
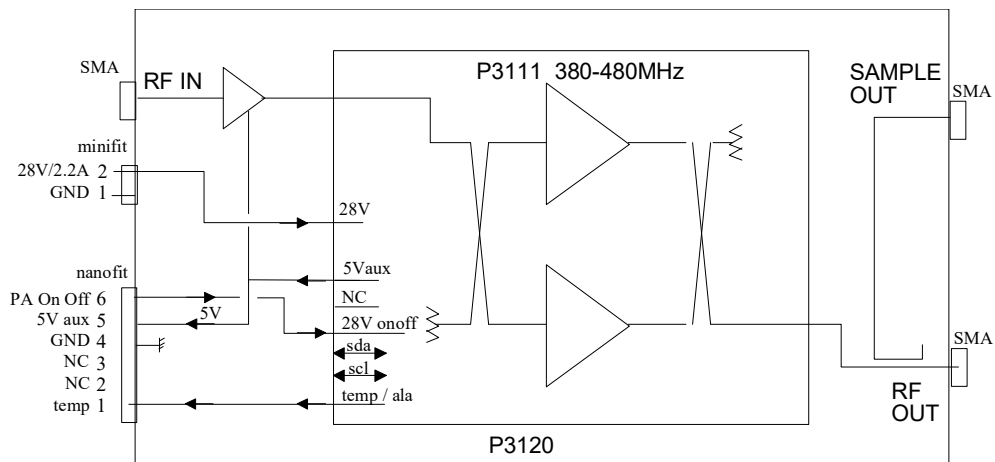


# LPA Concepts

<b>LINEAR POWER AMPLIFIER</b>	<b>LPA-AH0-020AA-0380M-0480M-28-01</b>
<b>P3120</b>	
<b>FEATURES</b> <ul style="list-style-type: none"> <li>◆ OIP3 = +56dBm; 380-480MHz</li> <li>◆ Gain = 44 dB; 50ohms input/output</li> <li>◆ +28V / 2.2A supply, Class A</li> <li>◆ Protection against reverse voltage, over current and over temperature</li> <li>◆ Alarm/Temp line, ON/OFF / Reset line</li> <li>◆ Unconditionally stable</li> <li>◆ RoHS compliant</li> </ul>	<p style="text-align: center;"><b>AH0 PACKAGE</b></p>  <p style="text-align: center;"><b>APPLICATIONS</b></p> <ul style="list-style-type: none"> <li>◆ Instrumentation</li> <li>◆ Communications</li> </ul>

## BLOCK DIAGRAM



Specifications and information are subject to change without notice

# LPA Concepts

## Electrical characteristics: 50 ohms; +28V; -25°C to +85°C (1)

Ref	parameter	conditions	note	min	typ	max	units
1	Bandwidth			380		480	MHz
3	Gain small signal	430 MHz; 50°C			44		dB
4	Gain variation vs frequency	380 MHz - 480 MHz				2	dBpp
5	Gain variation vs temperature	-25°C to +85°C	2		2		dB
6	Input return loss	50 ohms				-15	dB
7	Output return loss	50 ohms				-15	dB
8	Sample output signal	Level relative to output			-33		dBc
9	Peak envelope power	IMD3 = -30 dBc	5		40		W
10	Instantaneous bandwidth	Fctr=430MHz	3		50		MHz
11	output intercept point 3 <sup>rd</sup> order	2 CW IMDat -60dBc 430MHz			+56		dBm
12	OIP3 flatness over frequency	380-480MHz			2		dBm
13	Multi tones intermodulation	10 tones 1MHz spacing,4Wave	4		-30	-27	dBc
14	Current consumption	28V, idle			2.2		A
15	Current consumption	28V, 20W CW			2.7		A
16	Shut down current	On overdrive			3.8		A

1. Unless otherwise specified
2. Module Temperature
3. 2 tones 405MHz 455MHz 10W each IMD<-30dBc
4. peaked phases
5. 2 tones 10W each 10MHz spacing

## Maximum ratings

Ref	parameter	conditions	note	min	Nom	max	units
1	Operating temperature	Flange temperature		-40°C		+90	°C
2	Supply voltage			26	28	32	V
3	Current available on 5V aux					200	mA
4	Input power	CW				+3	dBm

## Protections

Ref	parameter	description	remarks
1	Overcurrent	Shut down if current > 3.8 A	
2	Temperature	Shut down if temp > 80°C	PA On/Off to recover

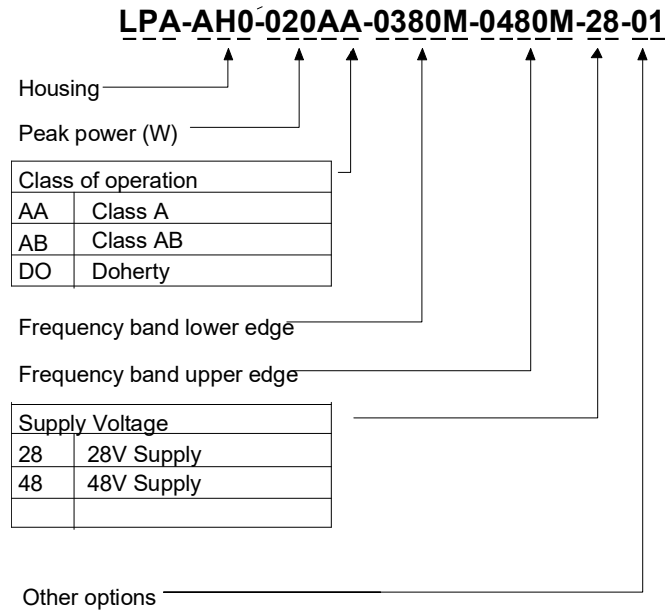
## Monitoring & control

Ref	characteristic	description	remarks
1	PA On/Off	28V switching	Used for reset
2	Temperature	Analog output	-40°C to +100°C (TMP20)
3	Alarm	Temp line pulled low on alarm	

Specifications and information are subject to change without notice

# LPA Concepts

Part numbering:



## Support material

Ref	Characteristic	Description	Remarks
1	T280	Analog control board	Supplied by 5V aux from amplifier
2			
3			

## Related products

Ref	Characteristic	Description	Remarks
1			
2			
3			

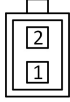
## Communication DC Connector Molex NanoFit 105405-1206

Pin description		Mate with 105308-1206	PINOUT
Pin 1 : Analog temp / Ala	Pin 4 : Gnd		
Pin 2 : NC	Pin 5 : 5V aux		
Pin 3 : NC	Pin 6 : Power On/Off		

Specifications and information are subject to change without notice

# LPA Concepts

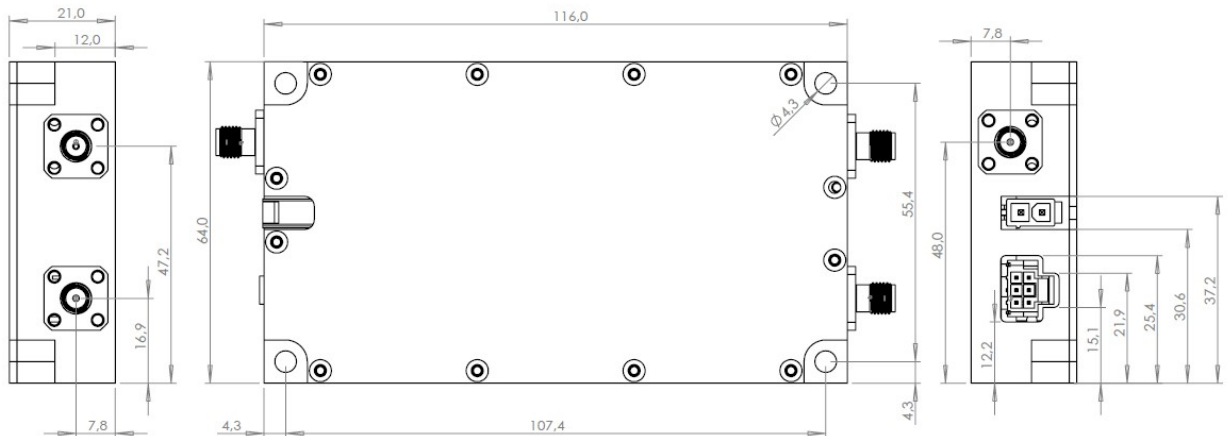
## Power Supply DC Connector Molex MiniFit Jr 39-30-1022

Pin description		PINOUT
Pin 2 : Supply +28V	Mate with 39-01-2020 and inserts 39-00-0038	
Pin 1 : Gnd		

### Mechanical characteristics

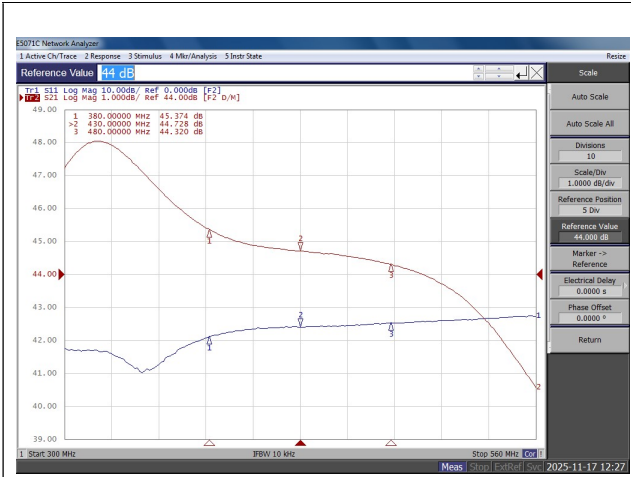
Ref	characteristic	description	remarks
1	Housing dimensions	116mm x 64mm x 21mm	
2	Housing finish	Electroless nickel	
3	Mounting	4 M4 screws	
4	Input/output RF connectors	SMA	female
5	DC supply connector	Molex 39-30-1022	Male type
6	DC controls connector	Molex 105405-1206	Male type
7	Weight	400 grams	

### Package outline:



Specifications and information are subject to change without notice

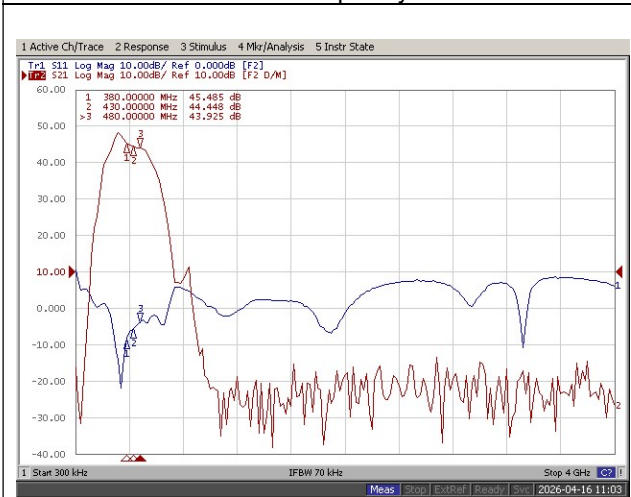
## TYPICAL PERFORMANCE



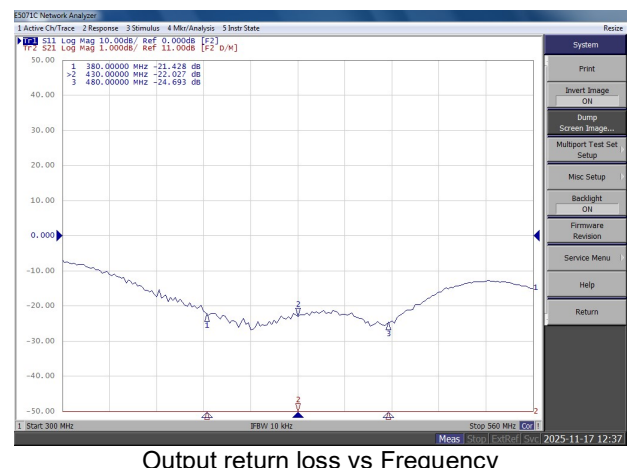
Gain vs Frequency



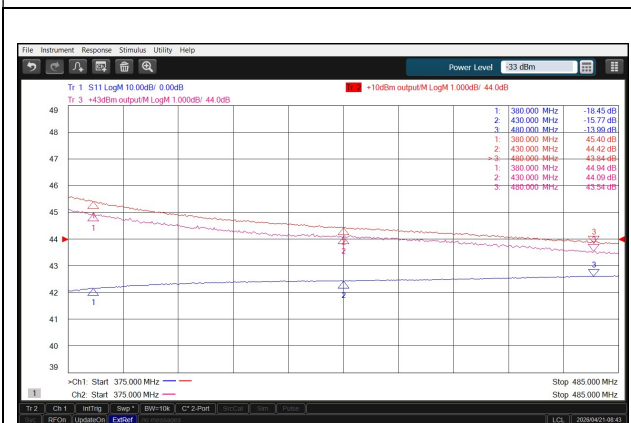
Sample vs frequency



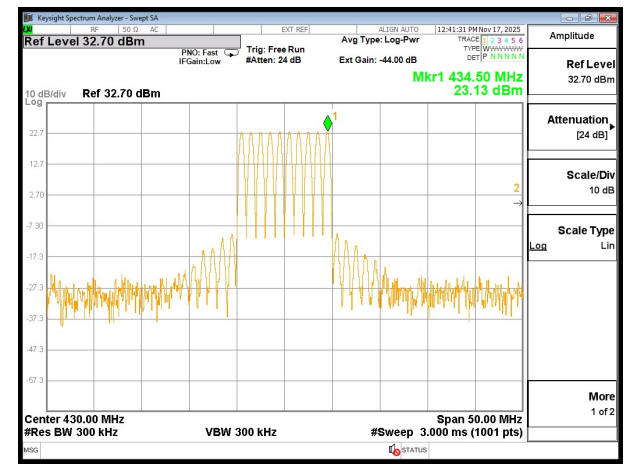
Wideband response



Output return loss vs Frequency



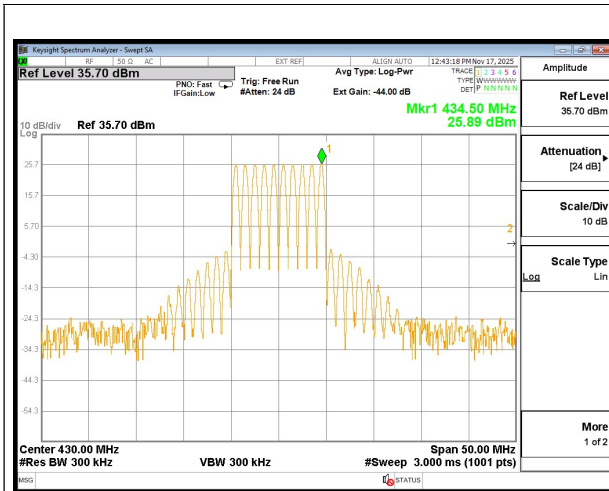
Gain compression at 20W output



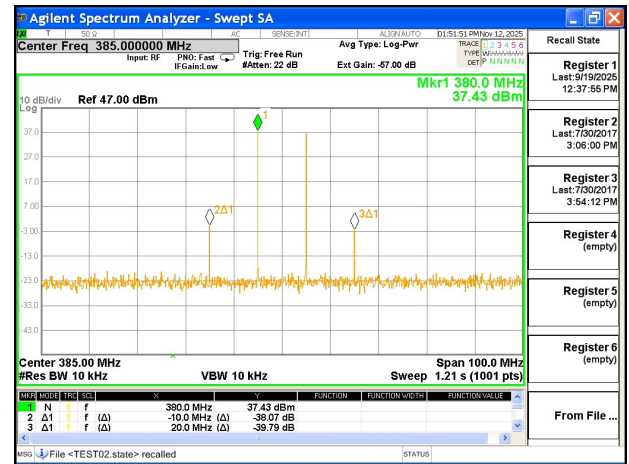
10 tones, 20W peak, f=430MHz, peaked phases

# LPA Concepts

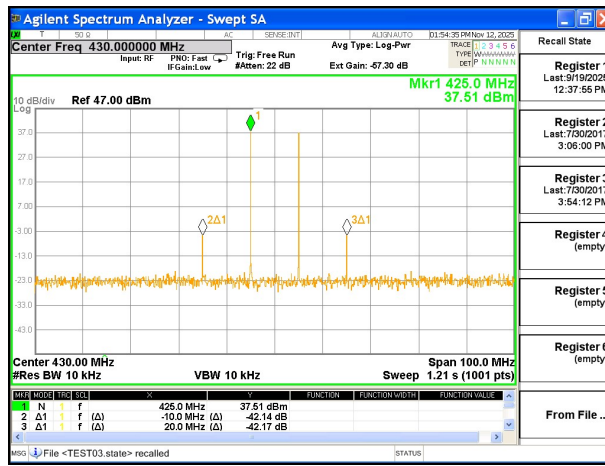
## TYPICAL PERFORMANCE (continued)



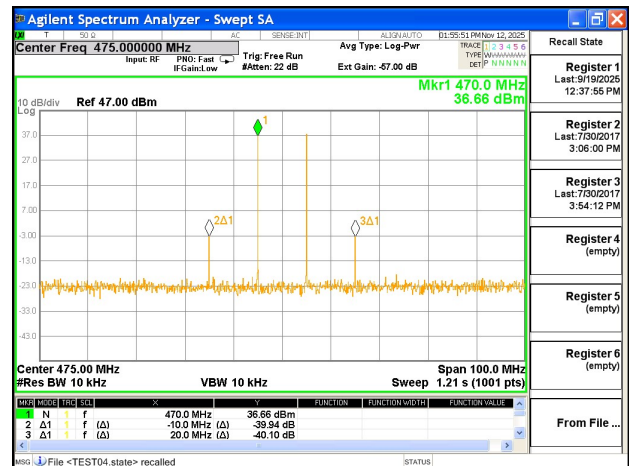
10 tones, 40W peak, f=430MHz, peaked phases



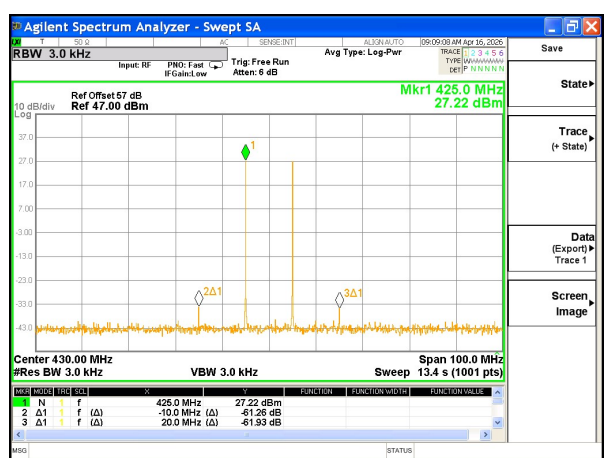
2 tones 380MHz, 385MHz, +37dBm each



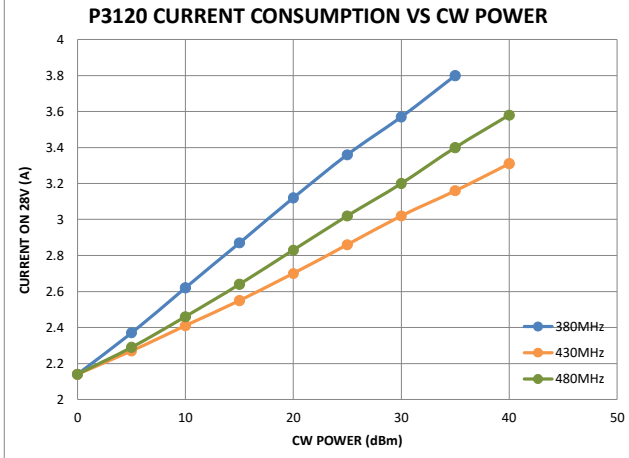
2 tones 425MHz, 435MHz, +37dBm each



2 tones 470MHz, 480MHz, +37dBm each



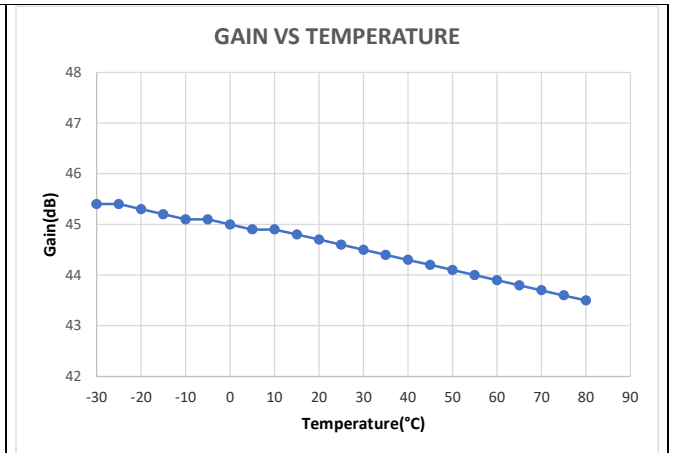
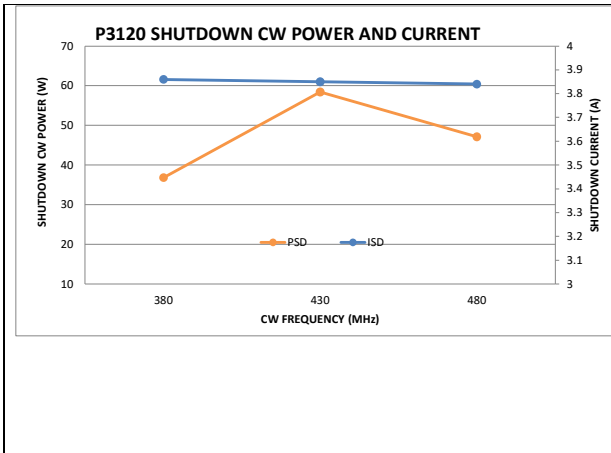
2 tones 425MHz, 435MHz, +27dBm each



Specifications and information are subject to change without notice

# LPA Concepts

## TYPICAL PERFORMANCE (continued)



Specifications and information are subject to change without notice