Power Matrix

DATASHEET

Low Noise Amplifier

PLNA-0020-0200-13

Main Features:

- Frequency Range: 0.2 to 2.0 GHz.
- P-1(dB): 13 dBm
- Typical values: NF 1.8 dB, Gain 40 dB
- Gain Flatness ±2.5 dB typ
- RF connectors (I/O): SMA Female
- Several mounting options

PLNA-0020-0200-13

The PLNA-0020-0200-13 is a Low Noise Amplifier providing a gain of 40 dB and a noise figure of 1.8 dB. The compact size and modularity makes it ideal for a wide range of applications.

Typical applications:

- Wireless communication equipment
- Test and measurement equipment
- Navigation and aerospace
- Commercial radars
- General-purpose transmitter amplification

Performance

Parameter	Value			Units
	Min	Typ	Max	
Frequency	0.2	-	2.0	GHz
Output Power (P1dB)		13		dBm
Gain	37.5	40	42.5	dB
Gain Flatness	-	±2.5	-	dB
Noise Figure		1.8		dB
VSWR input	1.3	-	1.8	-
VSWR output	1.3		1.8	
DC Voltage		5		V
Current		150		mA
RF Connectors	SMA Female IN/OUT			
Operating Temperature	-45 to +85 ℃			
Storage Temperature	-55 to 125 ℃			

Specifications at a case temperature of 25℃ at 5 V

Noise Figure

Figure 1 shows noise figure measurement as a function of frequency at environment temperature (25ºC).

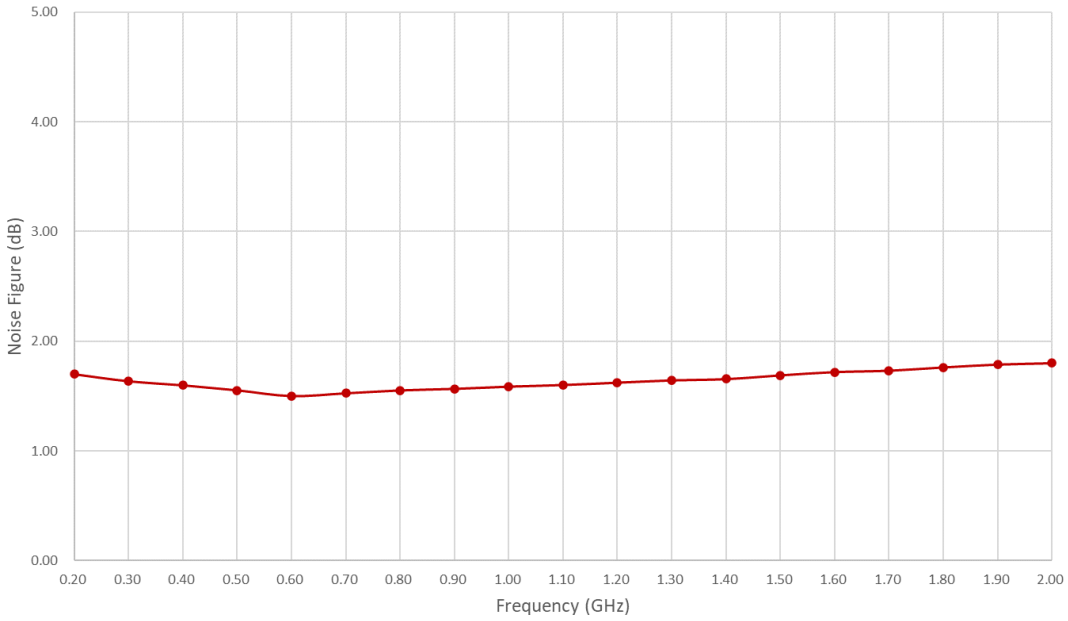


Figure 1: PLNA-0020-0200-13 Noise Figure

Output Power at 1 dB Compression

Figure 2 shows output power at 1dB compression measurement as a function of frequency at environment temperature (25ºC).

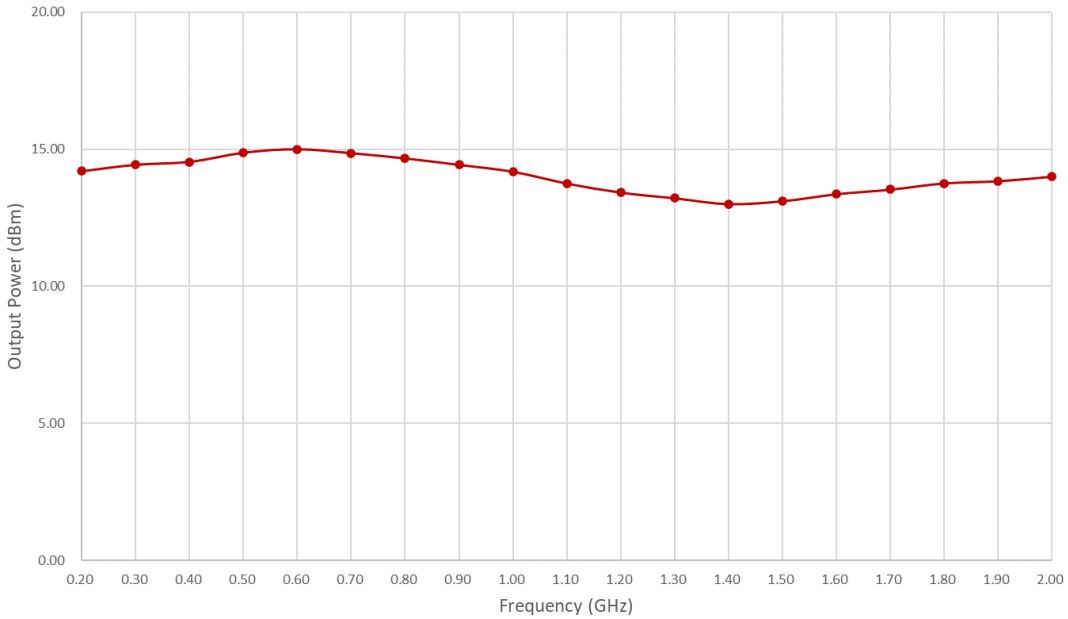


Figure 2: PLNA-0020-0200-13 P1dB

Small Signal Gain Vs Temperature

Figure 3 shows small signal gain measurement as a function of frequency at low (-45℃), normal (25℃) and high (70℃) temperatures.

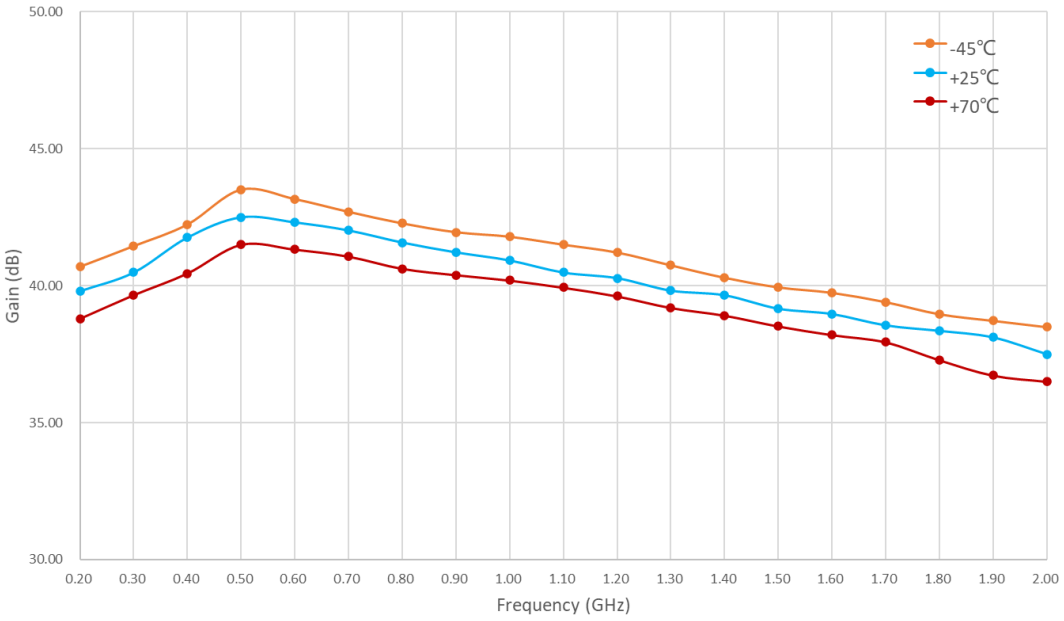


Figure 3: PLNA-0020-0200-13 Small Signal Gain Vs Temperature

Input and Output VSWR

Figure 4 and Figure 5 show input (S11) and output (S22) VSWR as a function of frequency at environment temperature (25ºC).

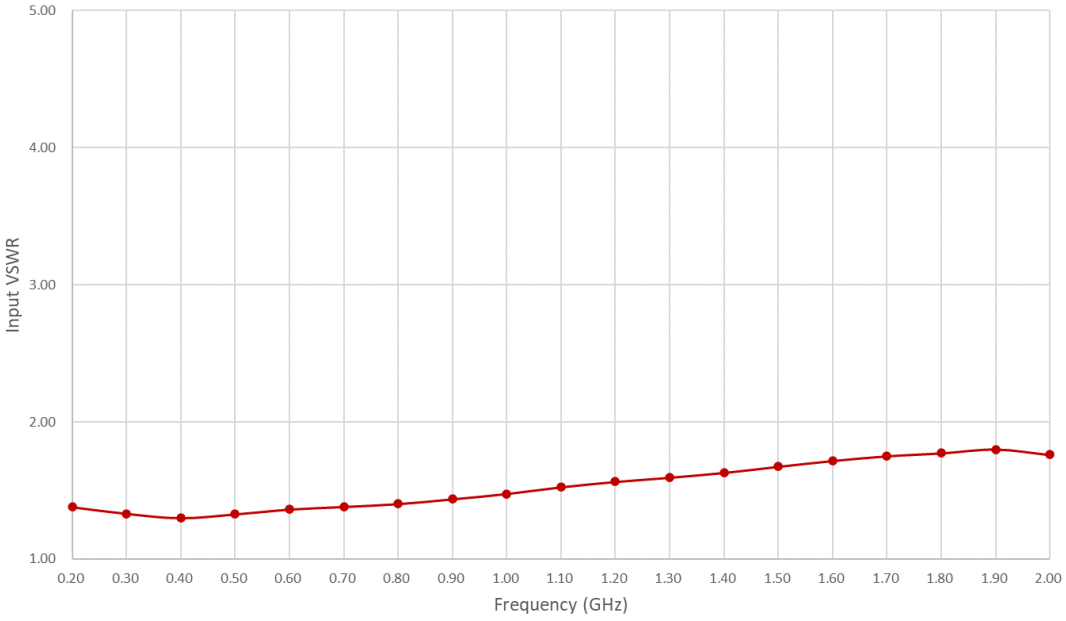


Figure 4: PLNA-0020-0200-13 Input VSWR

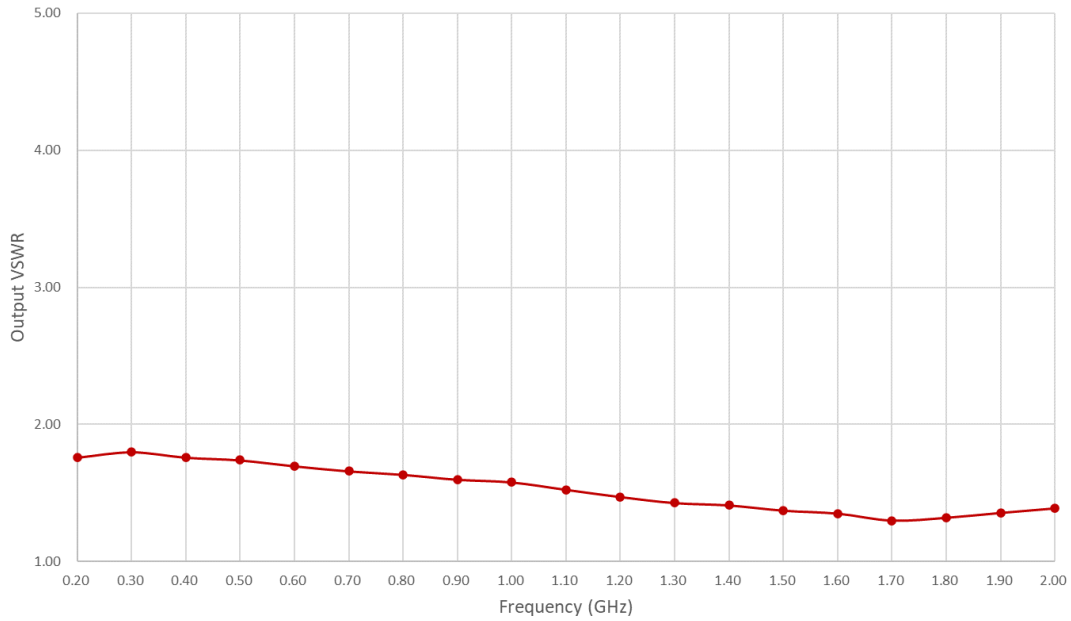


Figure 5: PLNA-0020-0200-13 Output VSWR

Absolute Maximum Ratings

Condition	Value
DC Voltage	+5.5 VDC
Maximum Input Power (CW)	+10 dBm
Operation temperature (at case)	-40 to 70 ℃
Storage temperature	-55 to 125 ℃

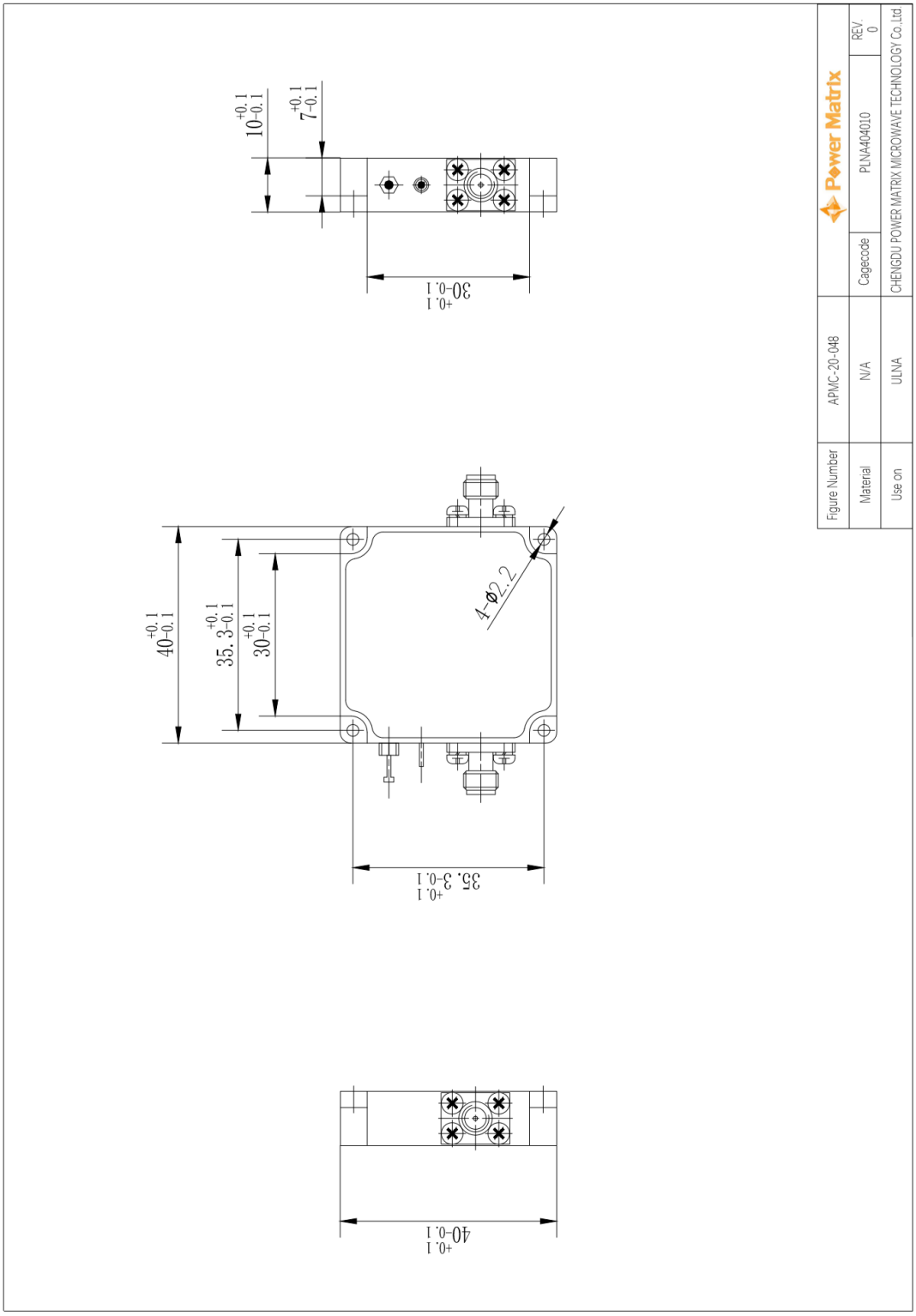
- Stress above these ratings may cause permanent damage to the device.
- It is final user responsibility to maintain the amplifier within the specified ranges.

Measurements Conditions

All measurements provided in this report were performed at the following conditions:

Condition	Value
Temperature (DUT ON)	25 ℃ ± 1℃
Humidity	44% ± 10%
DUT Warm up time	30 min
DUT minimum operation time	24 hours
Test equipment warm up time	2 hours
Additional temperature cycles in climatic chamber (DUT OFF)	-40℃ to 85℃

Mechanics and Housing



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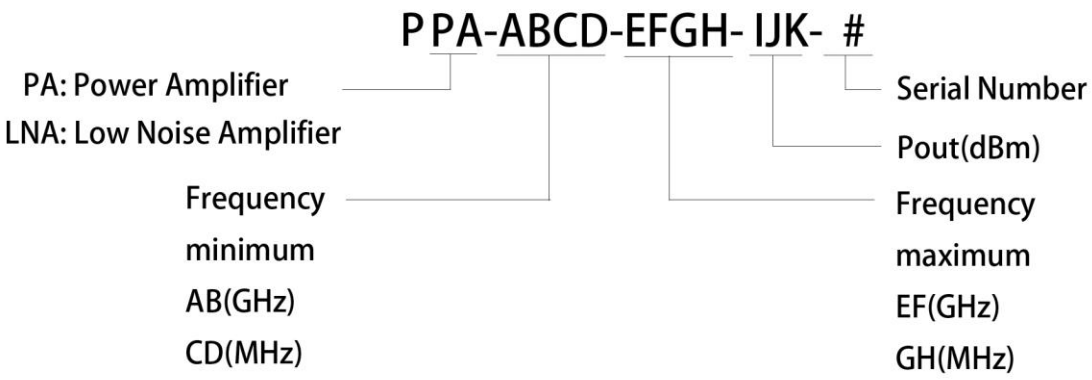
Low Noise Amplifier

PLNA-0020-0200-13

Identifier	Specification
IN	Signal Input
OUT	Power Output
GND	Ground
Vcc	DC Supply +5V

Model Number Codification

Model Number



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Power Matrix

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