

## GaAs MMIC Low Noise Amplifier, 1-9GHz

### Features:

- Freq. Range: 1-9GHz
- Gain: 28dB
- NF: 0.7dB typ.
- P-1dB: 14dBm
- Supply: +5V/67mA
- 50Ohm Input/Output
- 100% On Wafer Test
- Size: 1.85 x 1.25 x 0.09 mm

### Functional Diagram:

### Product Introduction:

ILA-0109A is a broadband Low Noise Amplifier, the frequency range covers 1GHz~9GHz, the gain is 28dB, and the in-band noise figure is 0.7dB. ILA-0109A uses +5V single supply.

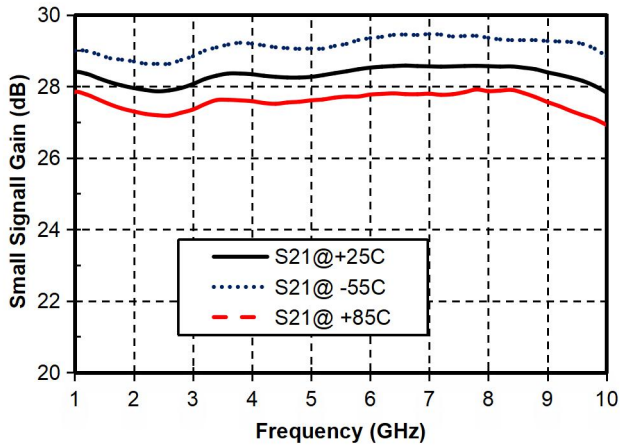
Absolute Maximum Ratings <sup>1</sup>	
Maximum Vdd	+7V
Maximum Input Power	+20dBm
Working Temperature	-55 ~ +85°C
Storage Temperature	-65 ~ +150°C
【1】 Exceeding any of the above maximum limits may cause permanent damage.	

Electrical Specifications( $T_A = +25^\circ\text{C}$ , $V_d = +5\text{V}$ )				
Parameter	Min.	Typ.	Max.	Units
Freq. Range	1-9			GHz
Gain	27	28	29.5	dB
Gain Flatness		$\pm 0.5$		dB
NF		0.7		dB
P-1dB		14		dBm
Psat		15		dBm
Input Return Loss		11		dB
Output Return Loss		14		dB
Current	50	67	80	mA

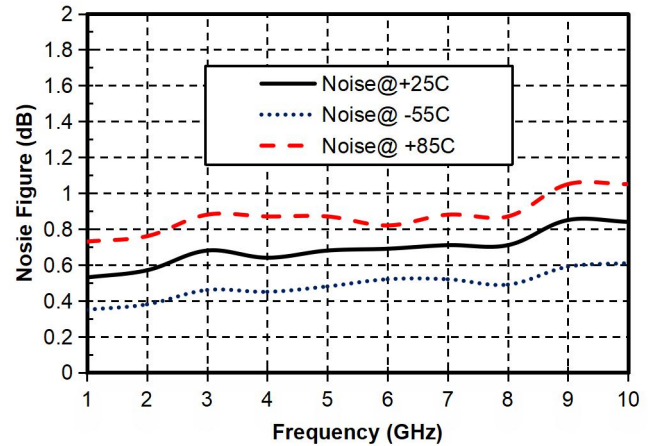
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### Test Curve

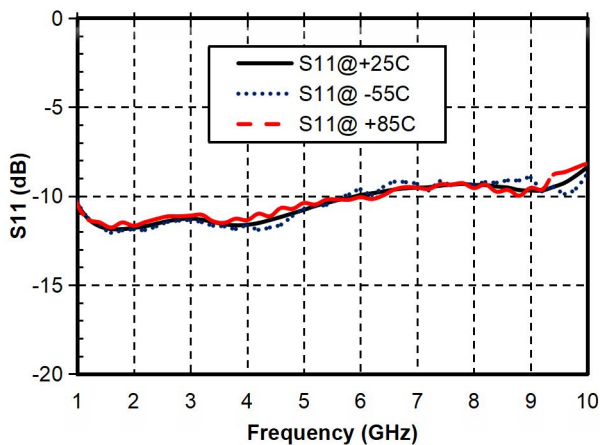
Gain vs. Freq.



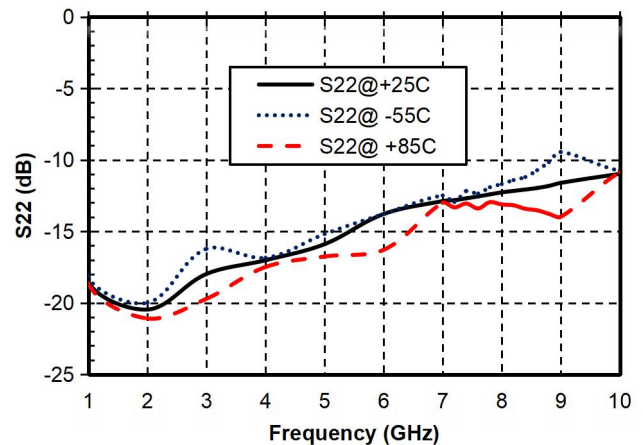
NF vs. Freq.



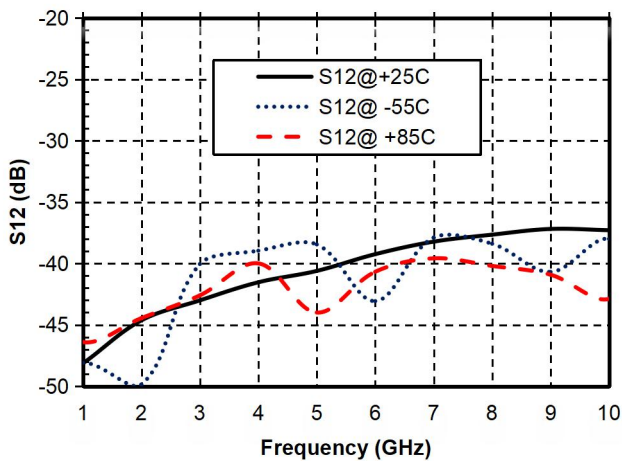
Input Return Loss vs. Freq.



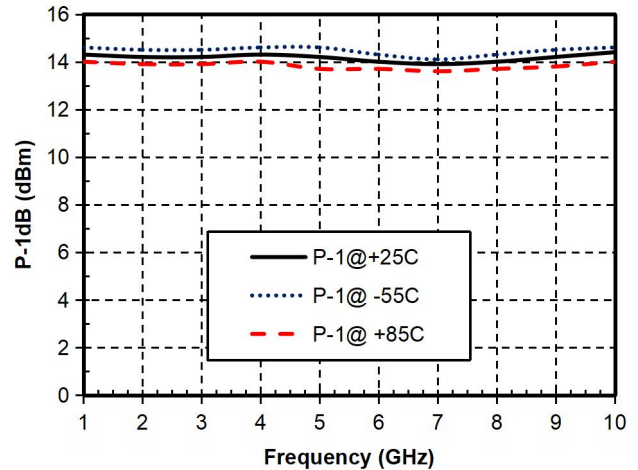
Output Return Loss vs. Freq.



Reverse Isolation vs. Freq.

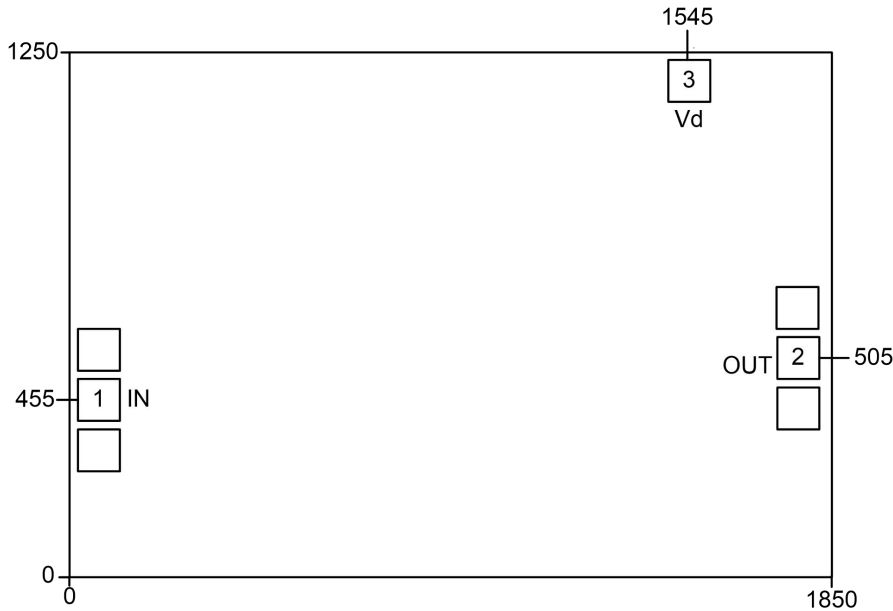


P-1dB vs. Freq.



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### Outline Drawing<sup>2</sup>



【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

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Recommended assembly drawing

