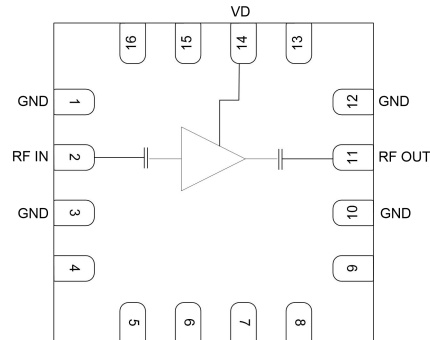


GaAs MMIC Low Noise Amplifier Chip, 1-12 GHz

Performance characteristics

- Frequency Range: 1-12 GHz
- Small Signal Gain: 16.5 dB
- Noise figure: 1.5dB typ./1.8dB max.
- P -1dB: 18.5dBm
- Power supply: + 5V /40mA
- Input/Output: 50Ohm
- 100% on-wafer testing
- Chip size: QFN 3X3

Block Diagram



Product Introduction

GLA-0112E-PQ3 is a broadband low noise amplifier chip with a frequency range of 1GHz~12GHz, a small signal gain of 16.5dB, and an in-band noise figure of 1.5 dB . GLA-0112E-PQ3 is powered by a single +5V power supply. This chip is packaged in a 3 x 3 mm plastic surface mount package, and the surface of the pin pad is gold-plated, which is suitable for reflow soldering installation.

Use restriction parameter ¹

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

【1】 Exceeding any of these maximum limits may cause permanent damage.

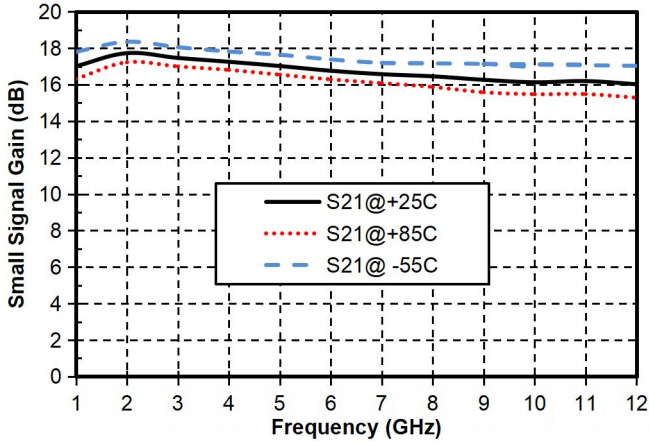
Electrical performance parameters (TA = +25° C, Vd=+5V)

Index	Minimum	Typical Value	Maximum	unit
Frequency Range	1-18			G Hz
Small Signal Gain	16	16.5	17.5	dB
Gain Flatness		± 0.75		dB
Noise Figure	-	1.5	1.8	dB
P -1 dB	18	18.5	19.5	dBm
Psat	18.5	19.5	20.5	dBm
Input return loss	10.5	12.5	-	dB
Output return loss	12	17	-	dB
Quiescent Current		40		mA

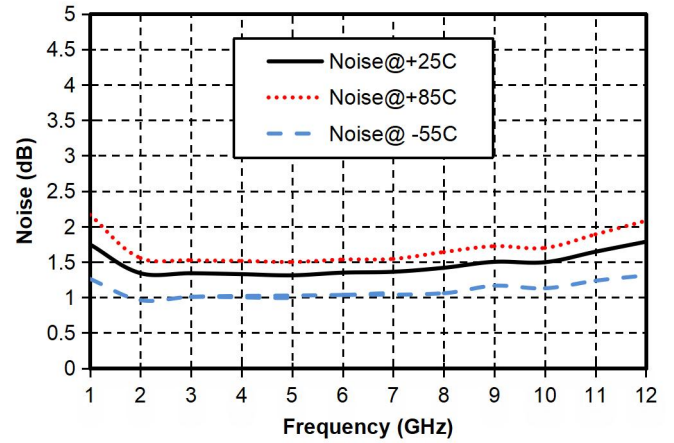
GaAs MMIC Low Noise Amplifier Chip, 1-12 GHz

Main index test curve

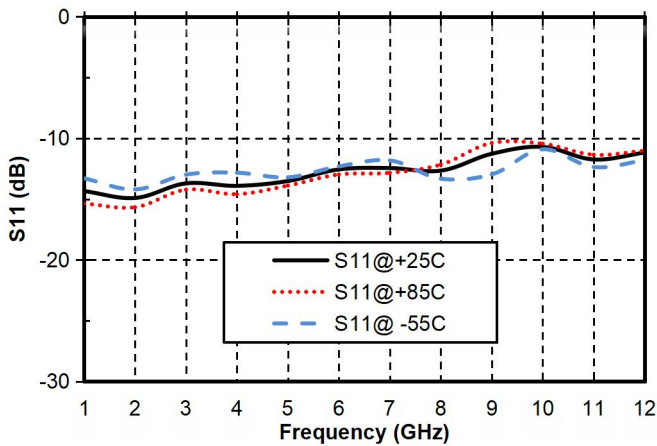
Gain vs. Temperature



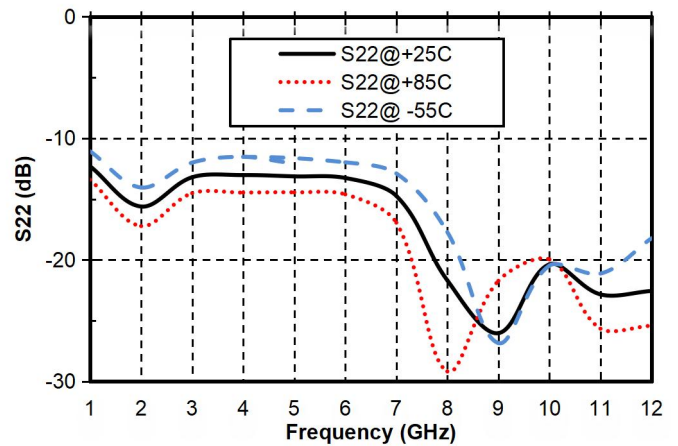
Noise Figure vs. Temperature



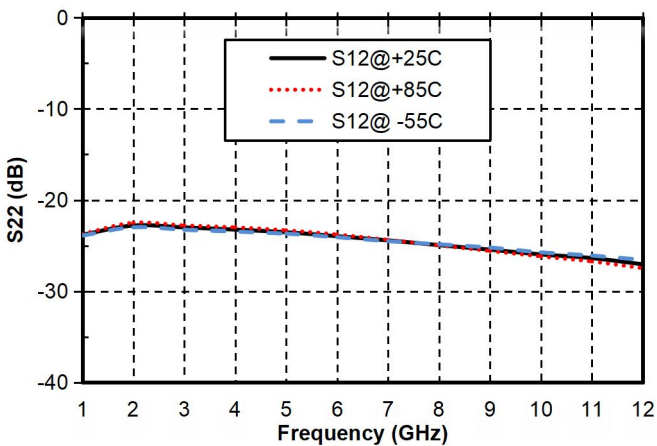
Input Return Loss vs. Frequency



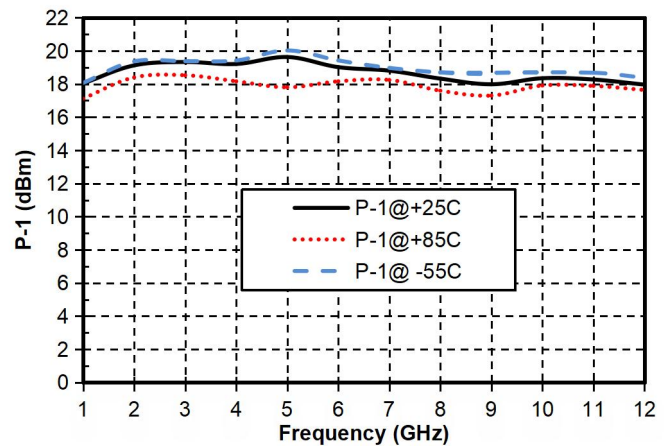
Output Return Loss vs. Frequency



Reverse Isolation vs. Frequency

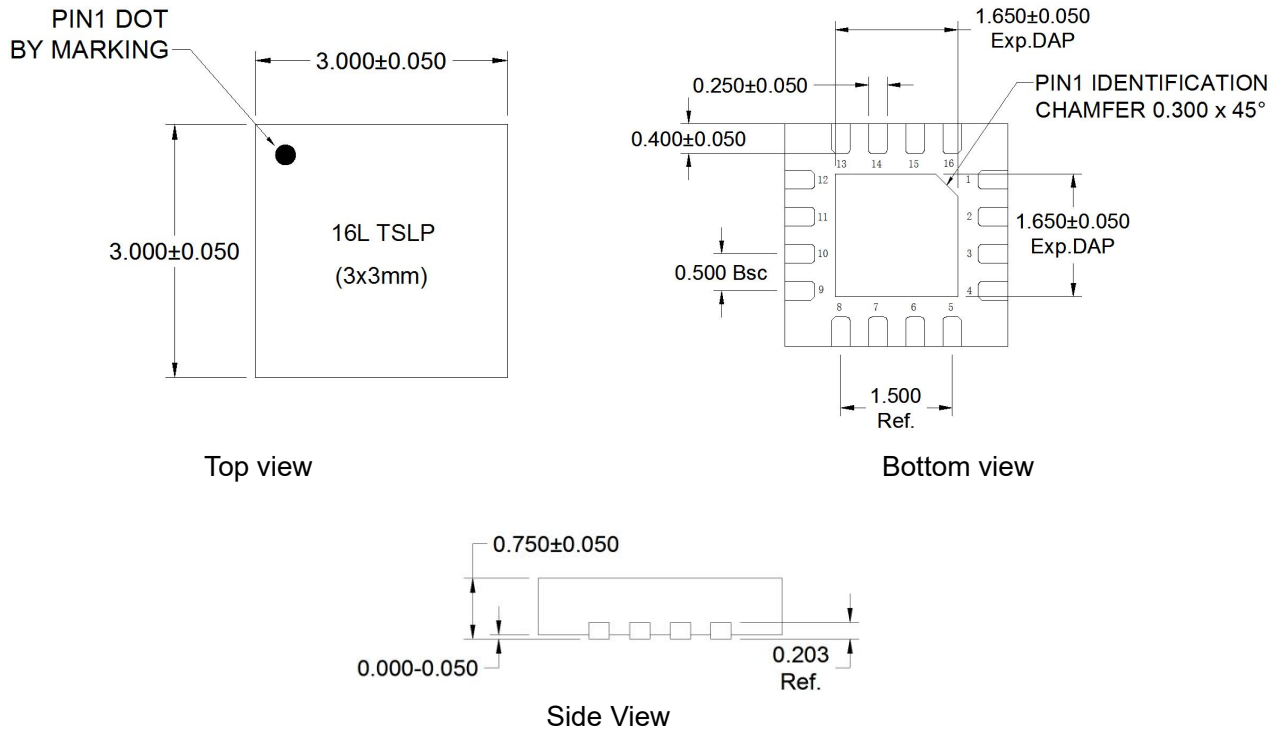


P-1dB vs. Frequency



GaAs MMIC Low Noise Amplifier Chip, 1-12 GHz

Appearance structure

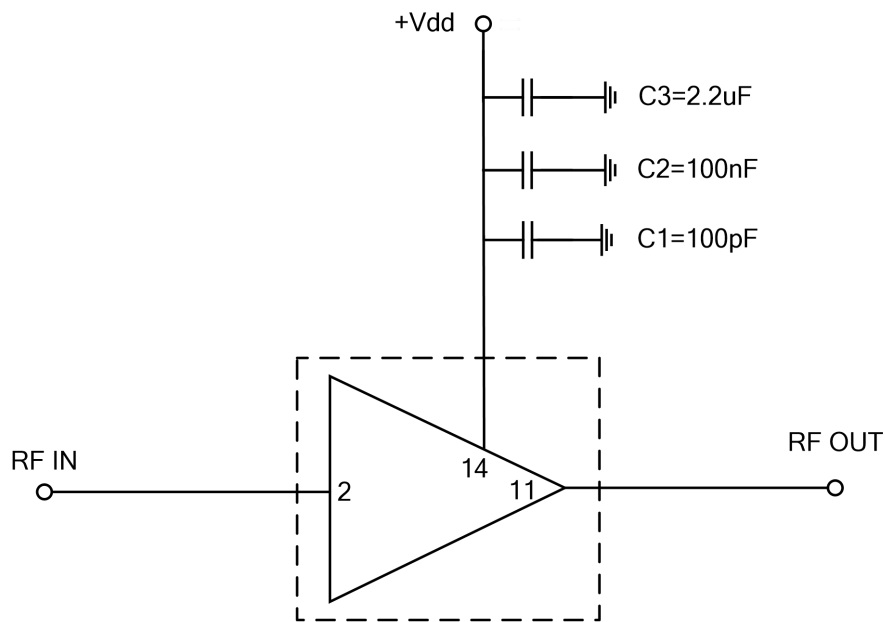


The units in the figure are all millimeters, with a tolerance of ± 0.05 mm.

Pin Definition		
Bonding point number	Function Symbol	Functional Description
2	RFIN	RF signal input terminal, no DC blocking capacitor required
11	RFOUT	RF signal output terminal, no DC blocking capacitor required
14	VDD	Amplifier Drain Bias
1, 3, 10, 12	GND	The bottom of the chip needs to be well grounded to RF and DC
4~9, 13, 15, 16	NC	No welding required

GaAs MMIC Low Noise Amplifier Chip, 1-12 GHz

Recommended Circuit



Raw material	Capacitance, inductance, resistance
C1	100pF
C2	100nF
C3	2.2uF

Precautions for use

- Sealing material: Low-pressure injection molding plastic that meets ROHS specifications
- Lead frame material: copper alloy
- Lead surface plating: 100% matte tin
- Maximum reflow peak temperature: 260°C