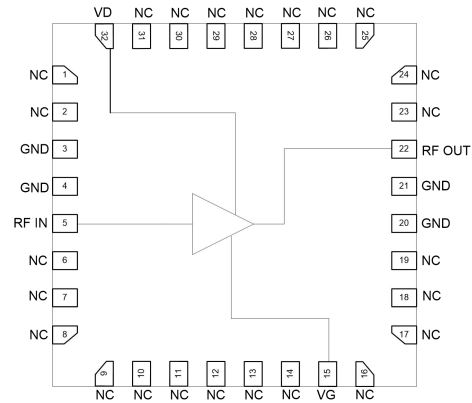


## GaAs MMIC low noise amplifier chip, DC-20GHz

### Performance characteristics

- Frequency range: DC-20GHz
- Small-signal gain: 13dB
- Gain flatness:  $\pm 1.9$ dB
- Noise figure: 3.8dB Typ.
- P-1dB: 14dBm
- Psat: 15.5dBm
- Power supply: +8V
- Static current: 60mA
- Input/Output: 50Ohm
- Chip size: QFN 5X5mm

### Functional block diagram



### Product Introduction

GLA-0020-2.0-CQ5 is a broadband low noise amplifier chip, which covers the frequency range of DC~20GHz, small signal gain 13dB, in-band noise factor 3.8dB, P-1 power 14dBm. The GLA-0020-2.0-CQ5 uses +8V power supply. The amplifier adopts a 5X5mm surface pasted leadless ceramic housing, which can achieve airtight packaging, and the surface of the pin pad is gold-plated, 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)

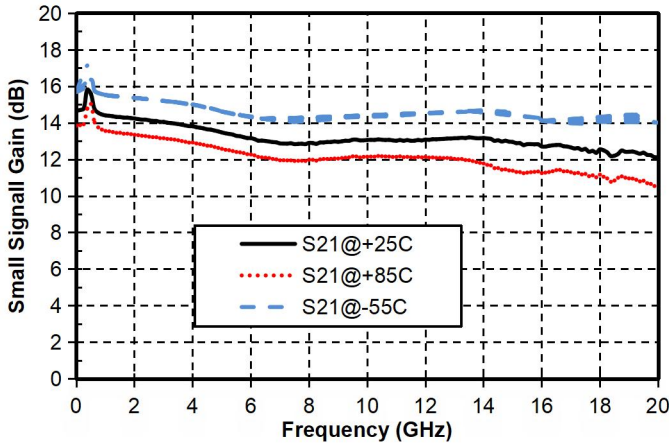
Index	Minimum value	Typical value	Maximum value	Unit
Frequency range	DC-20			GHz
Small signal gain	-	13	-	dB
Gain flatness	-	$\pm 1.9$	-	dB
Noise figure	-	3.8	-	dB
P-1dB	-	14	-	dBm
Psat	-	15.5	-	dBm
Input return loss	-	21	-	dB
Output return loss	-	18	-	dB
Static current	-	60	-	mA

By tuning the Vg terminal voltage -2V~0V, reach 60mA, and the Vg terminal voltage is expected to be -0.2V.

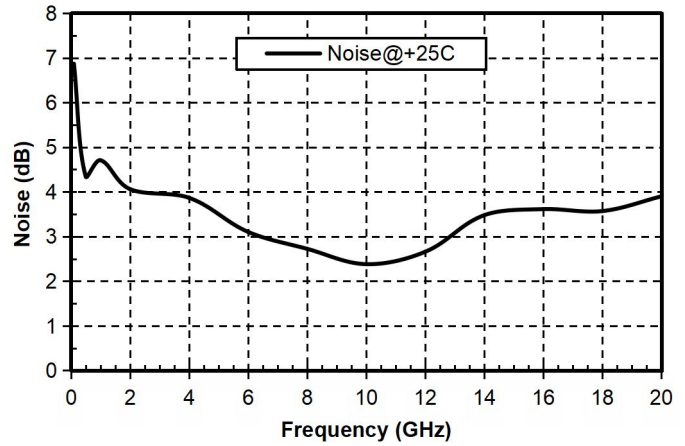
## GaAs MMIC low noise amplifier chip, DC-20GHz

Main index test curve

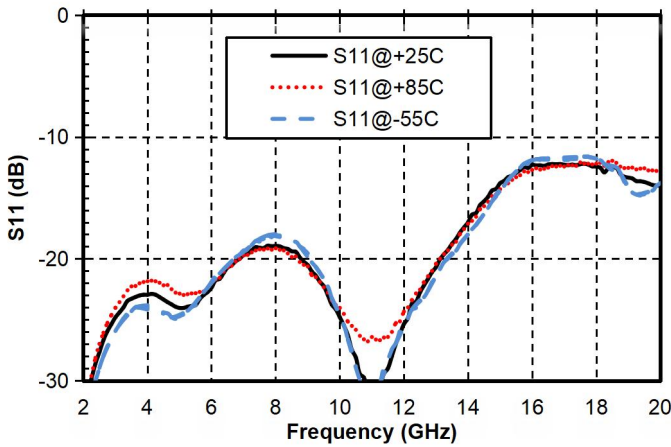
Gain vs. Frequency



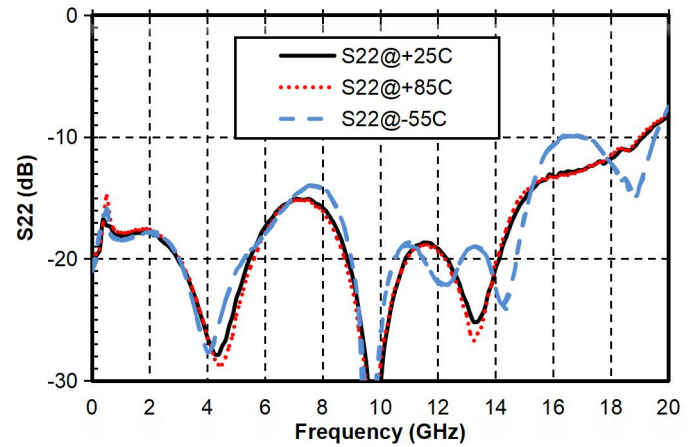
Noise coefficient vs. Frequency



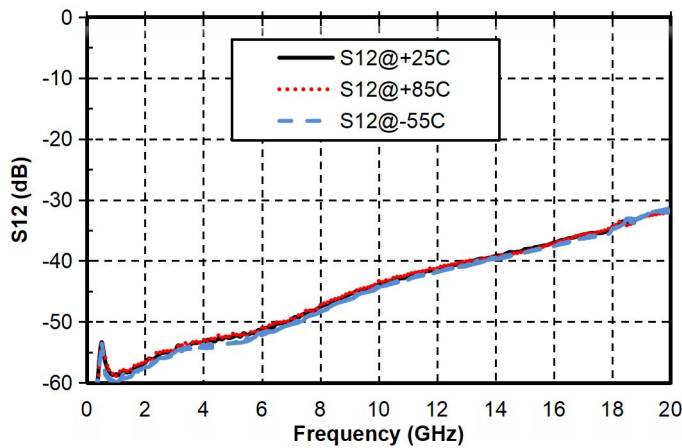
Input return loss vs. Frequency



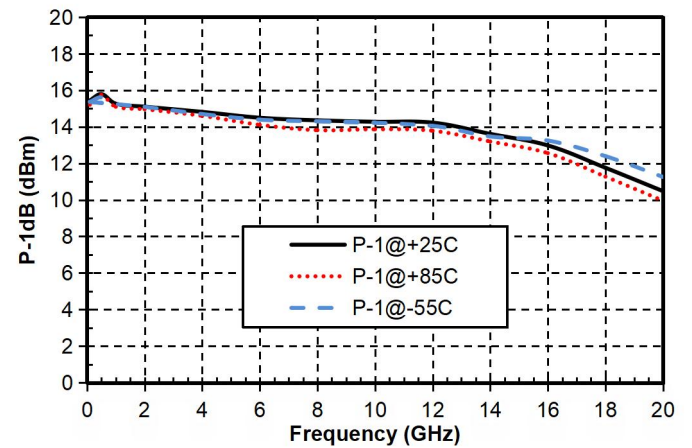
Output return loss vs. Frequency



Reverse isolation vs. Frequency

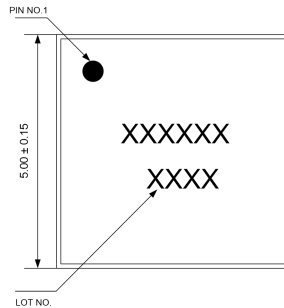


P-1dB vs. Frequency

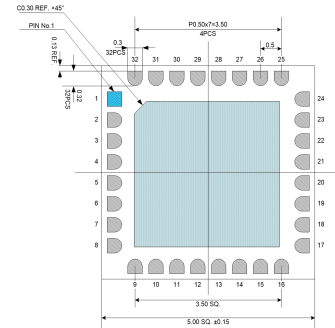


## GaAs MMIC low noise amplifier chip, DC-20GHz

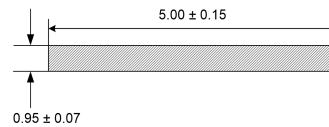
### Exterior structure



Vertical view



Top view



Side view

The units in the figure are millimeters.

### 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	VD	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 to the RF and DC
Others	NC	No welding required, can be grounded

### Recommended circuit

