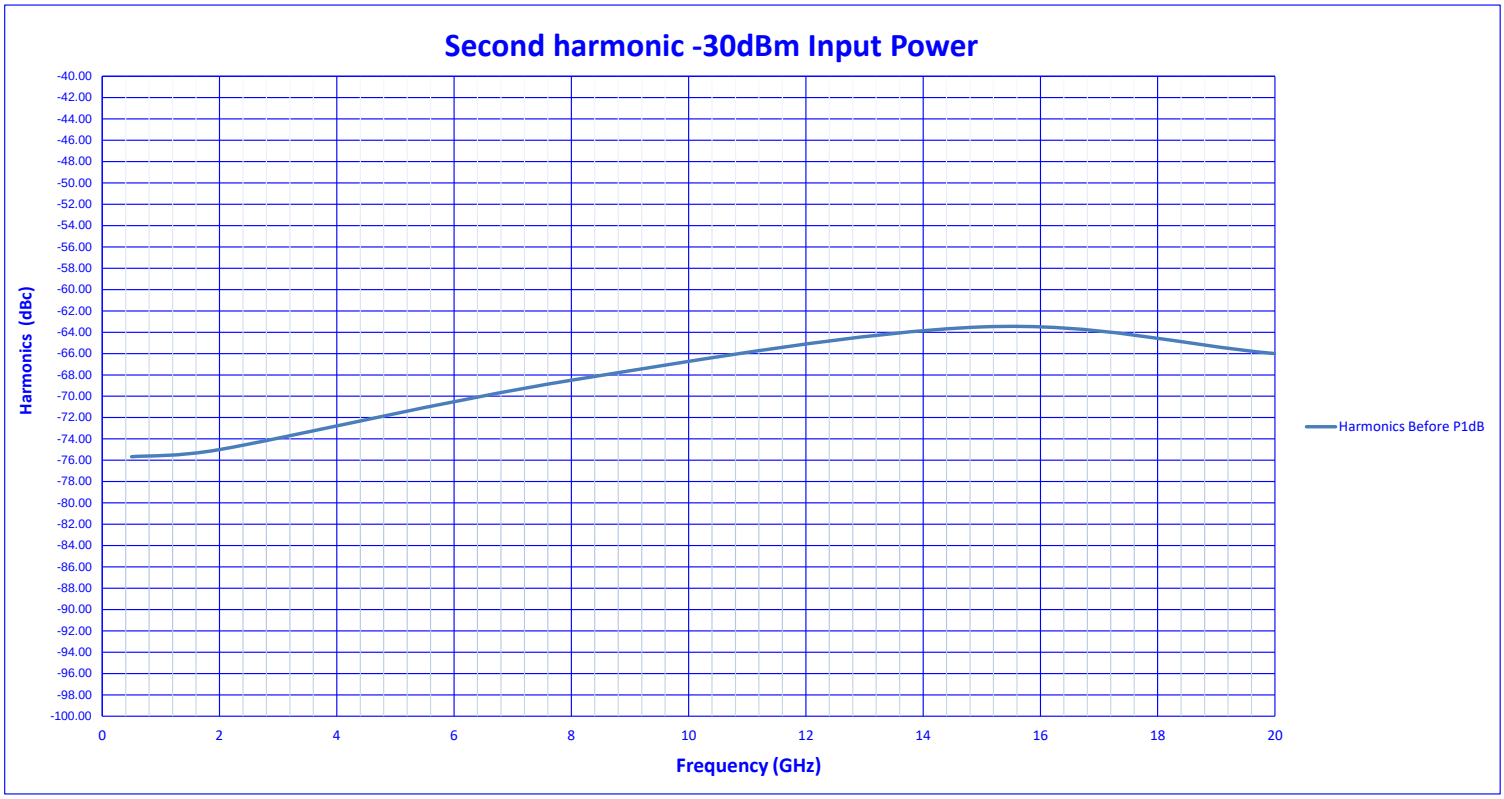

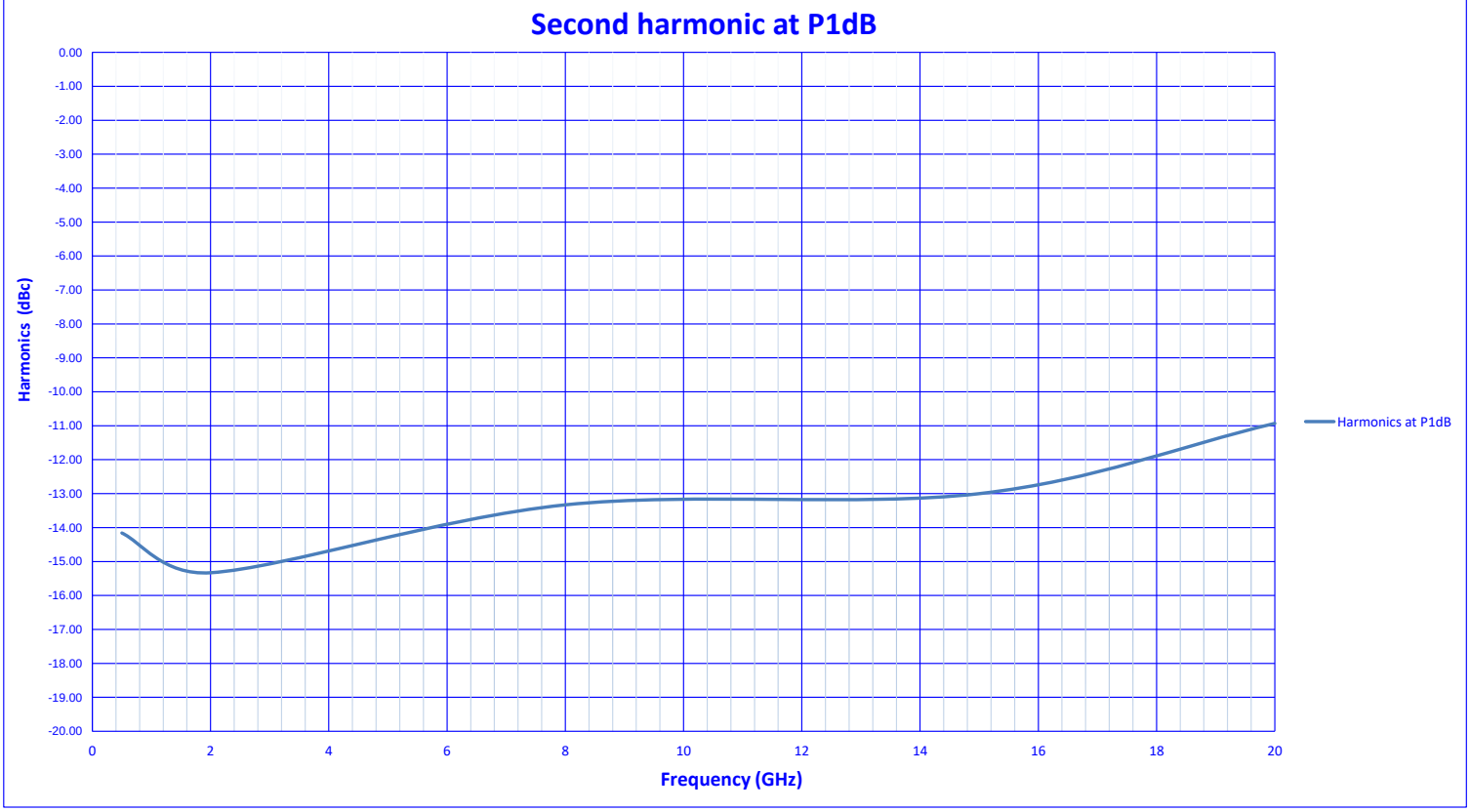

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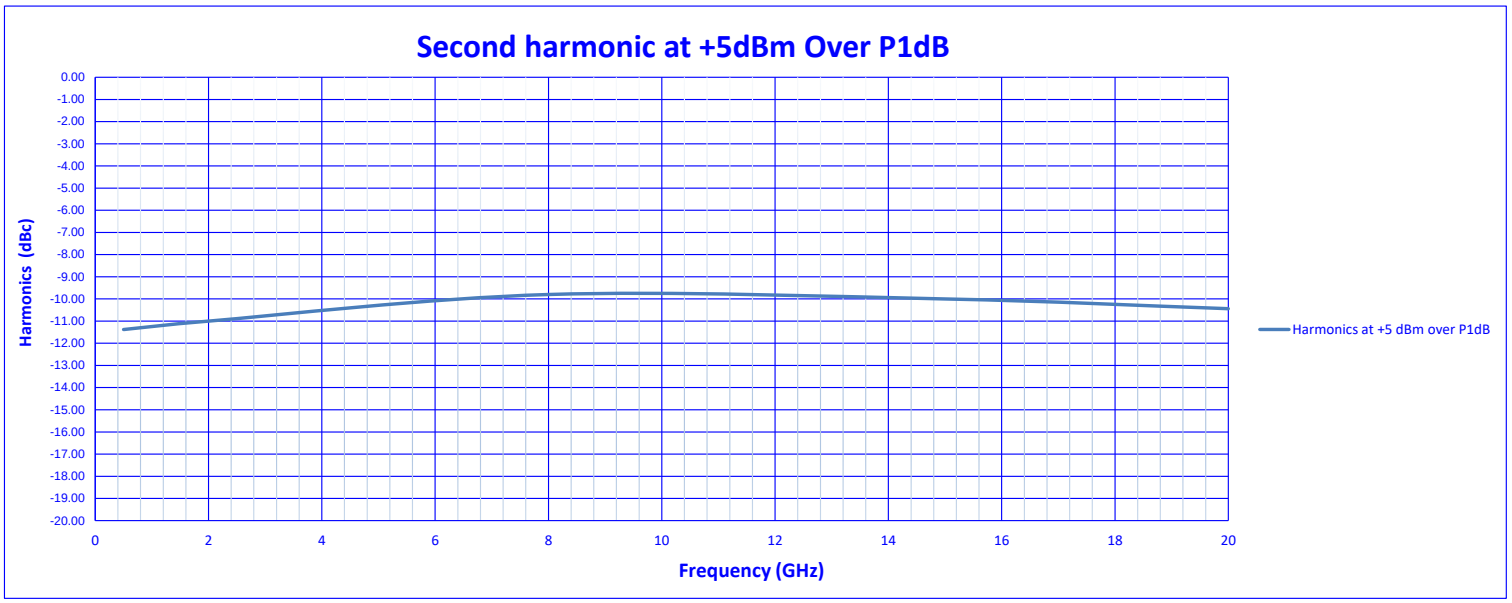

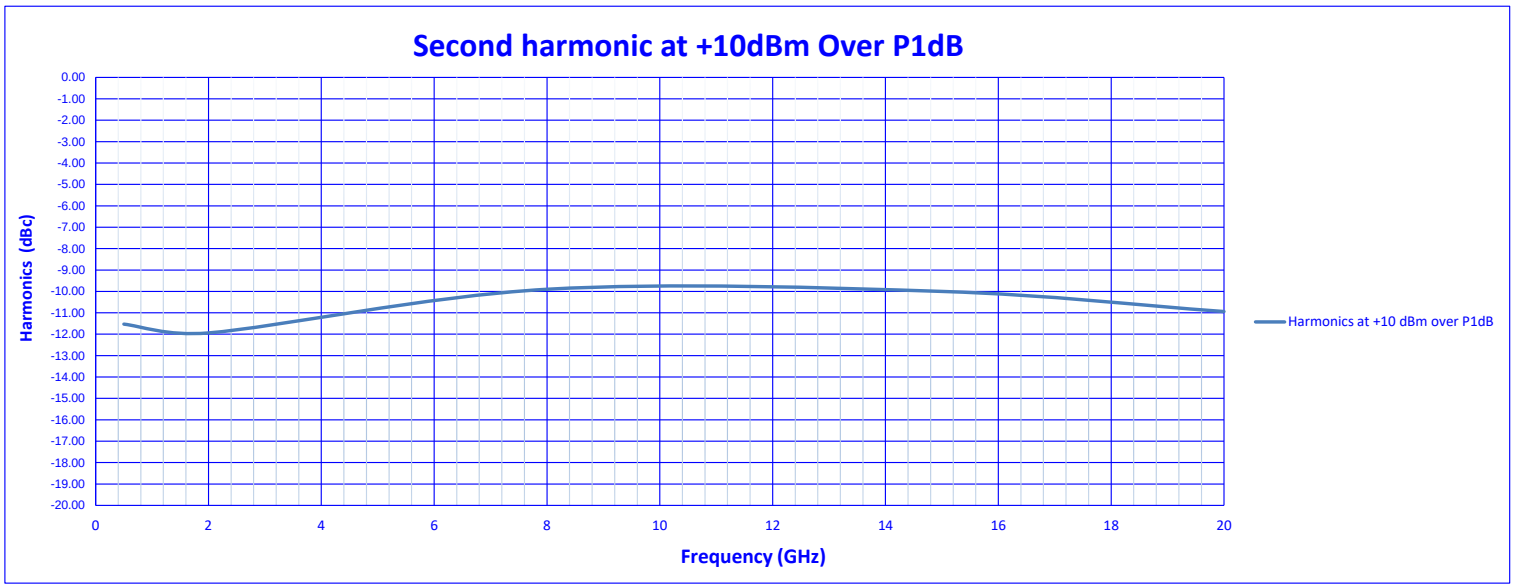

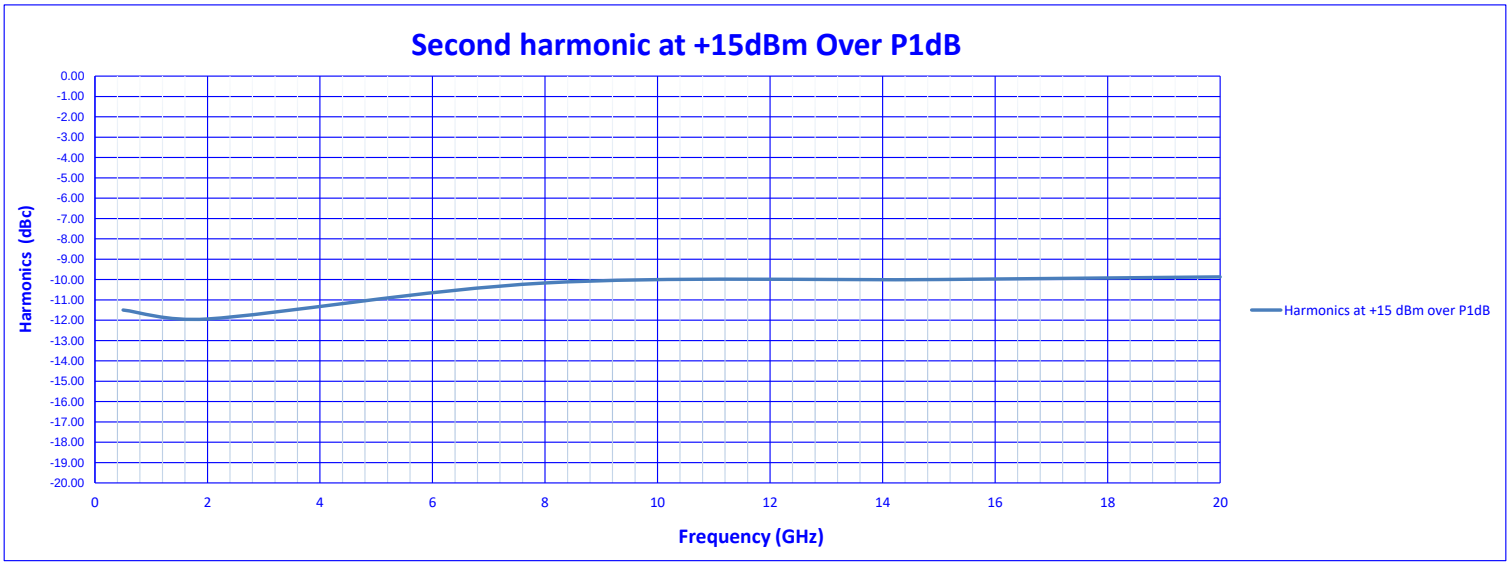

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Typical Characteristics
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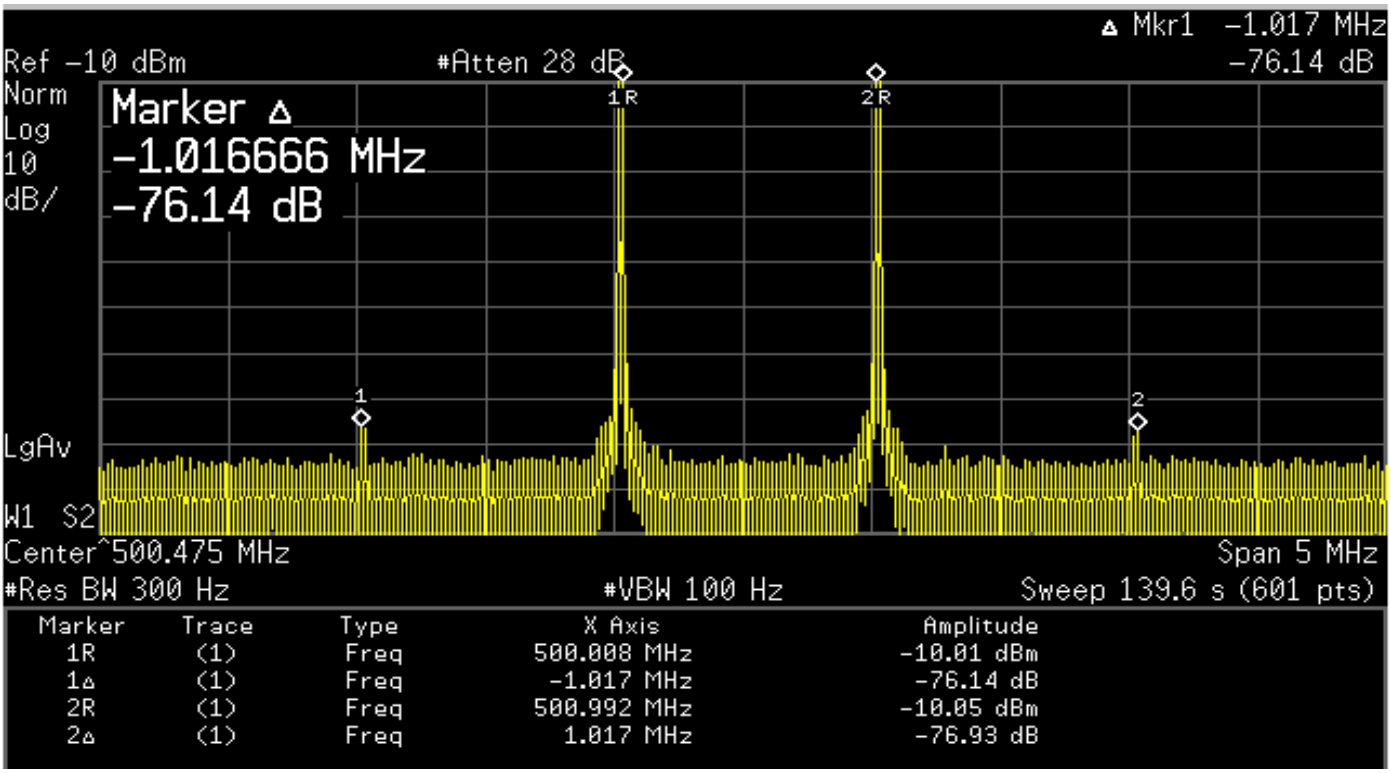
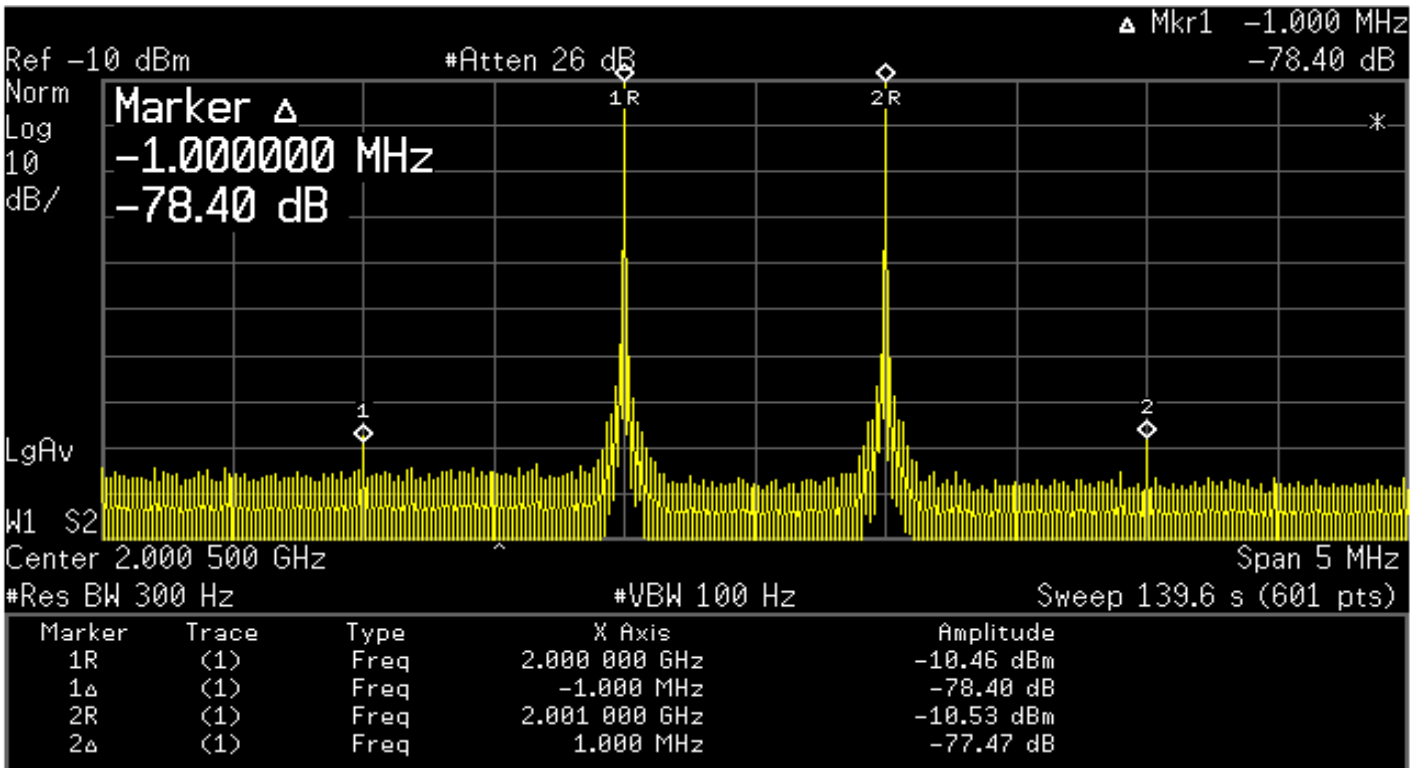
Output IP3 @ 0.5GHz



OIP3 = Pout +dBc/2 = 28.07 dBm

Output IP3 @ 2 GHz



OIP3 = Pout +dBc/2 = 28.74 dBm

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Typical Characteristics
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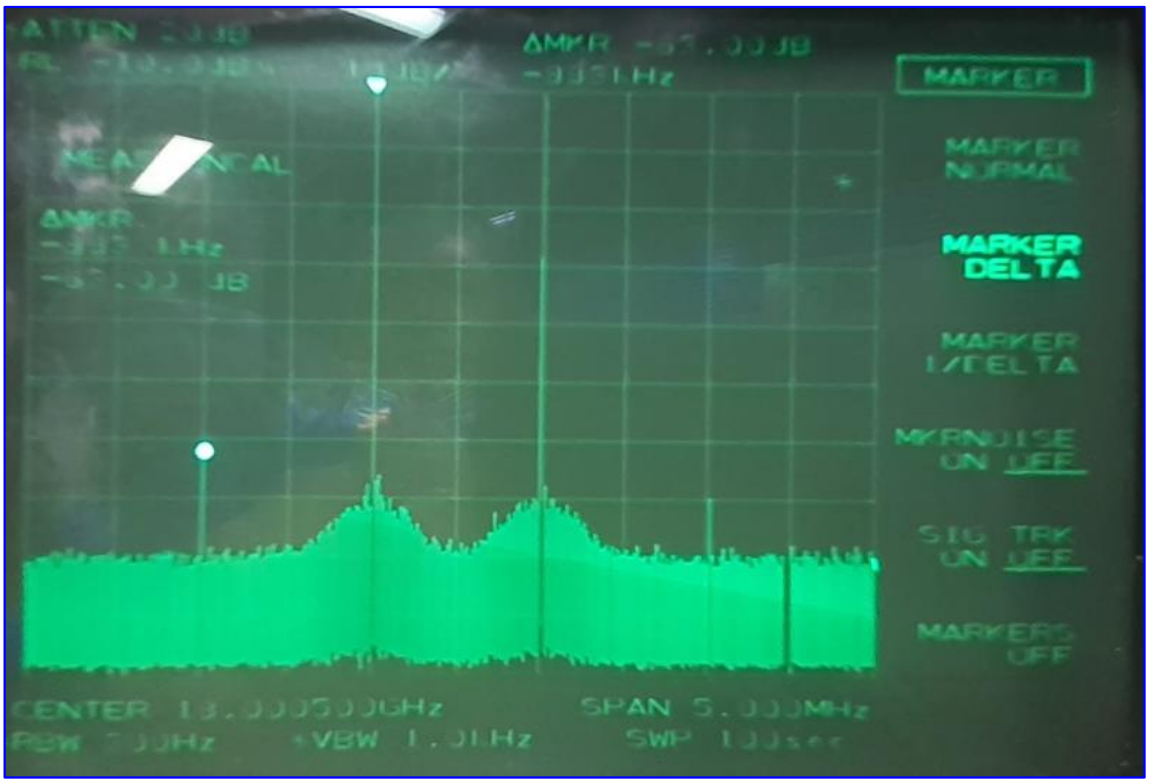
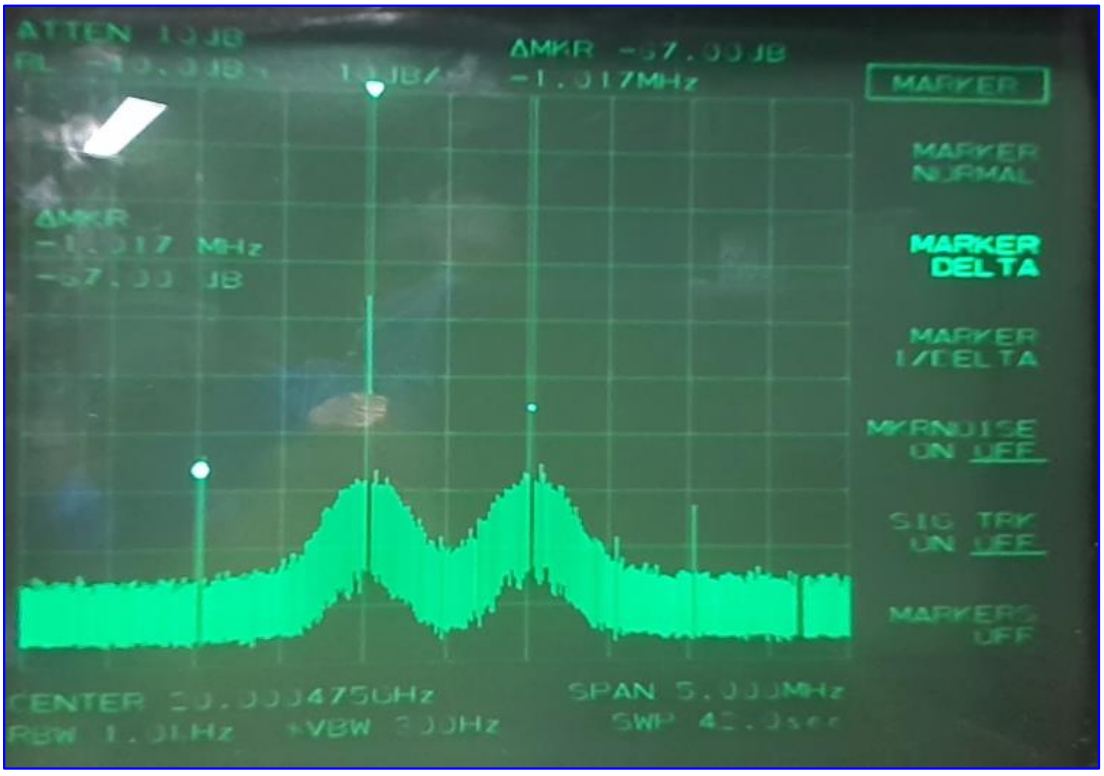
Output IP3 @ 18GHz



OIP3 = Pout +dBc/2 = 23 dBm

Output IP3 @ 20 GHz



OIP3 = Pout +dBc/2 = 23.5 dBm

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