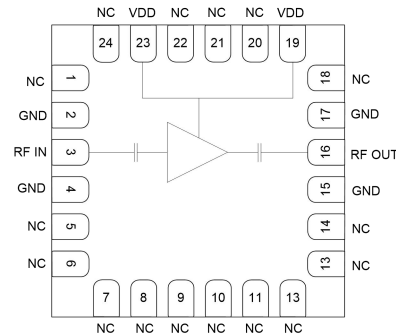


GaAs MMIC Low Noise Amplifier Chip, 5-14 GHz

Performance characteristics

- Frequency range: 5 - 14 GHz
- Small signal gain: 22dB
- Gain flatness: ± 1.1 dB
- Noise figure: 1.1dB
- P -1 dB: 7.5dBm
- Psat : 9dBm
- Power supply: +3.3 V /20mA
- 50Ohm input / output
- Chip size: QFN 4X4

Block Diagram



Product Introduction

It is a broadband amplifier chip with a frequency range of 5GHz~14GHz, a small signal gain of 22dB, and a P-1 output of 7.5dBm. GLA-0514A-CQ4 is powered by a single +3.3V power supply. This chip uses a 4 x 4 mm ceramic surface mount package to achieve airtight packaging. The surface of the pin pad is gold-plated and is suitable for reflow soldering installation.

Use limit parameters

Maximum drain voltage	+7V
Maximum input power	+20dBm
Operating temperature	-55 ~ +85°C
storage temperature	-65 ~ +150°C

Exceeding any of these maximum limits may cause permanent damage.

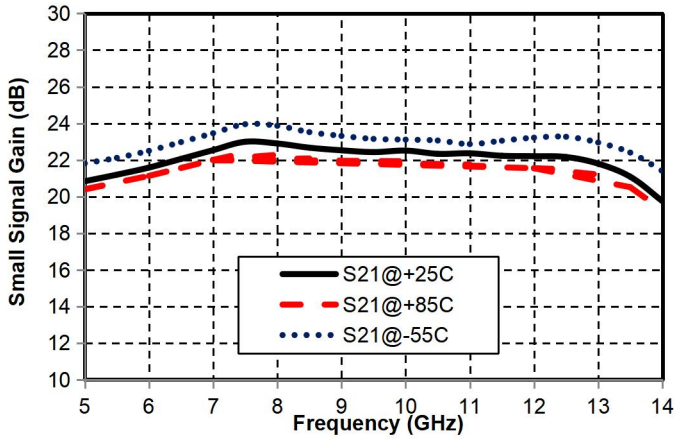
Electrical performance parameters (TA = +25°C, Vd = +3.3V)

Index	Minimum	Typical Value	Maximum	Unit
Frequency Range	5-14			G Hz
Small Signal Gain	-	22	-	dB
Gain Flatness		± 1.1		dB
Noise Figure	-	1.1	-	
P -1dB	-	7.5	-	dBm
Psat	-	9.0	-	dBm
Input return loss	-	13	-	dB
Output return loss	-	14	-	dB
Quiescent Current		20		mA

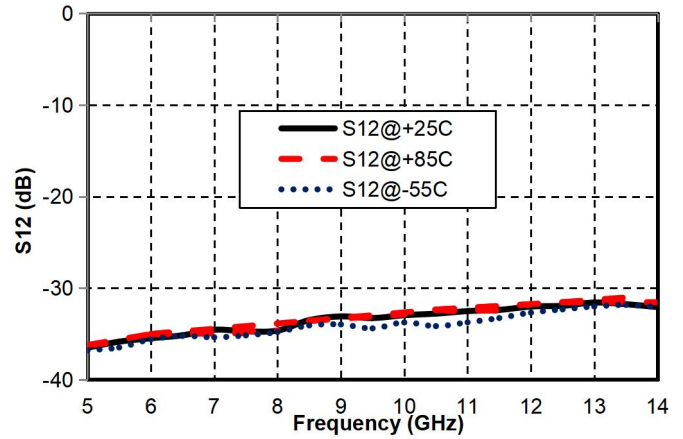
GaAs MMIC Power Amplifier Chip, 5 - 14 GHz

Main index test curve

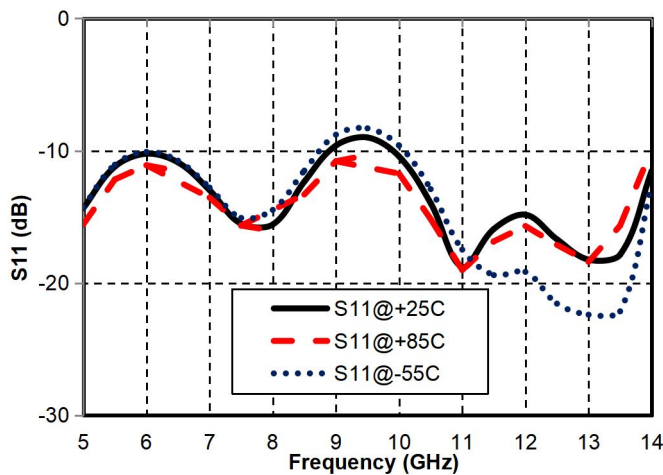
Gain vs. Frequency



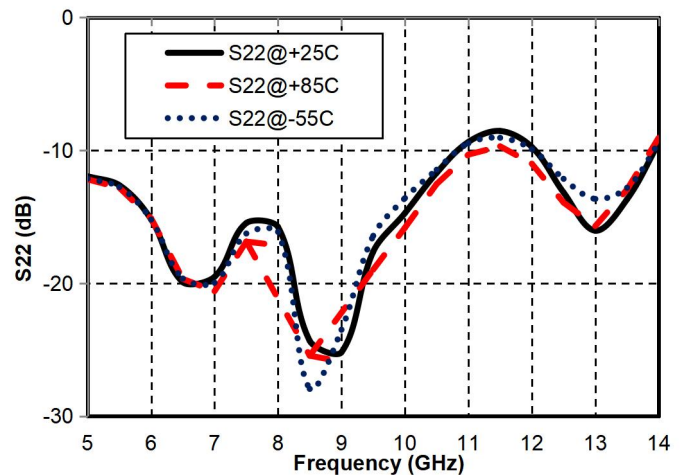
Reverse Isolation vs. Frequency



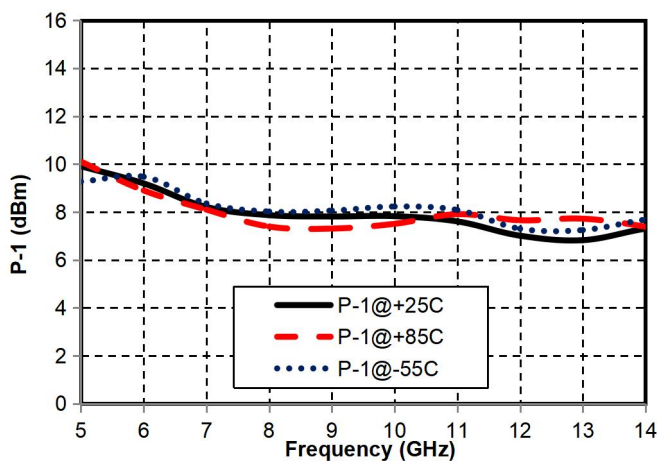
Input Return Loss vs. Frequency



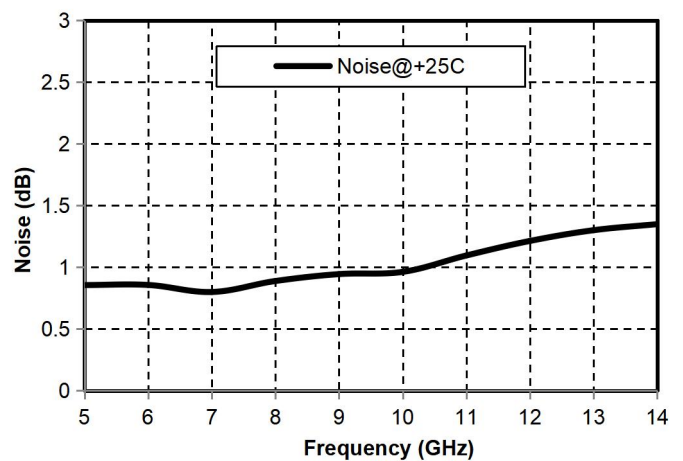
Output Return Loss vs. Frequency



P-1dB vs. Frequency

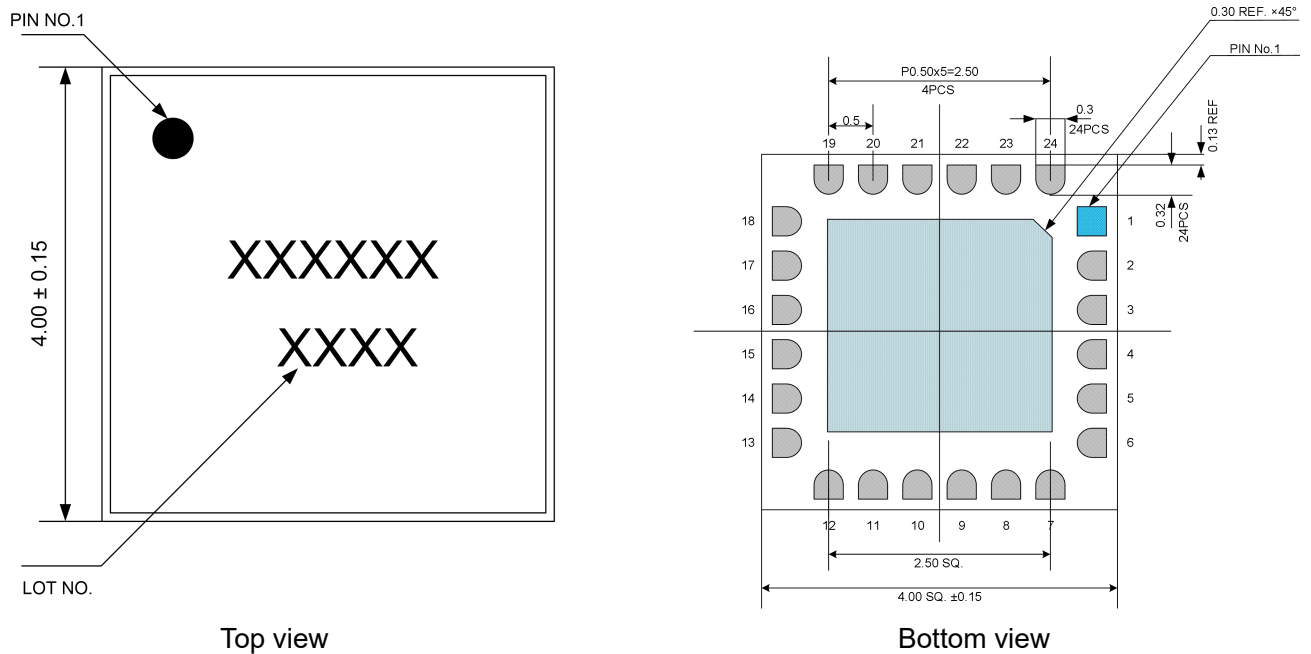


Noise vs. Frequency



GaAs MMIC Power Amplifier Chip, 5 - 14 GHz

Appearance structure



Top view

Bottom view

Side View

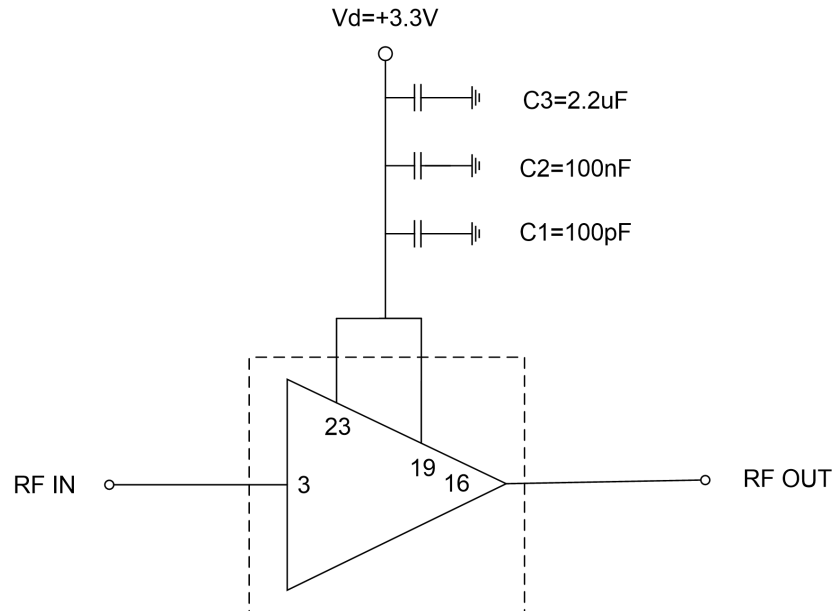
The units in the figures are all in millimeters , and the tolerance is ± 0.15 mm.

Pin Definition		
Pin Definition	Function Symbol	Functional Description
3	RFIN	RF signal input terminal, no DC blocking capacitor required
16	RFOUT	RF signal output terminal, no DC blocking capacitor required
19 、 2 3	VCC	Amplifier drain bias , any pin can be powered
2, 4, 15, 17	GND	need to be in good contact with the RF and DC grounds.
Chip bottom	GND	The bottom of the chip needs to be well grounded to RF and DC

other	NC	No welding required
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GaAs MMIC Power Amplifier Chip, 5 - 14 GHz

Recommended Circuit



Raw material	Capacitance, inductance, resistance
C1	100pF
C 2	100nF
C 3	2.2uF

Precautions for use

- Sealing material : Ceramic material that meets ROHS standards
- Lead frame material: copper alloy
- Lead surface plating: gold, gold layer thickness 0.30um MIN
- Maximum reflow peak temperature: 260 °C