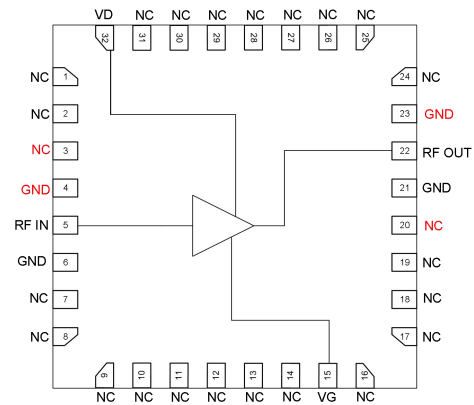


## GaAs MMIC low noise amplifier chip, DC-18GHz

### Performance characteristics

- Frequency range: DC-18GHz
- Small-signal gain: 17dB
- Gain flatness:  $\pm 1.3$ dB
- Noise figure: 2.8dB Typ.
- P-1dB: 15dBm
- Psat: 17dBm
- Power supply: +8V
- Static current: 80mA
- Input/Output: 50Ohm
- Chip size: QFN 5X5mm

### Functional block diagram



### Product Introduction

GLA-0018-2.0A-PQ5 is a broadband low noise amplifier chip, the frequency range covers DC~18GHz, small signal gain 17dB, in-band noise factor 2.8dB, P-1 power 15dBm. The GLA-0018-2.0A-PQ5 uses +8V power supply. The amplifier is fitted with a 5X5mm non-leaded plastic-sealed shell, and the surface of the pin pad is treated by tinning process, which is suitable for reflow installation process.

### Use restriction parameters<sup>1</sup>

Maximum leakage voltage	+12V
Maximum input power	+20dBm
Working temperature	-55 ~ +85°C
Storage temperature	-65 ~ +150°C

【1】 Exceeding any of the above maximum limits may result in permanent damage.

### Electrical performance parameters (T<sub>A</sub> = +25°C, V<sub>d</sub> = +8V)

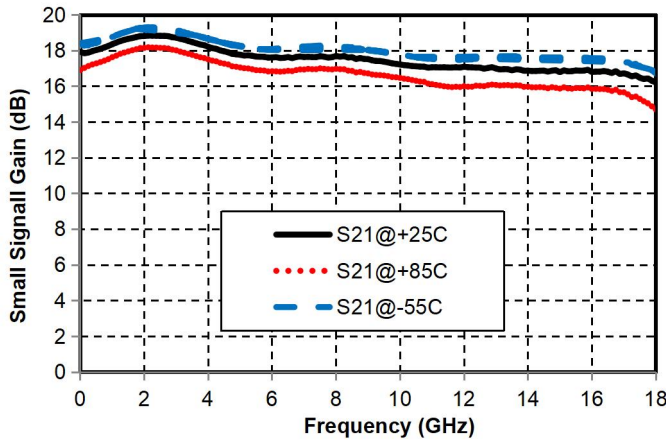
Index	Minimum value	Typical value	Maximum value	Unit
Frequency range	DC-18			GHz
Small signal gain	-	17	-	dB
Gain flatness	-	$\pm 1.3$	-	dB
Noise figure	-	2.8	-	dB
P-1dB	-	15	-	dBm
Psat	-	17	-	dBm
Input return loss	-	20	-	dB
Output return loss	-	18	-	dB
Static current	-	80	-	mA

By tuning the Vg terminal voltage to 80mA, the Vg terminal voltage is expected to be +0.65V.

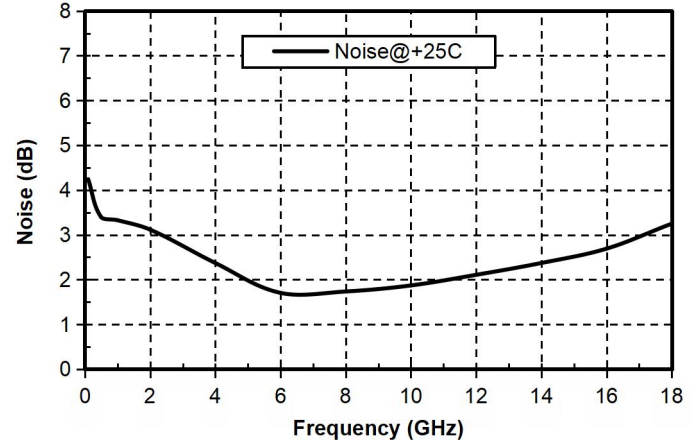
## GaAs MMIC low noise amplifier chip, DC-18GHz

Main index test curve

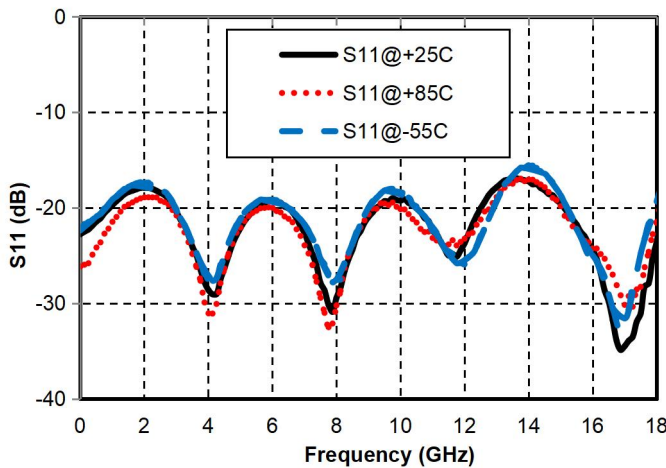
Gain vs. Frequency



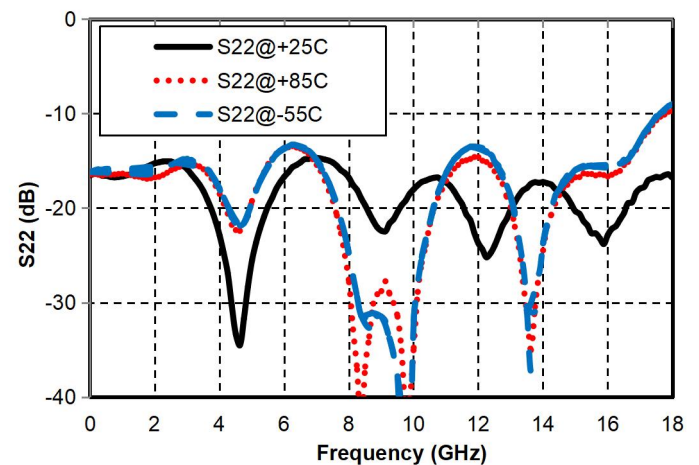
Noise coefficient vs. Frequency



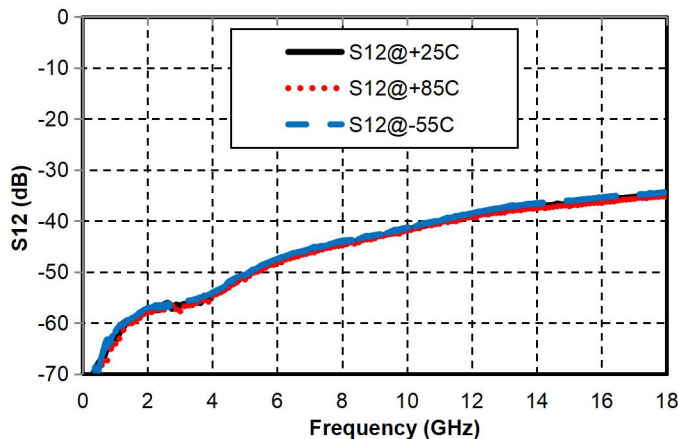
Input return loss vs. Frequency



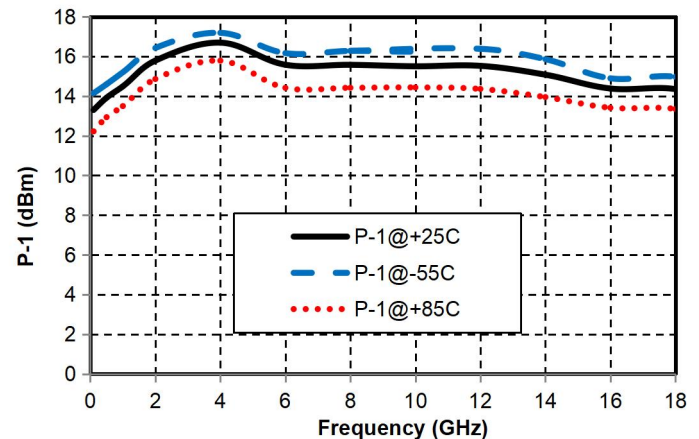
Output return loss vs. Frequency



Reverse isolation vs. Frequency

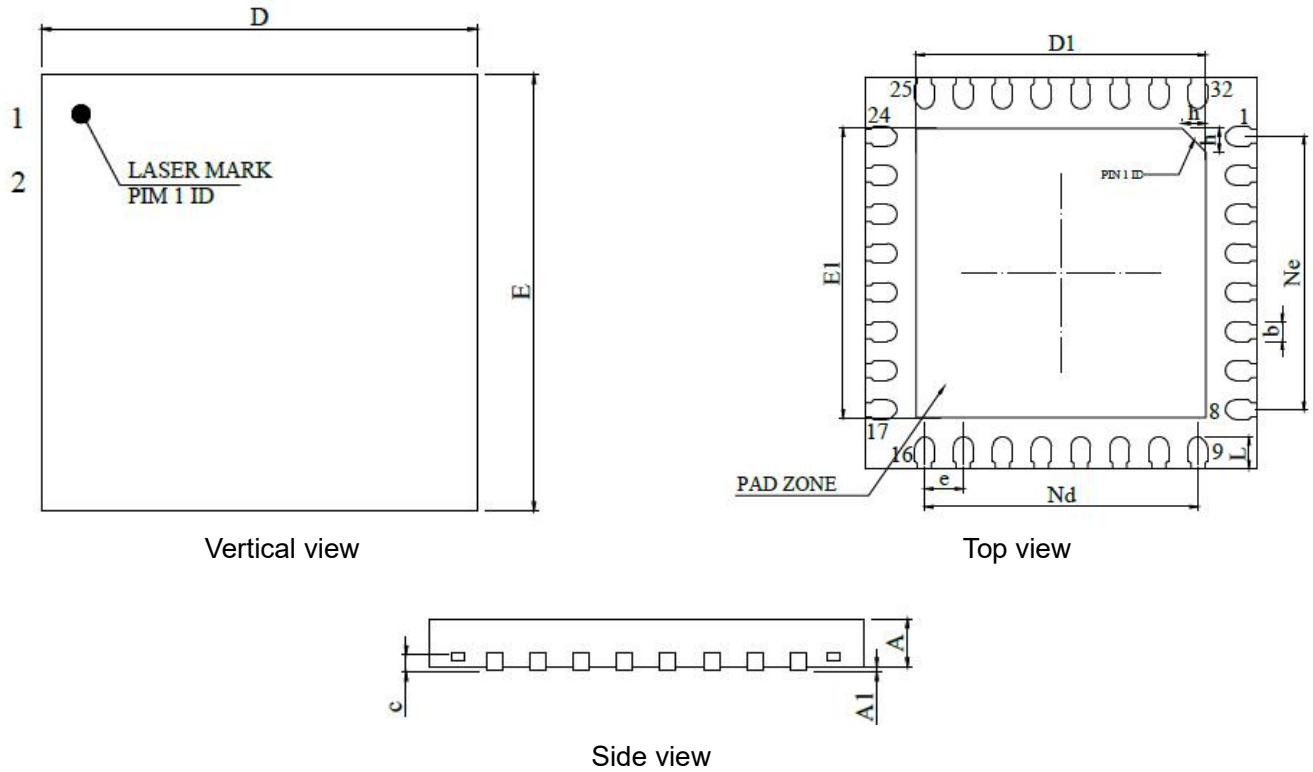


P-1dB vs. Frequency



## GaAs MMIC low noise amplifier chip, DC-18GHz

### Exterior structure



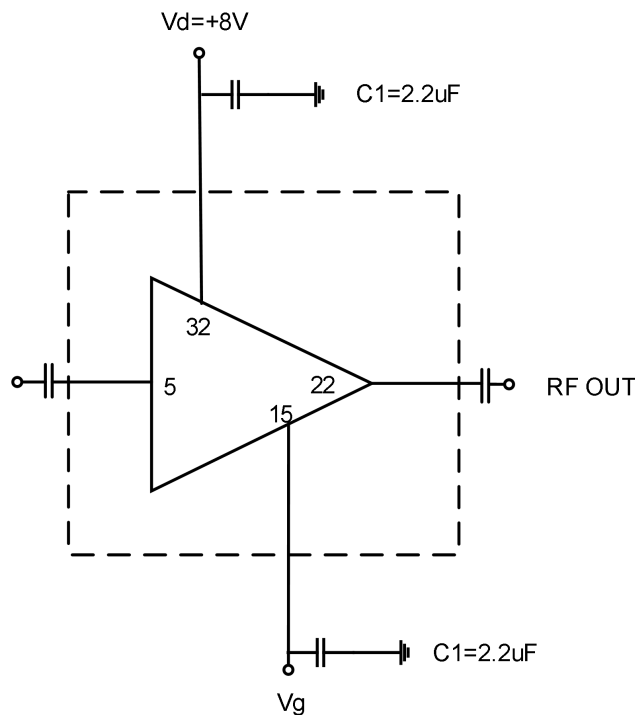
The units in the figure are millimeters.

SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	—	0.02	0.05
b	0.20	0.25	0.30
c	0.203REF		
D	4.90	5.00	5.10
D1	3.60	3.70	3.80
e	0.50BSC		
Ne	3.50BSC		
Nd	3.50BSC		
E	4.90	5.00	5.10
E1	3.60	3.70	3.80
L	0.35	0.40	0.45
h	0.25	0.30	0.35

## GaAs MMIC low noise amplifier chip, DC-18GHz

Pin definition		
Bond point number	Functional symbols	Function Description
5	RFIN	At the input end of the RF signal, separate the capacitor
22	RFOUT	At the output end of the RF signal, separate the capacitor
15	VG	Amplifier gate stage bias
32	VDD	Amplifier leakage bias
4、6、21、23	GND	The pin must be properly grounded to the RF and DC
Chip bottom	GND	The bottom of the chip must be properly grounded with the RF and DC
Others	NC	No welding required, can be grounded

### Recommended circuit



### Notice

- Sealing material: low pressure injection molding plastic in accordance with ROHS specification
- Lead frame material: copper
- Lead surface coating: nickel palladium
- Maximum peak reflow temperature: 260°C