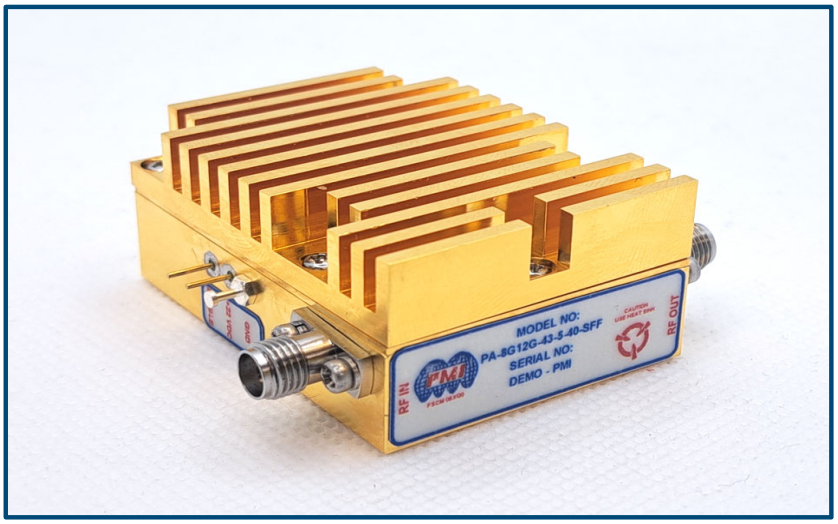
Typical Characteristics ON PA-8G12G-43-5-40-SFF-HS

PMI MODEL NUMBER PA-8G12G-43-5-40-SFF IS A HIGH POWER AMPLIFIER WITH AN OPERATING FREQUENCY OF 8 TO 12 GHz, 43 dB GAIN AND SATURATED OUTPUT POWER OF 40 dBm.



Optional Heatsink Fan

September 16, 2022

Designed By:

Engineering PMI

Drawings By:

Robert Sirk

Tested and Reported By:

Alfredo Lopez

7311-F Grove Road Frederick, MD 21704 USA Phone: (301)662-5019 Fax: (301)662-1731
Email: sales@pmi-rf.com

Typical Characteristics ON PA-8G12G-43-5-40-SFF-HS

Product Feature

ZONE	REV	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	9/22/22	
	A2	ECN # 23-0178	9/27/23	

DESCRIPTION:

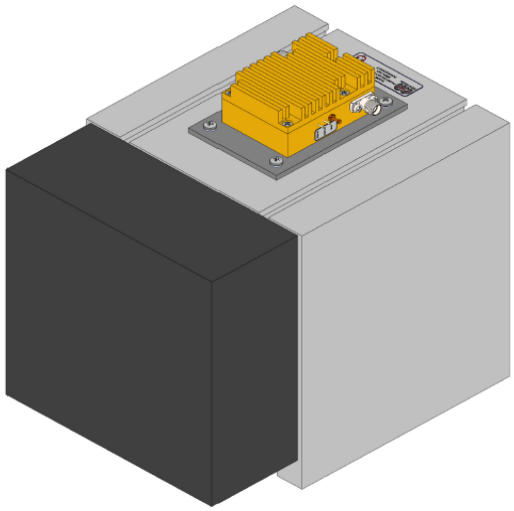
PMI MODEL NUMBER PA-8G12G-43-5-40-SFF-HS IS A HIGH POWER AMPLIFIER WITH AN OPERATING FREQUENCY OF 8 TO 12 GHz, 43 dB GAIN AND SATURATED OUTPUT POWER OF 40 dBm.

SPECIFICATIONS:

- FREQUENCY RANGE:..... 8.0 TO 12.0 GHz
- GAIN:..... 43 dB TYP
  40 dB MIN
- VSWR (INPUT/OUTPUT):..... 2.0 : 1 MAX
- NOISE FIGURE:..... 5.0 dB MAX
- PSAT:..... 40 dBm (10W) TYP
  37 dBm MIN
- INPUT POWER:..... 20 dBm MAX
- SUPPLY*:..... +22 VDC MAX
- POWER AMP CONTROL (ENABLE):..... "1" = +3V ON
  "0" = 0 V OFF
- CONNECTORS:..... SMA FEMALE REMOVEABLE
- FINISH:..... GOLD PLATED
- OPTION:..... UNIT WITHOUT HEATSINK:
  PA-8G12G-43-5-40-SFF

Typical Current	
Quiescent current and maximum current	
-40°C	
-30 dBm Input Power	1,860 mA
+20 dBm Input Power	2,550 mA
+25°C	
-30 dBm Input Power	2,150 mA
+20 dBm Input Power	3,200 mA
+85°C	
-30 dBm Input Power	2,400 mA
+20 dBm Input Power	3,300 mA

*LOWER VOLTAGE WILL RESULT IN LOWER PSAT. GAIN WILL STAY CONSTANT DOWN TO +20 VDC.



ENVIRONMENTAL RATINGS:

- TEMPERATURE:..... -40°C TO +85°C (OPERATING)
  -55°C TO +125°C (STORAGE)

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

PMI CONFIDENTIAL AND PROPRIETARY

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

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± .XX ± .XXX ± DECIMALS ± .XX ± .XXX ± ANGLES ±

APPROVALS	DATE
DRAWN: R. SIRK	9/22/22
REDRAWN	
ISSUED	

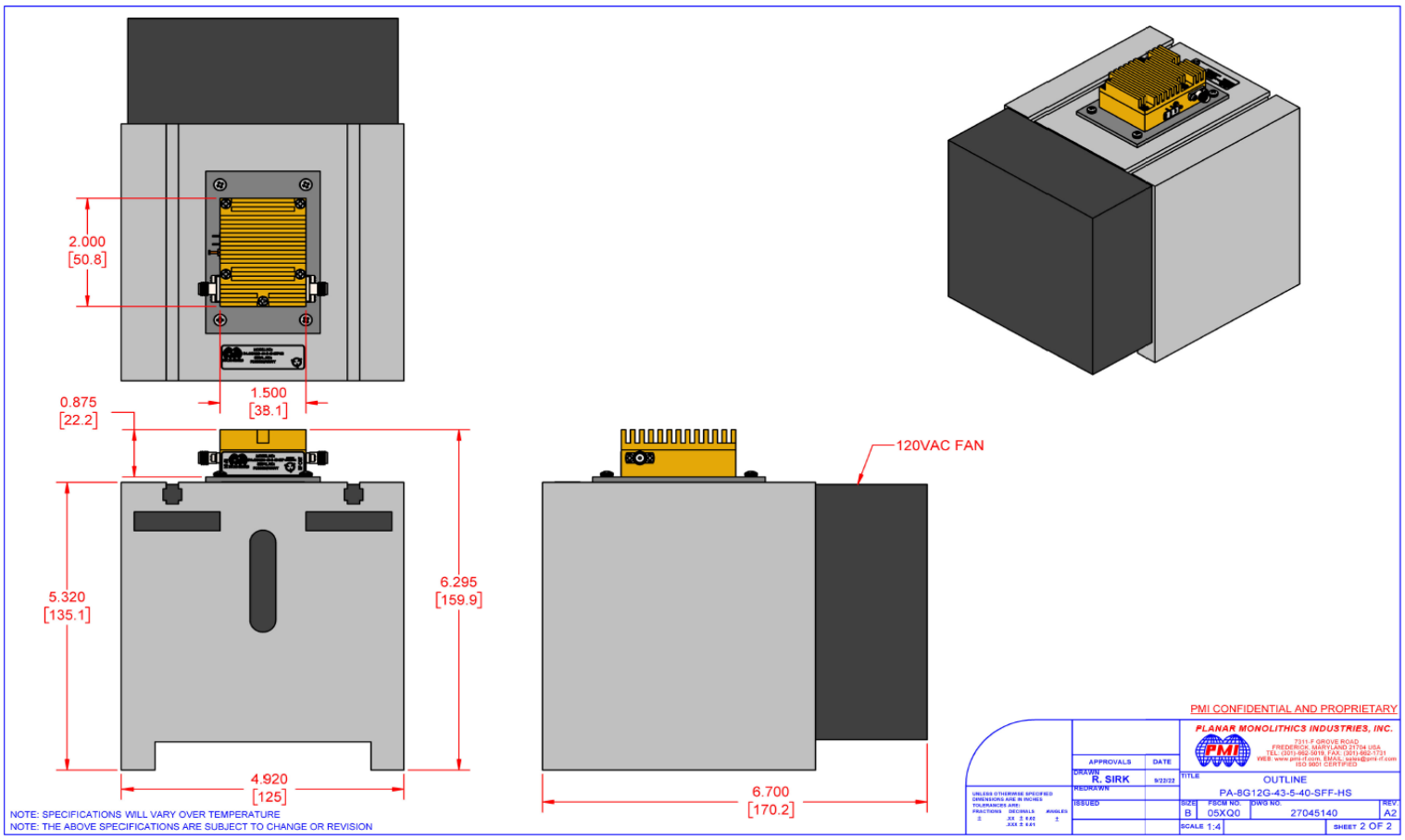
TITLE: OUTLINE
PA-8G12G-43-5-40-SFF-HS

SIZE	FSCM NO.	DWG NO.	REV.
B	05XQ0	27045140	A2

SCALE 1:4 SHEET 1 OF 2

Typical Characteristics ON PA-8G12G-43-5-40-SFF-HS

Mechanical Drawing



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Typical Characteristics ON PA-8G12G-43-5-40-SFF-HS

Technical Specifications

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	Test Results			QA QC
			+25°C	-40°C	+85°C	
1	Frequency Range:	8.0 - 12.0 GHz	**8.0 - 12.0 GHz**	**8.0 - 12.0 GHz**	**8.0 - 12.0 GHz**	
2	Gain:	43 dB Typ. 40 dB Min.	**43.71 dB See Graph**	**45.31 dB See Graph**	**40.96 dB See Graph**	
3	VSWR: (Input/Output)	2.0:1 Max.	**1.83 :1 See Graph**	**1.8 :1 See Graph**	**1.85 :1 See Graph**	
4	Noise Figure:	5.0 dB Max	**2.88 dB See Graph**	**2.72 dB See Graph**	**3.49 dB See Graph**	
5	PSAT:	40 dBm (10W) Typ. 37 dBm Min	**39.37 dBm Max. 38.51 dBm Min. See Graph**	**40.06 dBm Max. 39.32 dBm Min. See Graph**	**38.71 dBm Max. 37.73 dBm Min. See Graph**	
6	Input Power:	20 dBm Max.	**Pass +20 dBm See Graph**	**Pass +20 dBm See Graph**	**Pass +20 dBm See Graph**	
7	DC Supply:	+22 VDC MAX	**+22 VDC & 2,150 mA**	**+22 VDC & 1,860 mA**	**+22 VDC & 2,400 mA**	
8	Control (Enable)	"1" = +3V ON "0" = 0 V OFF	**Pass**	**Pass**	**Pass**	

Typical Current

Quiescent current and maximum current	
-40°C	
-30 dBm Input Power	**1,860 mA**
+20 dBm Input Power	**2,550 mA**

+25°C	
-30 dBm Input Power	**2,150 mA**
+20 dBm Input Power	**3,200 mA**

+85°C	
-30 dBm Input Power	**2,400 mA**
+20 dBm Input Power	**3,300 mA**

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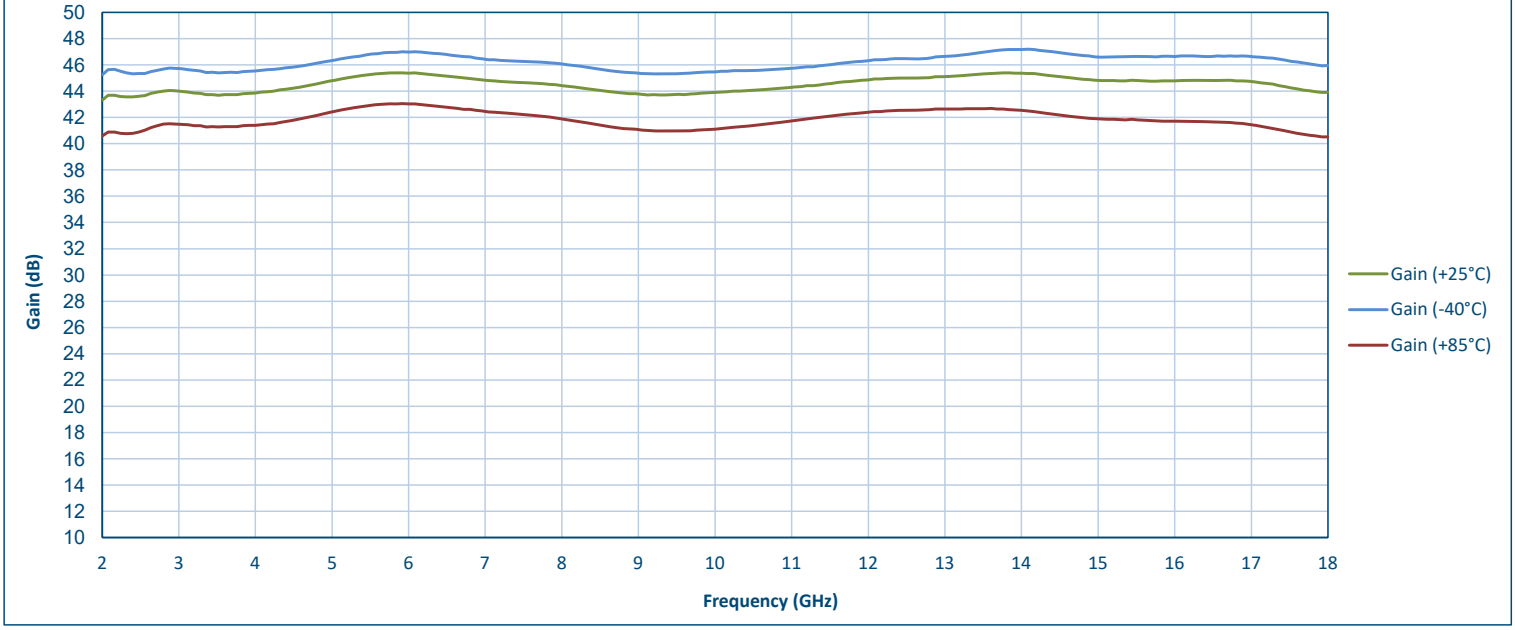
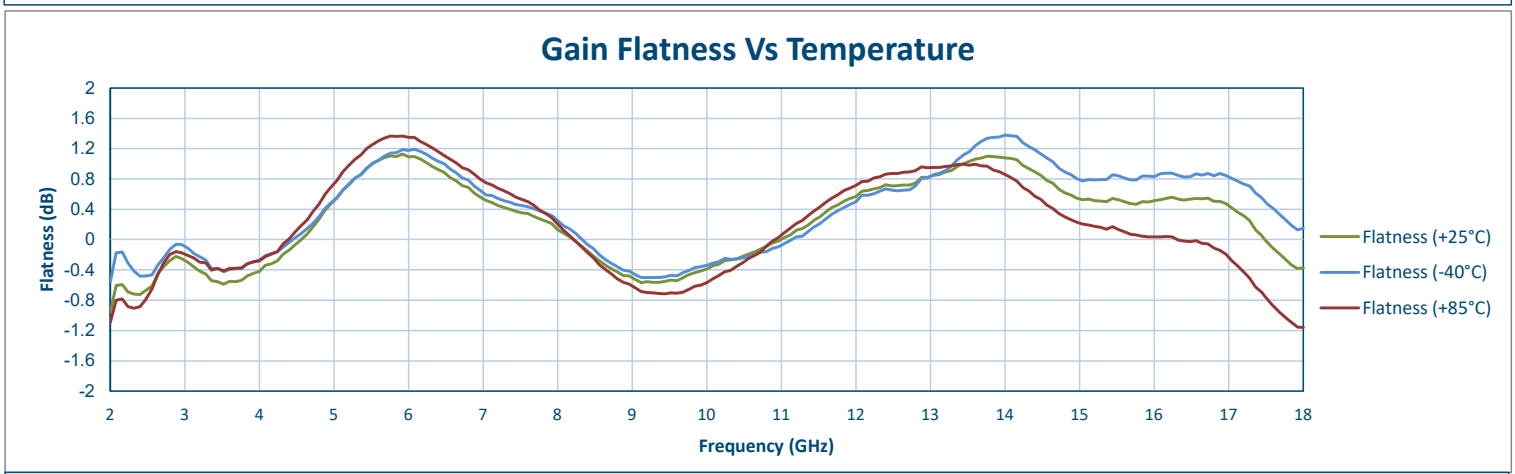
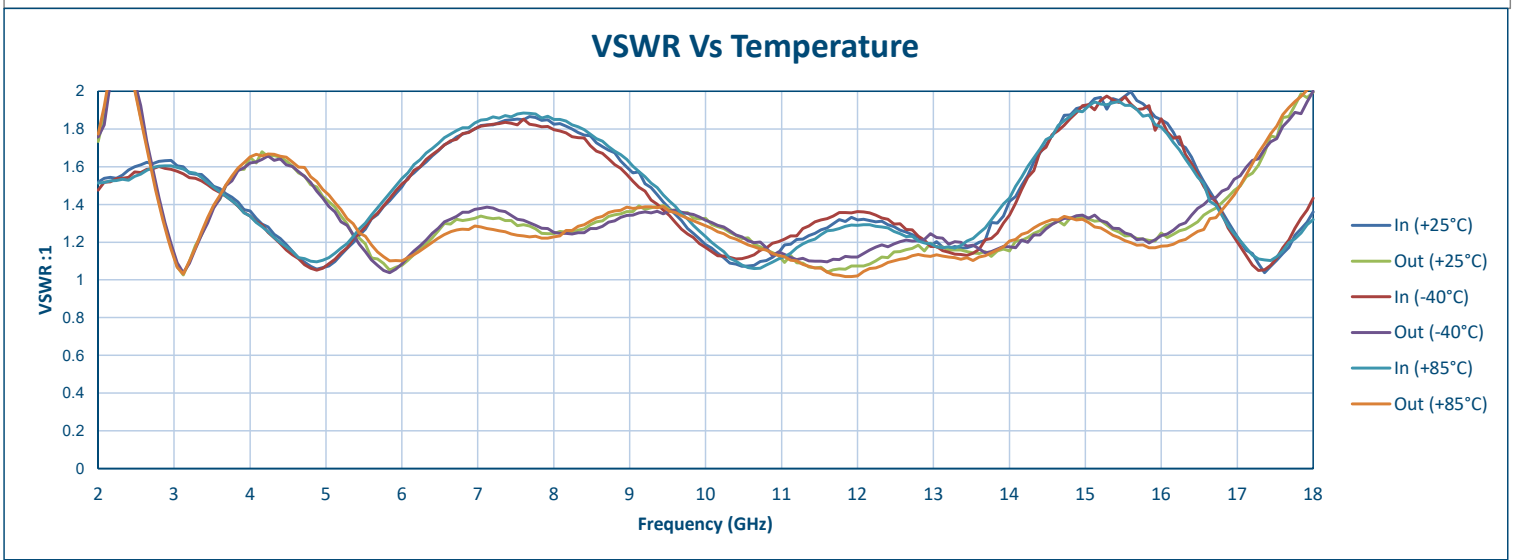
Typical Characteristics ON PA-8G12G-43-5-40-SFF-HS







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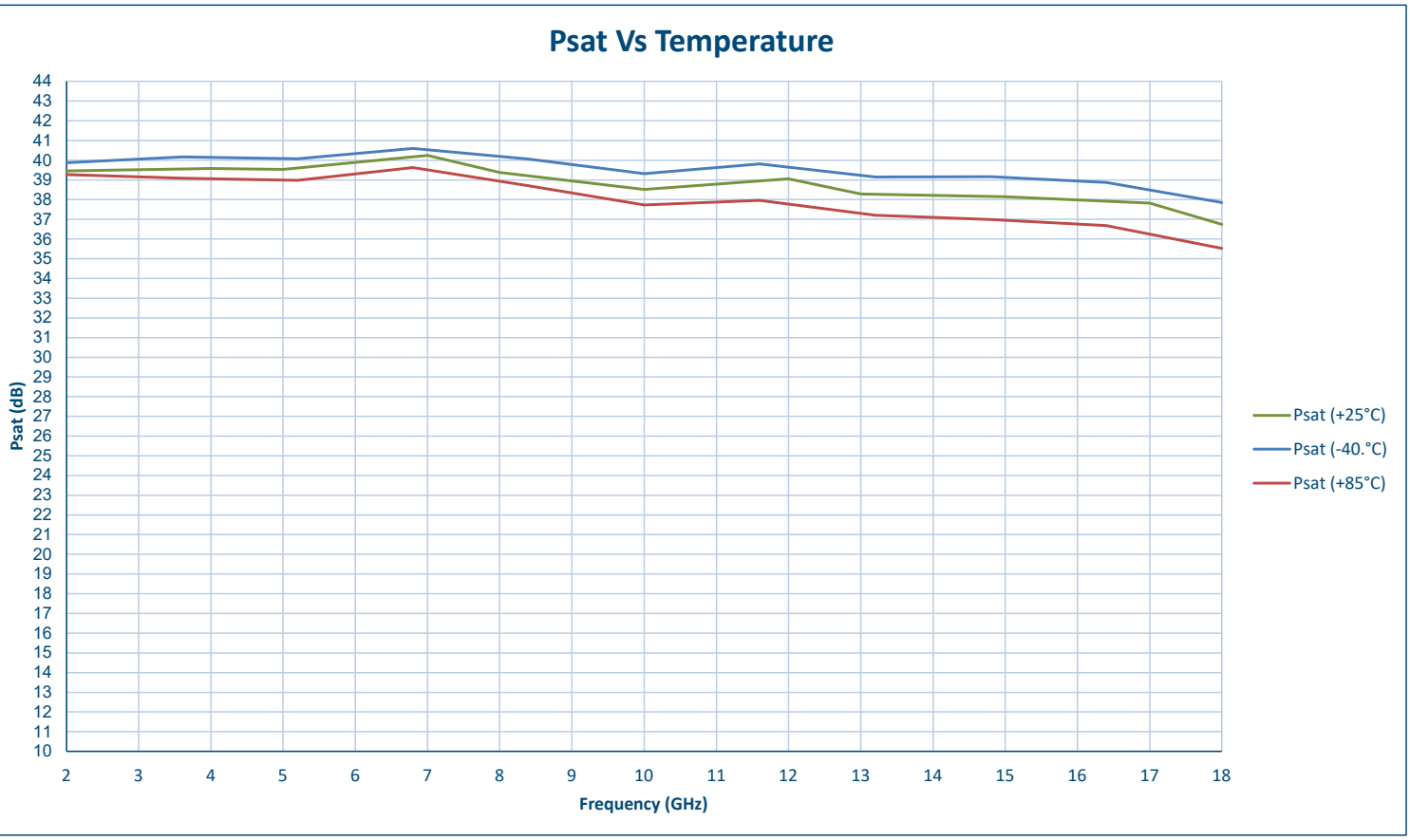
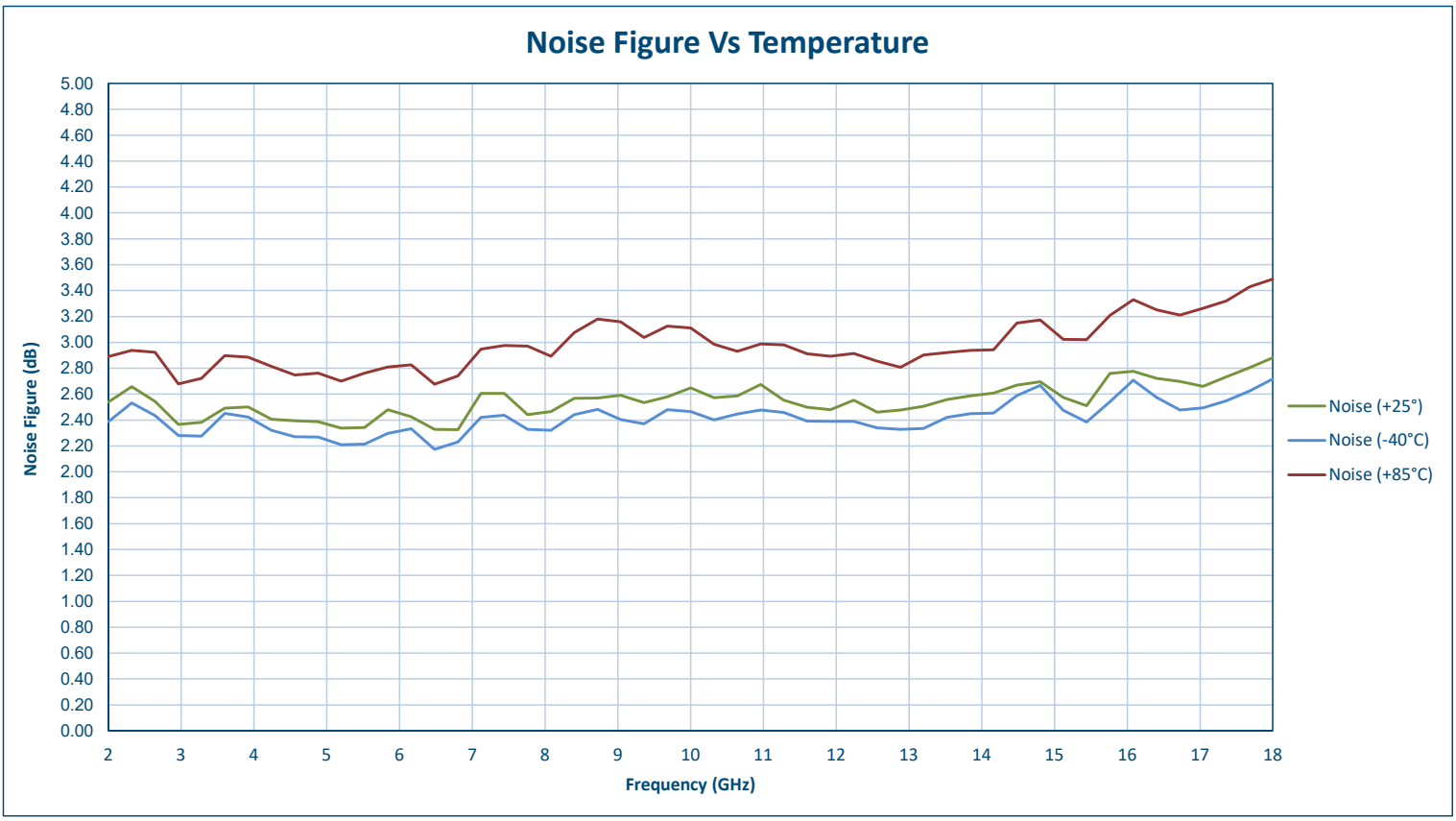
Typical Characteristics ON PA-8G12G-43-5-40-SFF-HS





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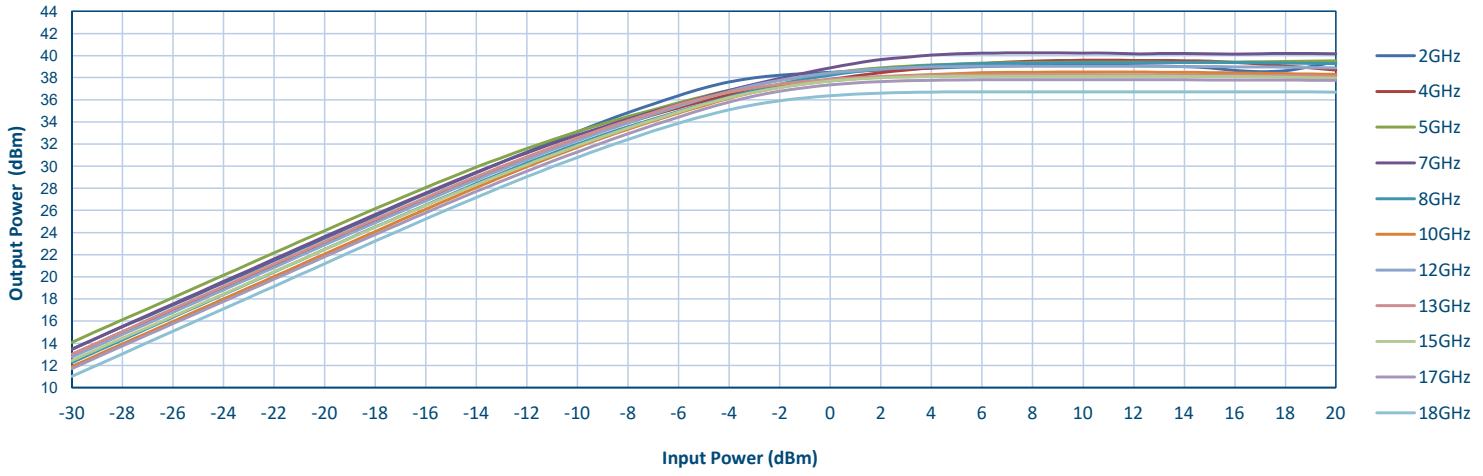
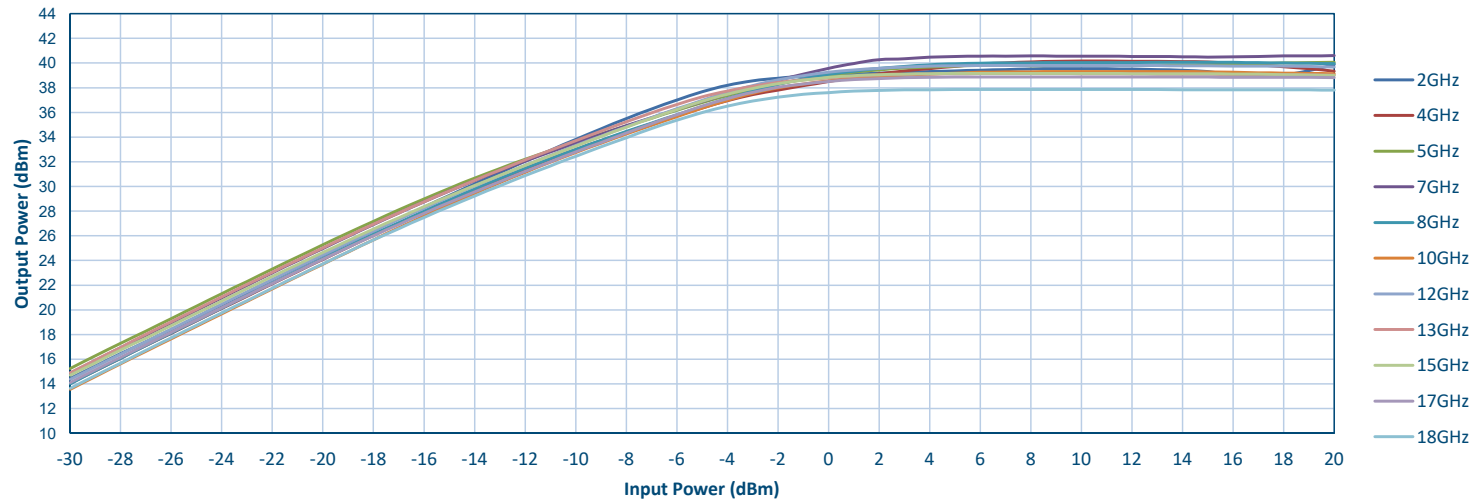
Typical Characteristics ON PA-8G12G-43-5-40-SFF-HS

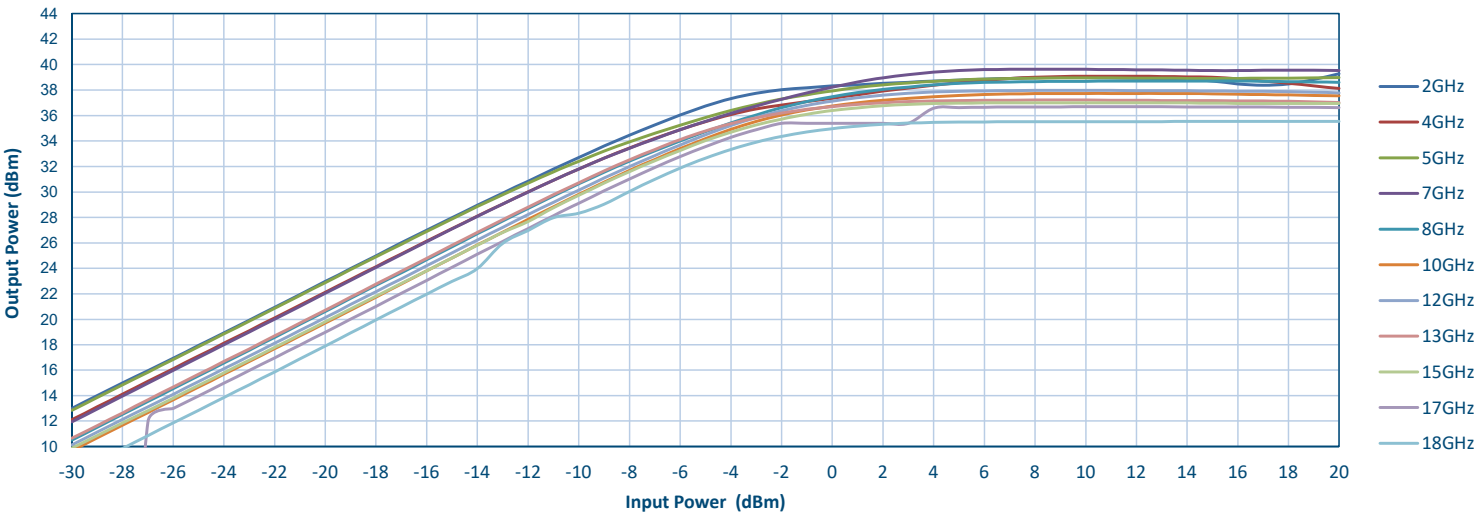
Input Power Vs Output Power (+25°C)



Input Power Vs Output Power (-40°C)



Input Power Vs Output Power (+85°C)



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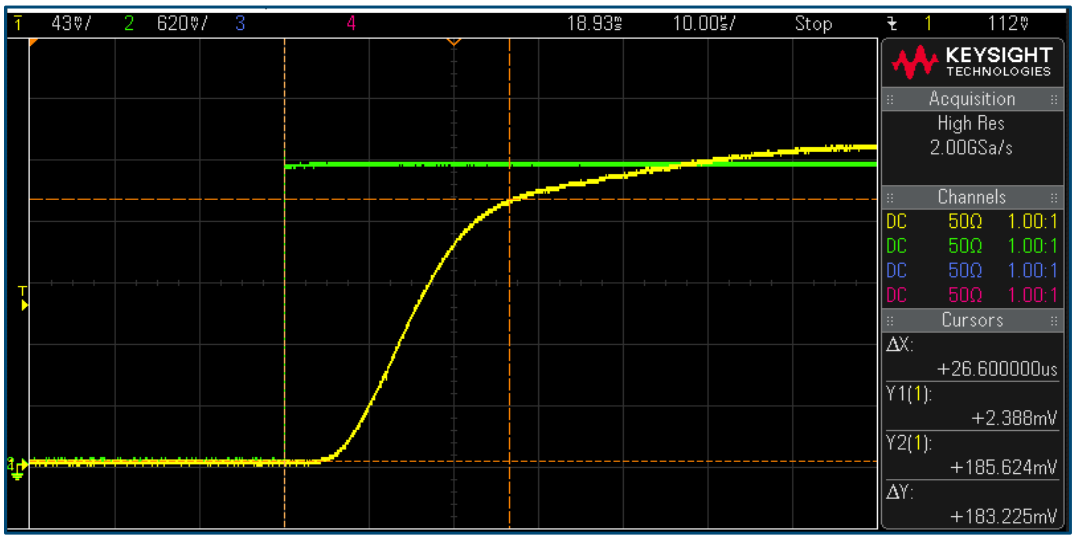
Typical Characteristics ON PA-8G12G-43-5-40-SFF-HS

Switching Speed
With Enable Control

Speed ON

PW - 1 ms
PRF - 100 Hz
Duty Cycle - 10%

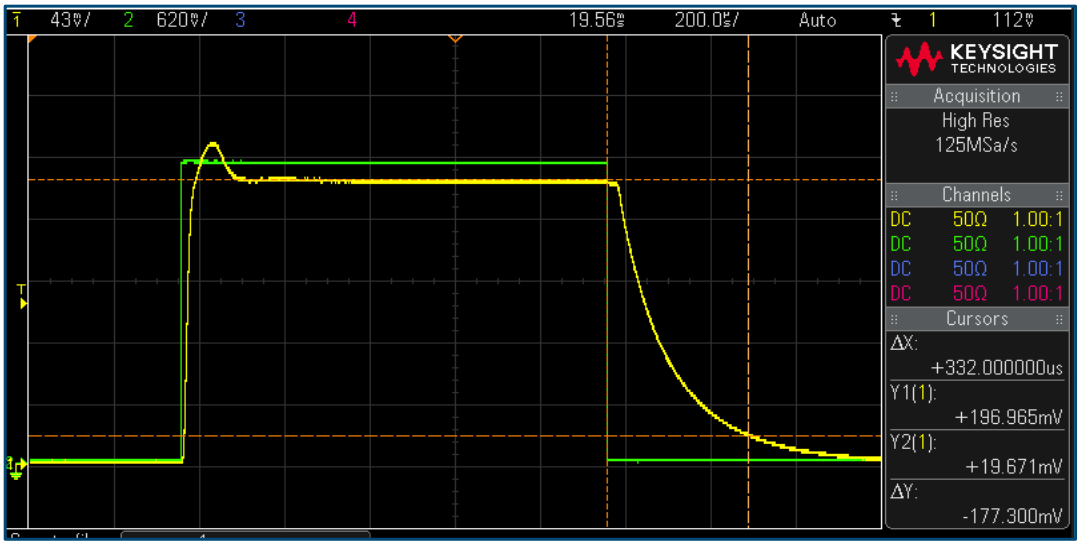
10µs Per Div.



Speed OFF

PW - 1 ms
PRF - 100 Hz
Duty Cycle - 10%

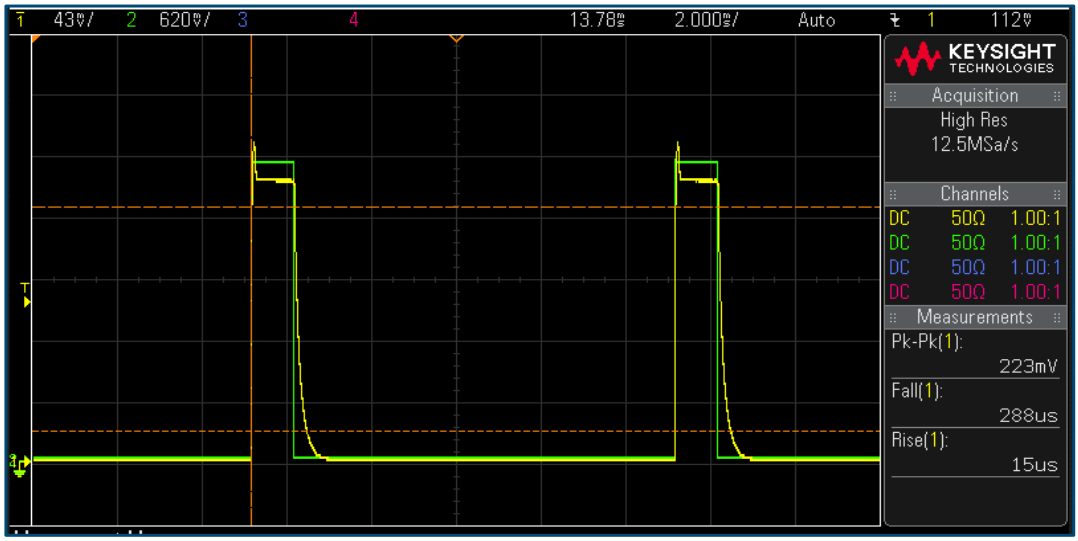
200 µs Per Div.



Full Pulse

PW - 1 ms
PRF - 100 Hz
Duty Cycle - 10%

200 µs Per Div.



Green Trace - TTL Signal
Yellow Trace - RF Signal with Diode Detector

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Typical Characteristics ON PA-8G12G-43-5-40-SFF-HS

Rise Time
With Pulsed RF Signal Input
Maximun Output Power of the Amplifier

PW - 400 ns
PRF - 500 KHz
Duty Cycle - 20%

2 ns Per Div.

Measured Value - 3.25 ns

Fall Time
With Pulsed RF Signal Input

PW - 400 ns
PRF - 500 KHz
Duty Cycle - 20%

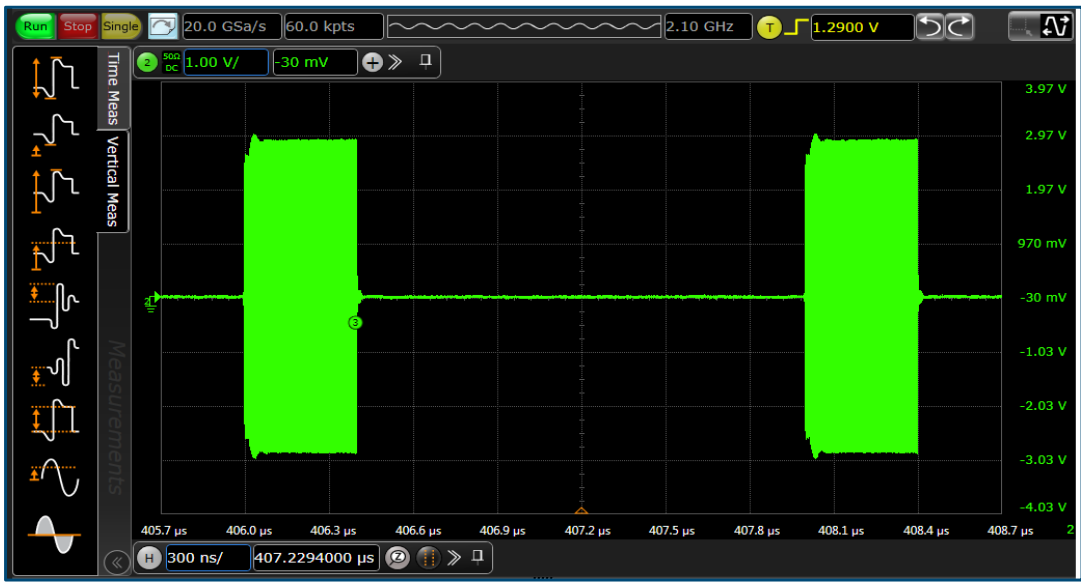
5 ns Per Div.

Measured Value - 3.91 ns

Full Pulse
With Pulsed RF Signal Input

PW - 400 ns
PRF - 500 KHz
Duty Cycle - 20%

5 ns Per Div.



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