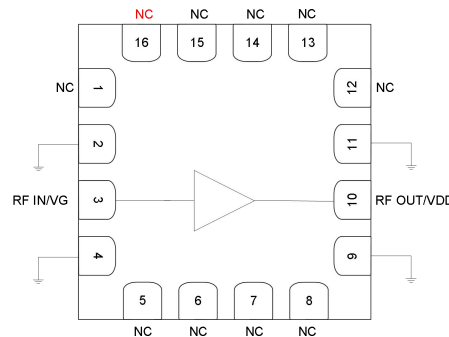


GaAs MMIC low noise amplifier chip, 0.1-18GHz

Performance characteristics

- Frequency range: 0.1-18GHz
- Small-signal gain: 14dB
- Gain flatness: ± 2.0 dB
- Noise figure: 2.5dB Typ.
- P-1dB: 16dBm
- OIP3: 27dBm
- Power supply: +5V/35mA
- Input/Output: 50Ohm
- Chip size: QFN 3X3

Functional block diagram



GLA-0018D-CQ3 is a broadband low noise amplifier chip, the frequency range covers 0.1GHz~18GHz, small signal gain 14dB, in-band noise factor 2.5dB, P-1 power 16dBm. The GLA-0018D-CQ3 uses a +5V power supply. The chip uses a 3x3mm surface pasted leadless ceramic casing to achieve airtight packaging, and the pin pad surface is gold-plated, suitable for reflow installation process.

Use restriction parameters¹

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.

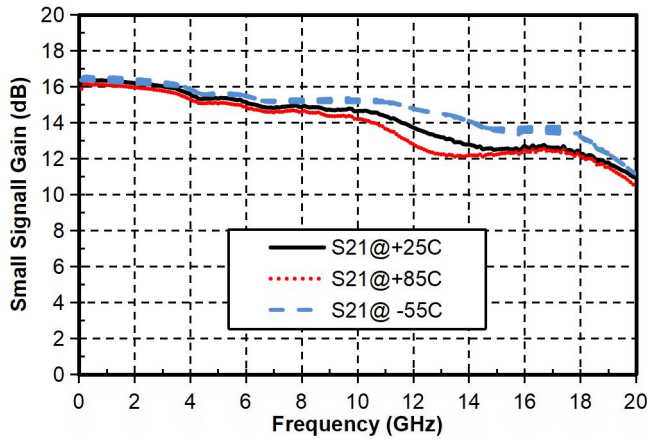
Electrical performance parameters ($T_A = +25^\circ\text{C}$, $V_d = +5\text{V}$, $V_g = +0.5\text{V}$)

Index	Minimum value	Typical value	Maximum value	Unit
Frequency range	0.1-18			GHz
Small signal gain	-	14	-	dB
Gain flatness	-	± 2.0	-	dB
Input return loss	-	20	-	Db
Output return loss	-	15	-	Db
Reverse isolation	-	23	-	Db
P-1dB	-	16	-	dBm
Psat	-	18	-	dBm
OIP3 with 0dBm output	-	27	-	dBm
Noise figure	-	2.5	-	dB
Static current	-	35	-	mA

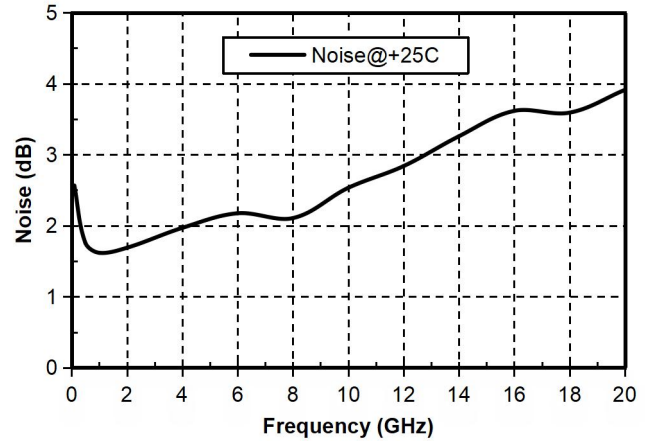
GaAs MMIC low noise amplifier chip, 0.1-18GHz

Main index test curve

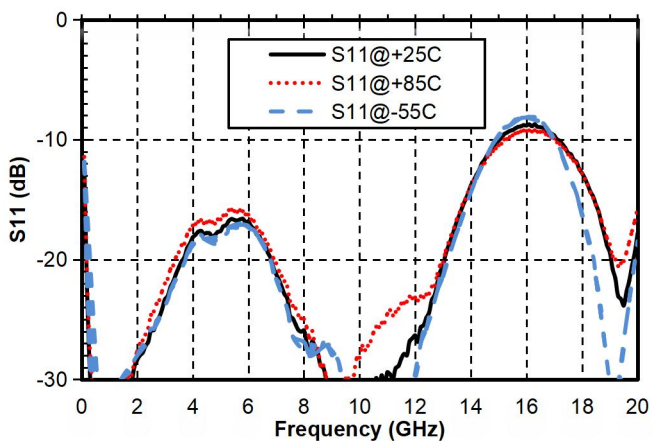
Gain vs. Frequency



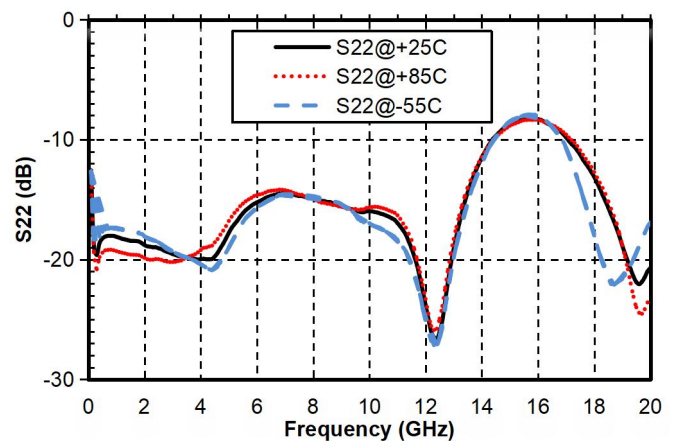
Noise coefficient vs. Frequency



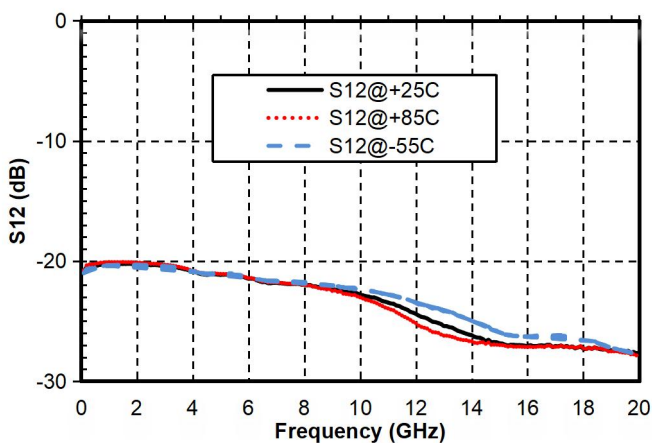
Input return loss vs. Frequency



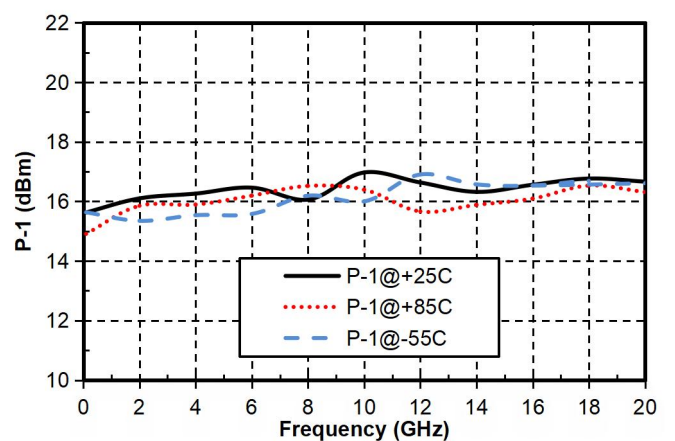
Output return loss vs. Frequency



Reverse isolation vs. Frequency

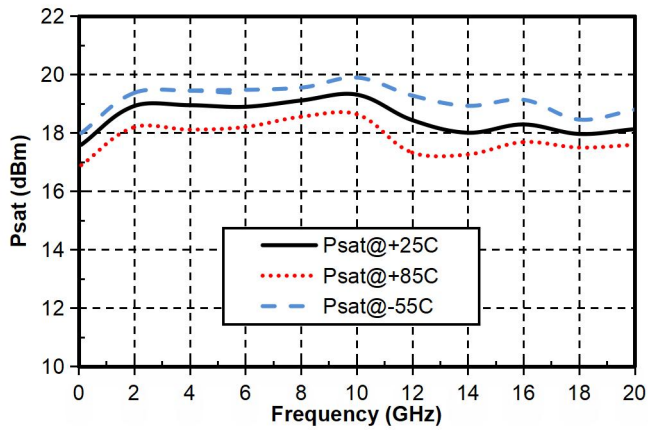


P-1dB vs. Frequency

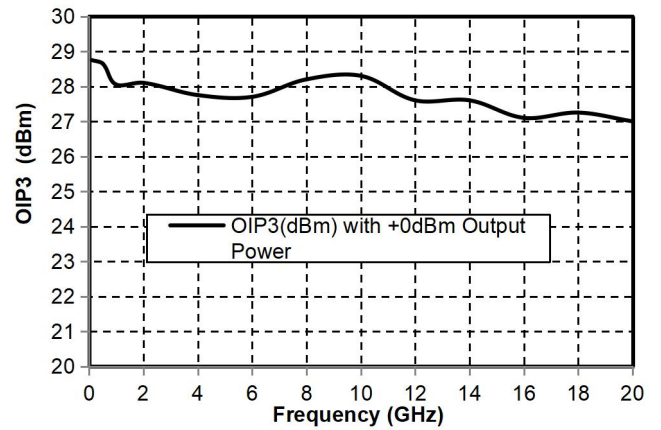


GaAs MMIC low noise amplifier chip, 0.1-18GHz

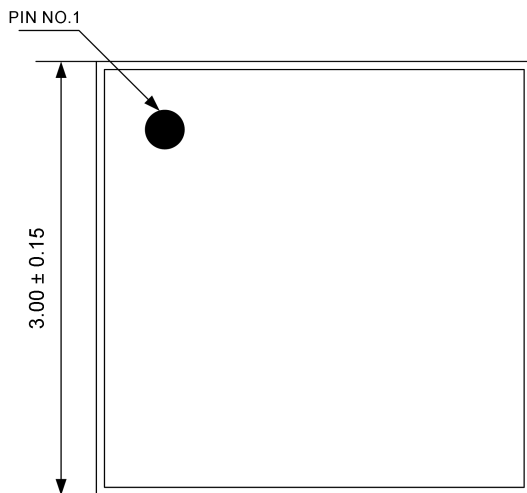
Psat vs. Frequency



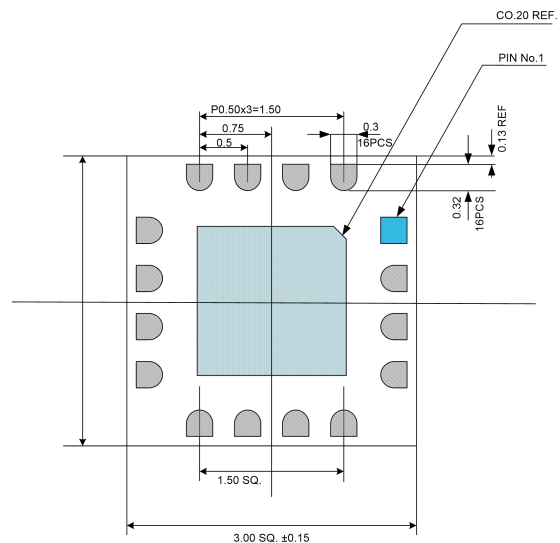
OIP3 vs. Frequency



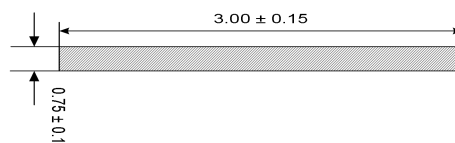
Exterior structure



Vertical view



Top view

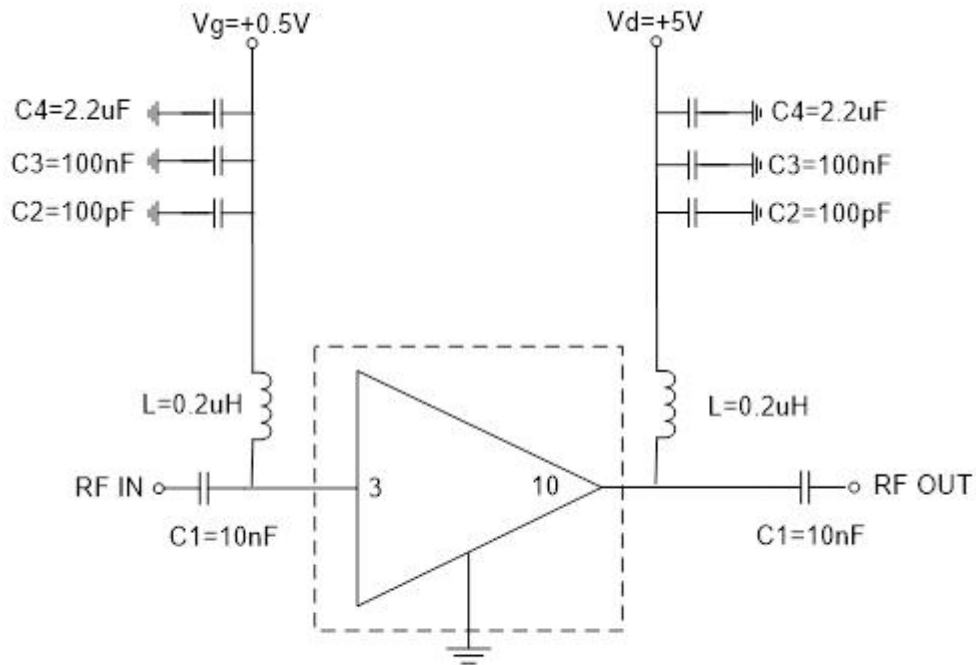


Side view

The units in the figure are millimeters.

GaAs MMIC low noise amplifier chip, 0.1-18GHz

Recommended circuit



Pin definition

Bond point number	Functional symbols	Function Description
3	RFIN、Vg	RF signal input, amplifier grid bias, need external inductor and 100pF, 100nF, 2.2uF bypass capacitor; Need to install a straight capacitor.
10	RFOUT、Vd	RF signal output, amplifier drain bias, need external inductor and 100pF, 100nF, 2.2uF bypass capacitor; Need to install a straight capacitor.
2、4、9、11	GND	The pin should be in good contact with the RF and DC ground
Chip bottom	GND	The bottom of the chip must be properly grounded with the RF and DC
Others	NC	The pins are suspended and can be grounded

Notice

- Sealing material: ceramic material in accordance with ROHS specification
- Lead frame material: copper alloy
- Lead surface coating: gold, gold layer thickness 0.3um min
- Maximum peak reflow temperature: 260°C