Standard Circuit

GLA-0220C

GaAs MMIC Low Noise Amplifier Chip，2-20GHz

Performance characteristics

- Frequency range: 2-20GHz
- Small signal gain: 24dB
- Gain flatness:±0.6dB
- Noise figure: 1.3dB typ (Vector network testing)
- P-1dB: 13.5dBm
- Power supply: +5V@40mA
- Input/Output: 50Ohm
- 100% on-chip testing
- Chip size: 1.60 x 1.18x 0.1 mm

Product Introduction

GLA-0220C is a broadband low-noise amplifier chip, with a frequency range of 2GHz~20GHz, a small signal gain of 24dB, a gain flatness of ± 0.6dB, and an in band noise figure of 1.3dB. GLA-0220C is powered by a +5V single 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		2-20		GHz
Small signal gain	-	24	-	dB
Gain flatness		±0.6		dB
Noise coefficient (vector network test)	-	1.3	-	dB
P-1dB	-	13.5	-	dBm
Psat	-	15	-	dBm
Input return loss	-	20	-	dB
Output return Loss	-	17	-	dB
Static current	-	40	-	mA

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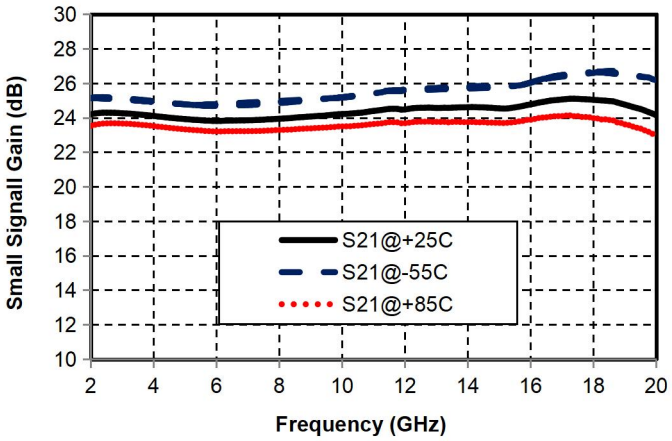
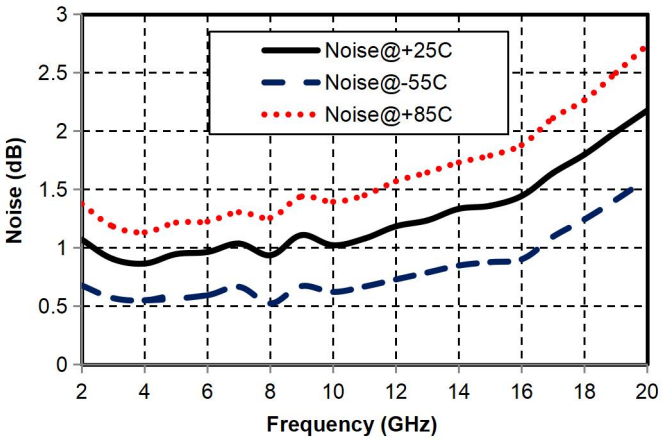
Main indicator testing curve

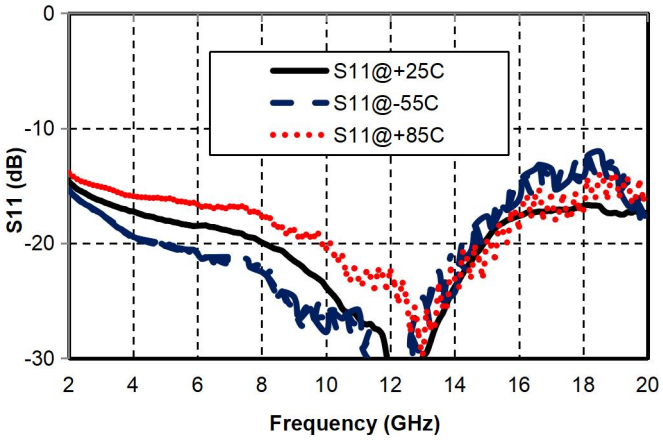
Gain vs. Frequency range



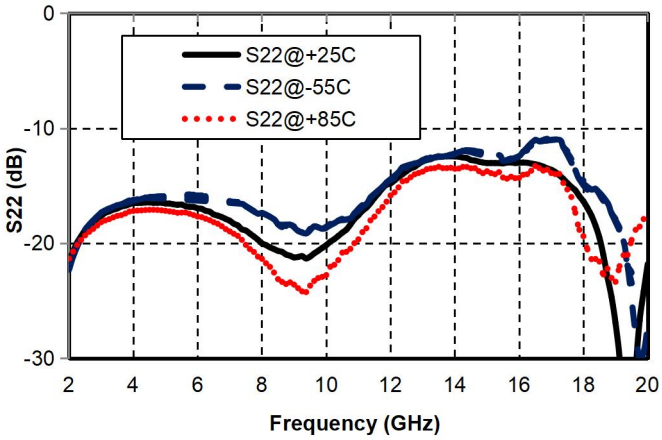
Noise Figure vs. Frequency



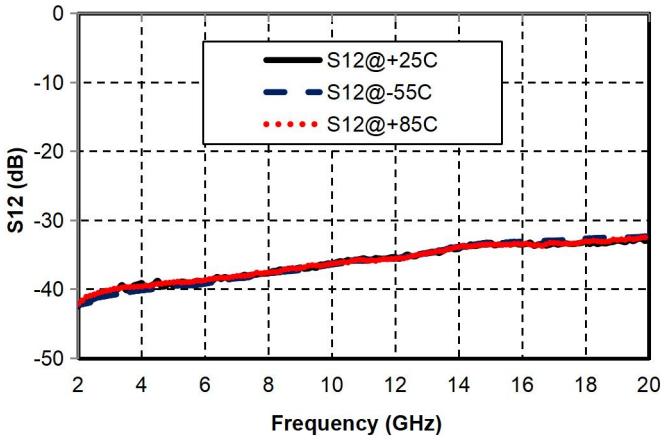
Input return loss vs. Frequency



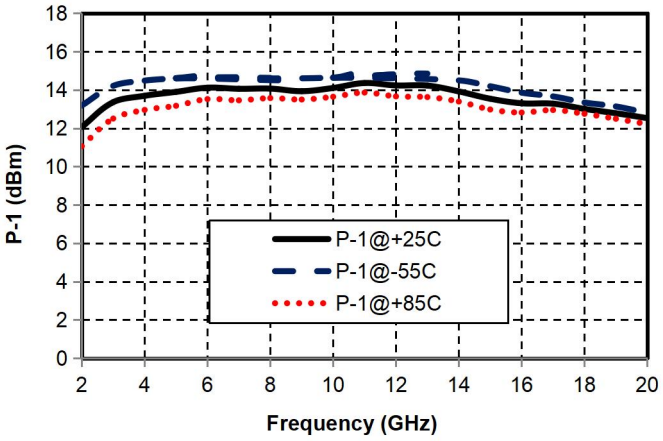
Output return Loss vs. Frequency



Reverse isolation vs. Frequency



P-1dB vs. Temperature



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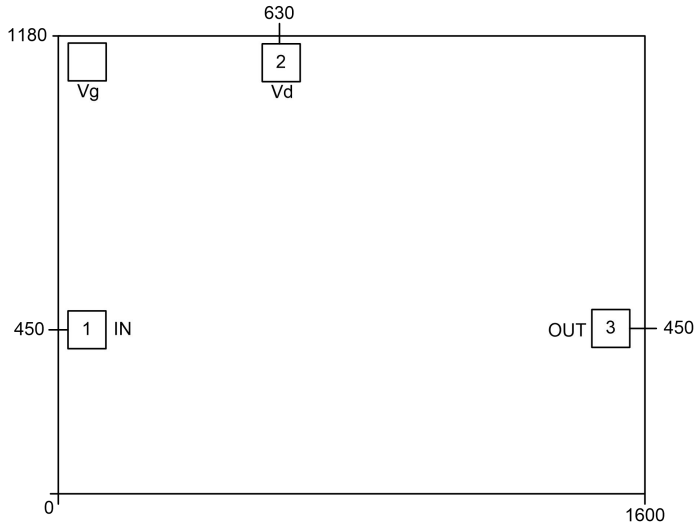
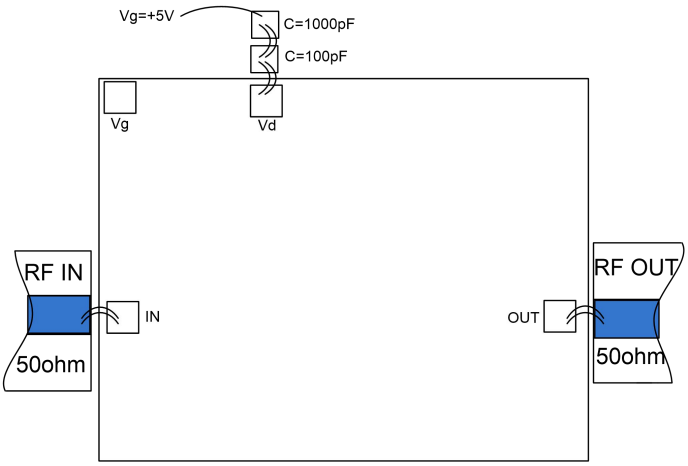
External structure[2]



【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



By grounding Vg, power consumption can be reduced to 25mA, and small signal gain and P-1 power can also be partially reduced.