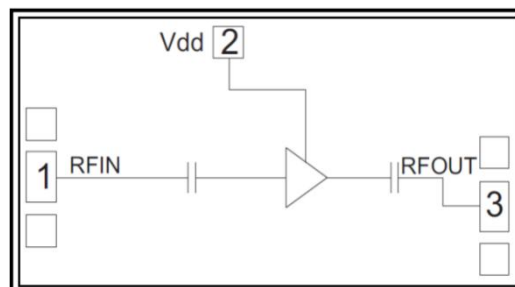## GaAs MMIC Low Noise Amplifier Chip，0.5-20GHz

Performance characteristics

- Frequency range: 0.5-20GHz
- Small signal gain: 13dB
- Noise figure: 1.9dB typ.
- P-1dB: 13.5dBm
- Power supply: +5V/20mA(static state)
- Input/Output: 50Ohm
- 100% on-chip testing
- Chip size: 1.6 x 0.95 x 0.1 mm

Functional Block Diagram

Product Introduction

GLA-0020M is a broadband low-noise amplifier chip, with a frequency range of 0.5GHz~20GHz, a small signal gain of 13dB, an in band noise figure of 1.9dB, and a P-1 power of 13.5dBm. The GLA-0020M adopts a+5V single power supply, and the chip is compatible with a +3.5V power supply.

Use restriction parameters[1]

Maximum leakage voltage	+7V
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_A= +25°C，Vd=+5V)

| Index	Minimum value	Typical value	Maximum value	Unit
Frequency range		0.5-20		GHz
Small signal gain	-	13	-	dB
Gain flatness		±0.5		dB
Noise figure	-	1.9	-	dB
P-1dB	-	13.5	-	dBm
Psat	-	17	-	dBm
Input return loss	-	15	-	dB
Output return Loss	-	15	-	dB
Static current	-	20	-	mA
P-1 current		30		mA

*The noise figure testing instrument is a noise meter.
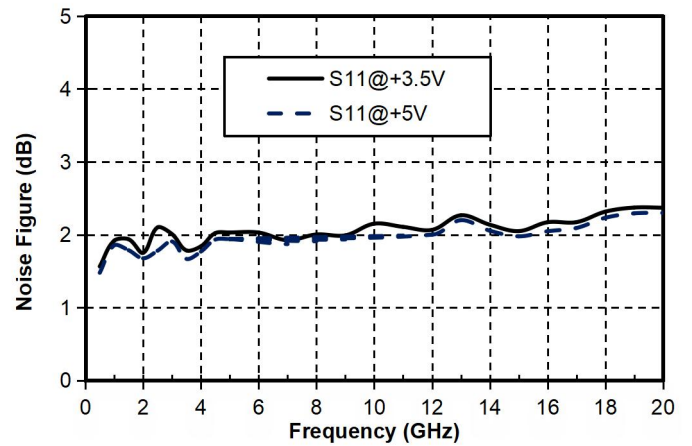*+3.5V working static current 15mA.

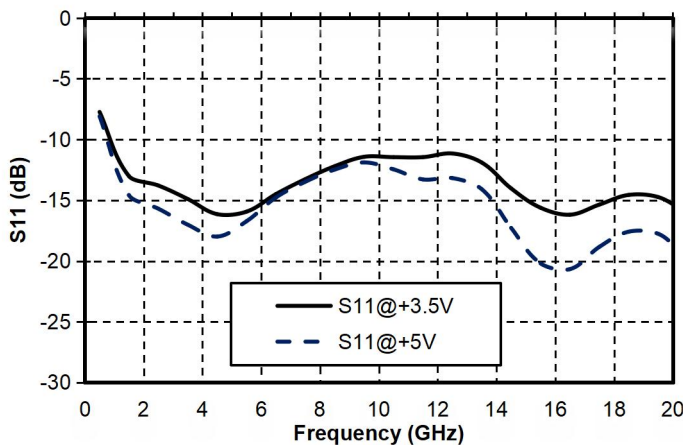## GaAs MMIC Low Noise Amplifier Chip，0.5-20GHz

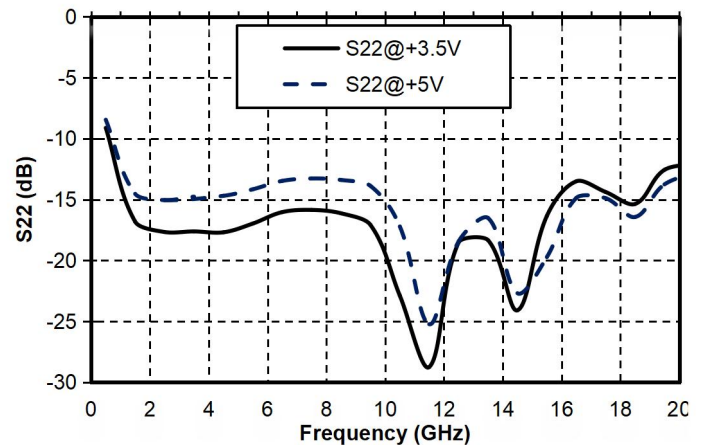### Main indicator testing curve

Gain vs. Temperature
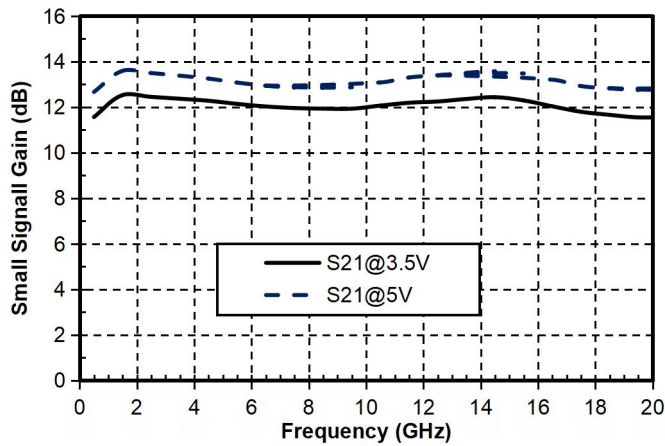
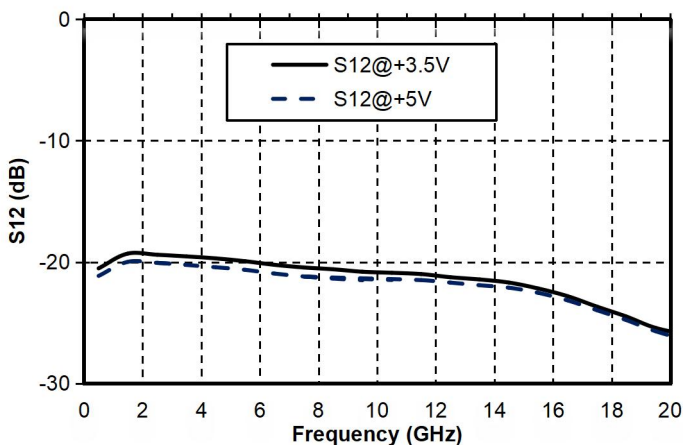**Noise Figure vs. Temperature**

Input return loss vs. Frequency

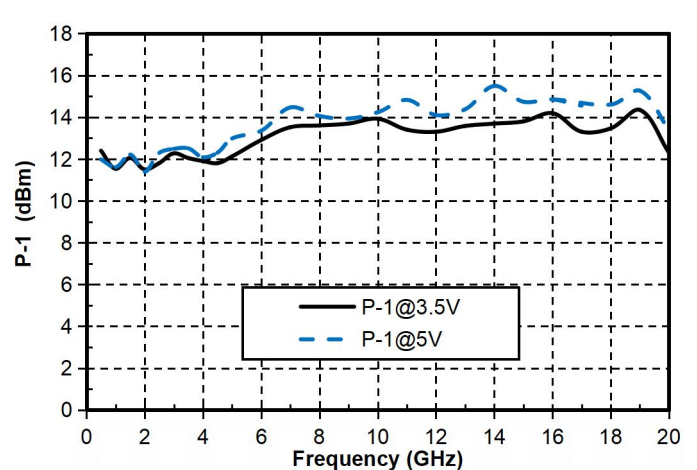**Output return Loss vs. Frequency**

Reverse isolation vs. Frequency

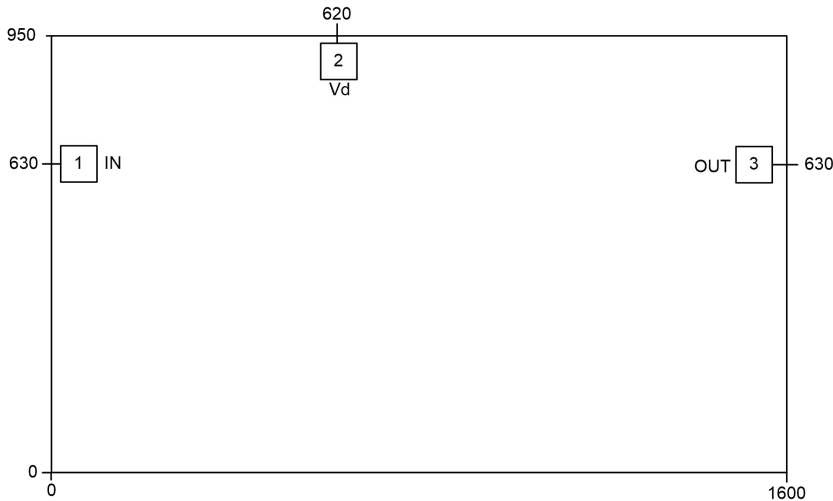
P-1dB vs. Frequency

GaAs MMIC Low Noise Amplifier Chip，0.5-20GHz

External structure[2]

950
620
2
Vd
630 1 IN
OUT 3 630
0
0
1600

【2】The units in the figure are all millimeters.

Definition of bonding pressure point

Bond point number	Functional symbols	Function Description
1	RFIN	RF signal input terminal, no need for DC capacitors.
3	RFOUT	RF signal output terminal, no need for DC isolation capacitor.
2	Vd	Amplifier drain bias, requires an external 100pF bypass capacitor.
Chip bottom	GND	The bottom of the chip needs to be well grounded with RF and DC.

Recommended assembly diagram

C=100pF
Vd=+3.5V/+5V
Vd
RF IN
IN
50ohm
RF OUT
OUT
50ohm