

GaAs MMIC Low Noise Amplifier, 1-9GHz

Features:

- Freq. Range: 1-9GHz
- Gain: 24.5dB
- NF: 0.7dB typ.
- P-1dB: 14dBm
- Supply: +5V/45mA
- 50Ohm Input/Output
- 100% On Wafer Test
- Size: 2.0 x 1.25 x 0.09 mm

Functional Diagram:

Product Introduction:

ILA-0109B is a broadband Low Noise Amplifier, the frequency range covers 1GHz~9GHz, the gain is 24.5dB, and the in-band noise figure is 0.7dB.ILA-0109B uses +5V single Supply.

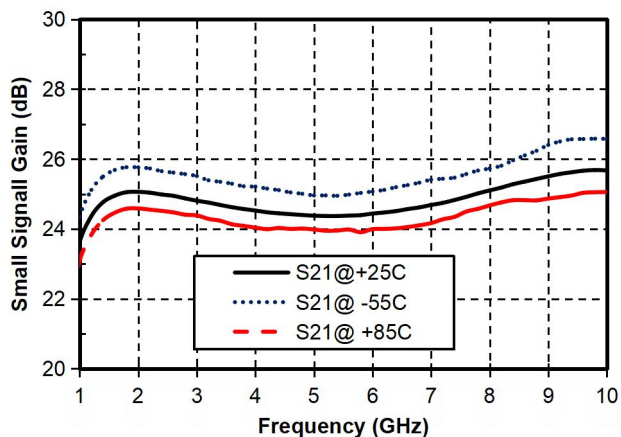
Absolute Maximum Ratings ¹	
Maximum Vdd	+7V
Maximum Input Power	+20dBm
Working Temperature	-55 ~ +85°C
Storage Temperature	-65 ~ +150°C
【1】 Exceeding any of the above maximum limits may cause permanent damage.	

Electrical Specifications($T_A = +25^\circ\text{C}$, $V_d = +5\text{V}$)				
Parameter	Min.	Typ.	Max.	Units
Freq. Range	1-9			GHz
Gain	23	24.5	26	dB
Gain Flatness		± 1.5		dB
NF		0.7		dB
P-1dB		14		dBm
Psat		16		dBm
Input Return Loss		17		dB
Output Return Loss		13		dB
Current	35	45	55	mA

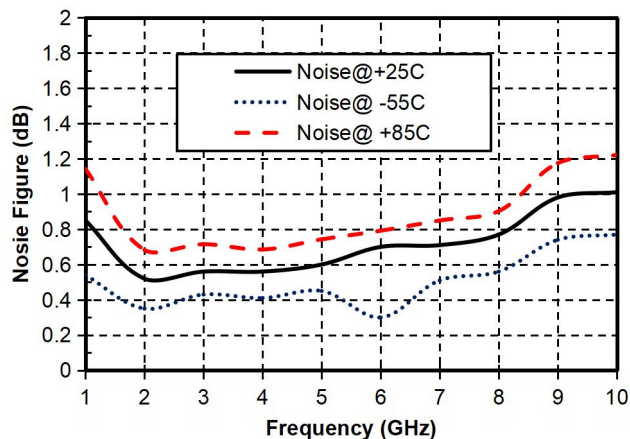
GaAs MMIC Low Noise Amplifier, 1-9GHz

Test Curve

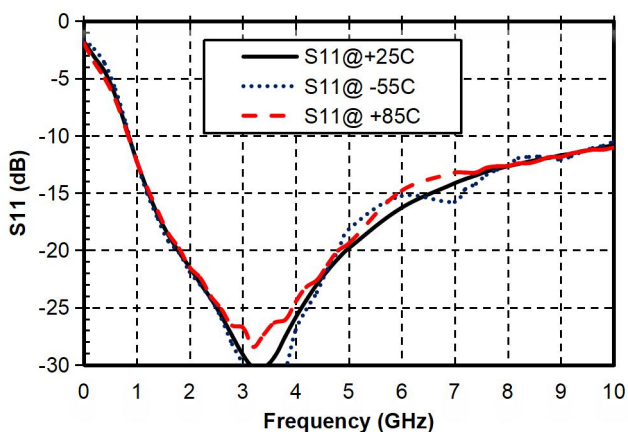
Gain vs. Freq.



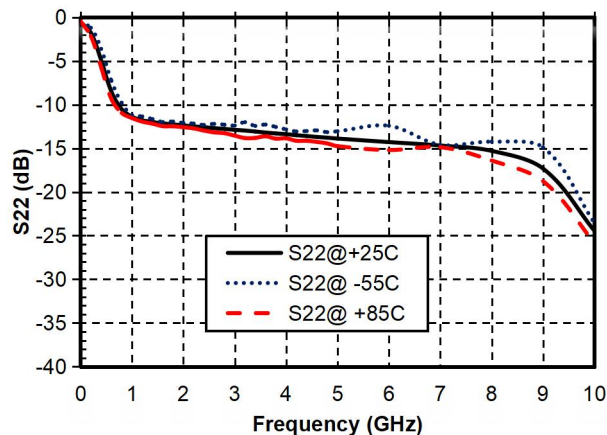
NF vs. Freq.



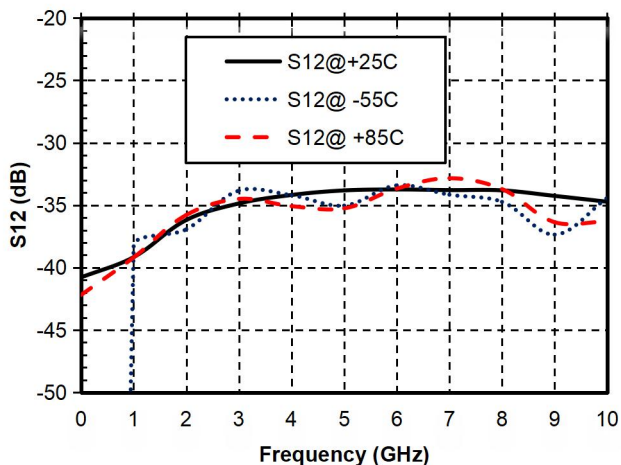
Input Return Loss vs. Freq.



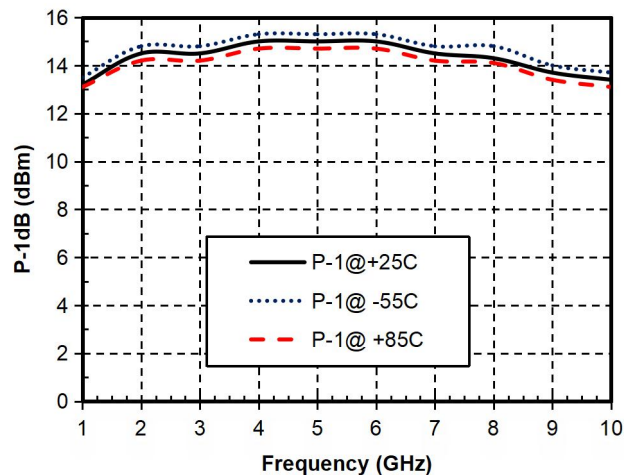
Output Return Loss vs. Freq.



Reverse Isolation vs. Freq.

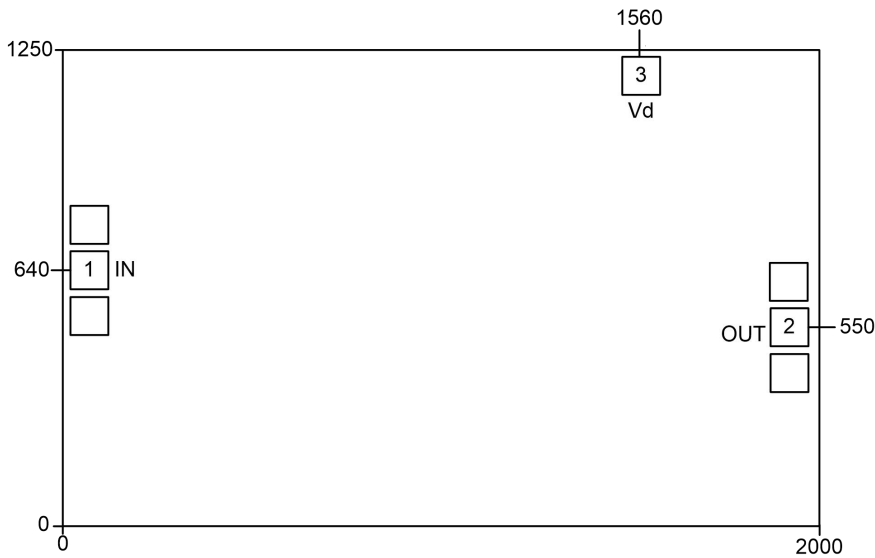


P-1dB vs. Freq.



GaAs MMIC Low Noise Amplifier, 1-9GHz

Outline Drawing²



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

Pad Descriptions		
Pad Number	Function Symbol	Description
1	RFIN	RF signal input terminal, DC blocking capacitor is required.
2	RFOUT	RF signal Output terminal, no DC blocking capacitor required
3	VDD	Amplifier drain bias, an external 100pF bypass capacitor is required.
Bottom of the chip	GND	Bottom of the chip needs to be well grounded with RF and DC

GaAs MMIC Low Noise Amplifier, 1-9GHz

Recommended assembly drawing

