芯谷微电子
IC VALLEY Microelectronics

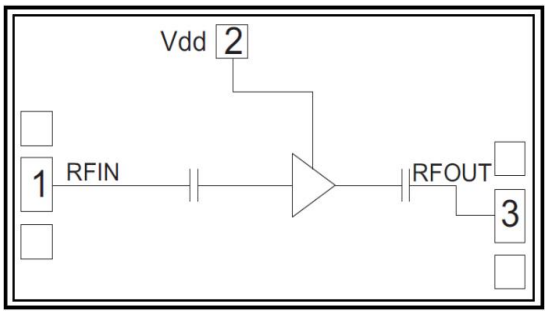
ILA-0812D/DM

GaAs MMIC Low Noise Amplifier, 8-12GHz

Features:

- Freq. Range: 8-12GHz
- Gain: 29dB(Positive slope)
- NF: 1.0dB max.
- P-1dB: 3dBm
- Supply: +5V/10mA
- 50Ohm Input/Output
- 100% On Wafer Test
- Size: 2.25 x 0.95 x 0.09mm

Functional Diagram:



Product Introduction:

ILA-0812D/ILA-0812DM are two broadband Low Noise Amplifiers.
ILA-0812DM is a mirror image version, the frequency range covers 8GHz~12GHz, the gain is 29dB, and the in-band noise figure is 1dB.
ILA-0812D uses +5V single supply. The current is 10mA. It is suitable for multi-channel, low-power demand systems.

Abosulte 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°C, Vd1=+3.3V, Vd2=+5V, pick one of two)				
Parameter	Min.	Typ.	Max.	Units
Freq. Range		8-12		GHz
Gain	-	29	-	dB
Gain Flatness		±1.0		dB
NF	-	-	1.0	dB
P-1dB	2	3	5	dBm
P-3dB	3	5	7	dBm
Input Return Loss	18	25	-	dB
Output Return Loss	15	15	-	dB
Current		10		mA

Block E, Provincial Science and Technology Achievement Transformation Base, No. 425, Chuangxin Avenue, Shushan District, Hefei City, Anhui Province.
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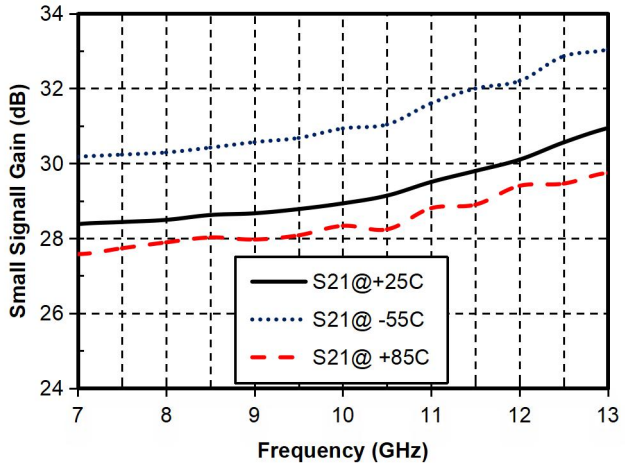
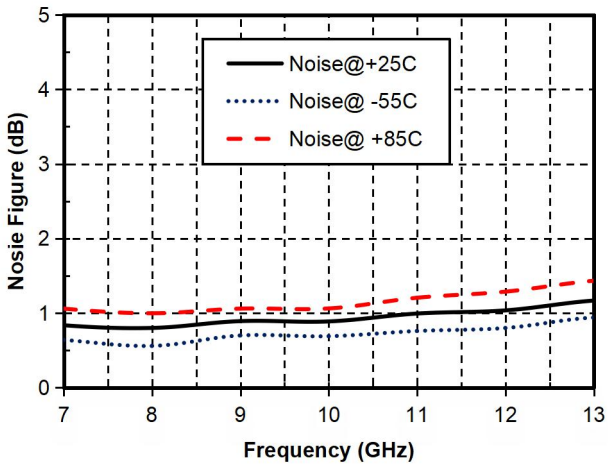
Test Curve

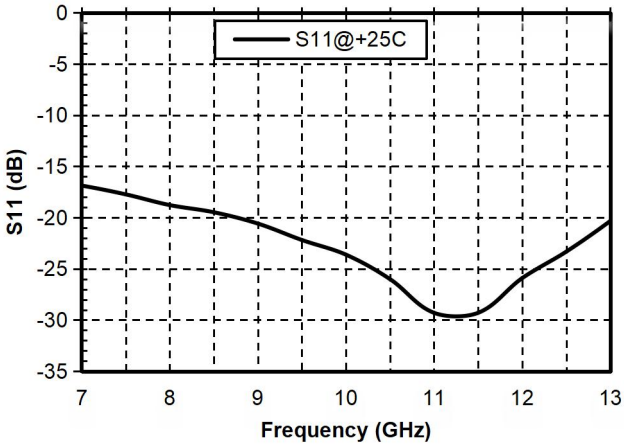
Gain vs. Freq.



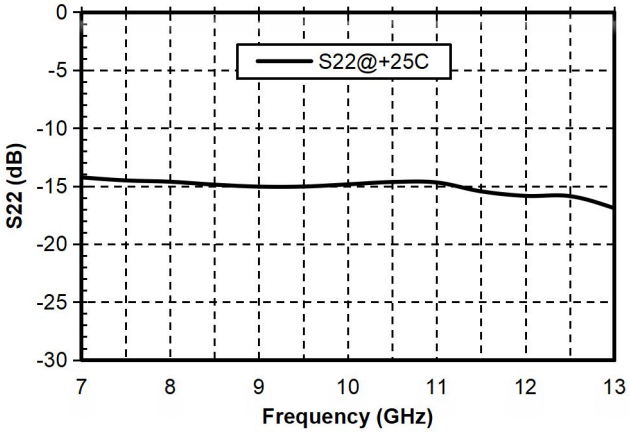
NF vs. Freq.



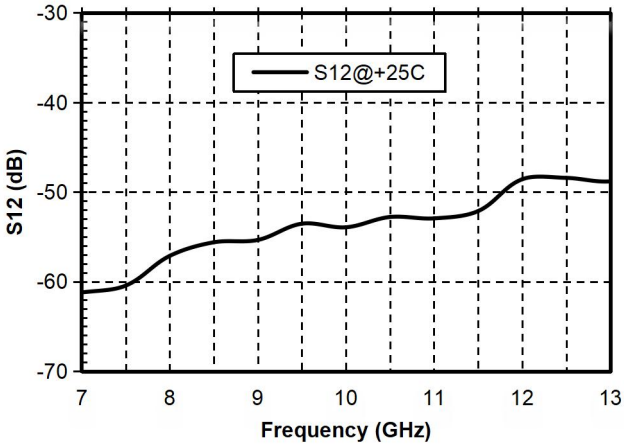
Input Return Loss vs. Freq.



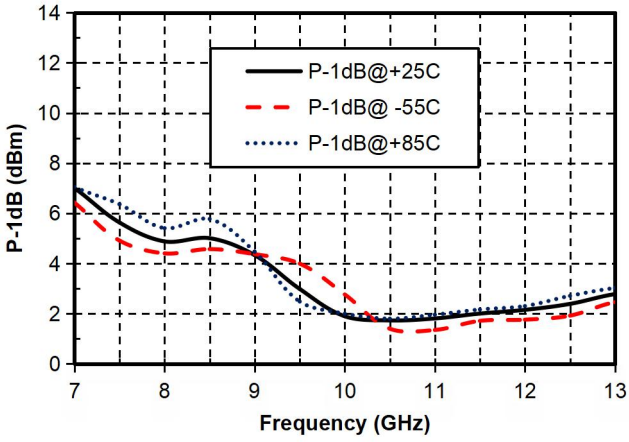
Output Return Loss vs. Freq.



Reverse Isolation vs. Freq.



P-1dB vs. Freq.



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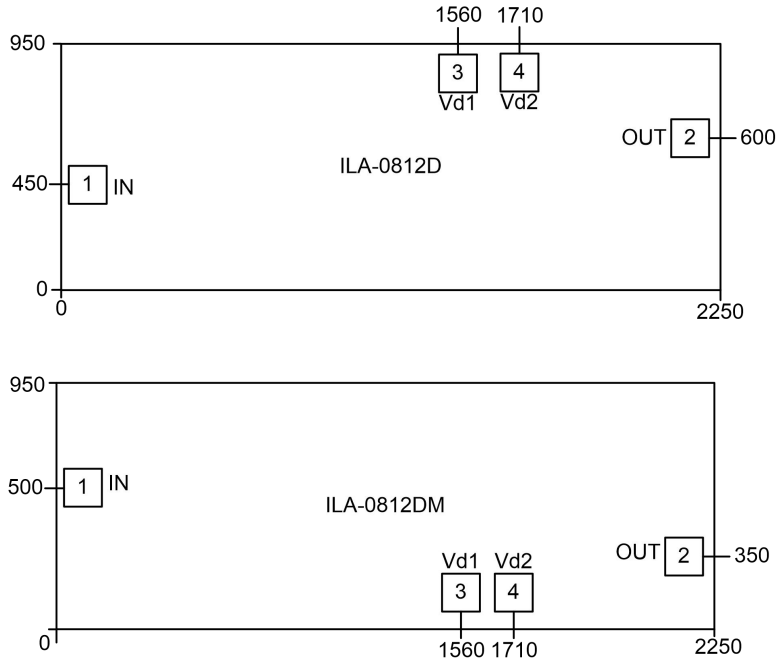
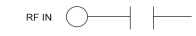
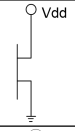
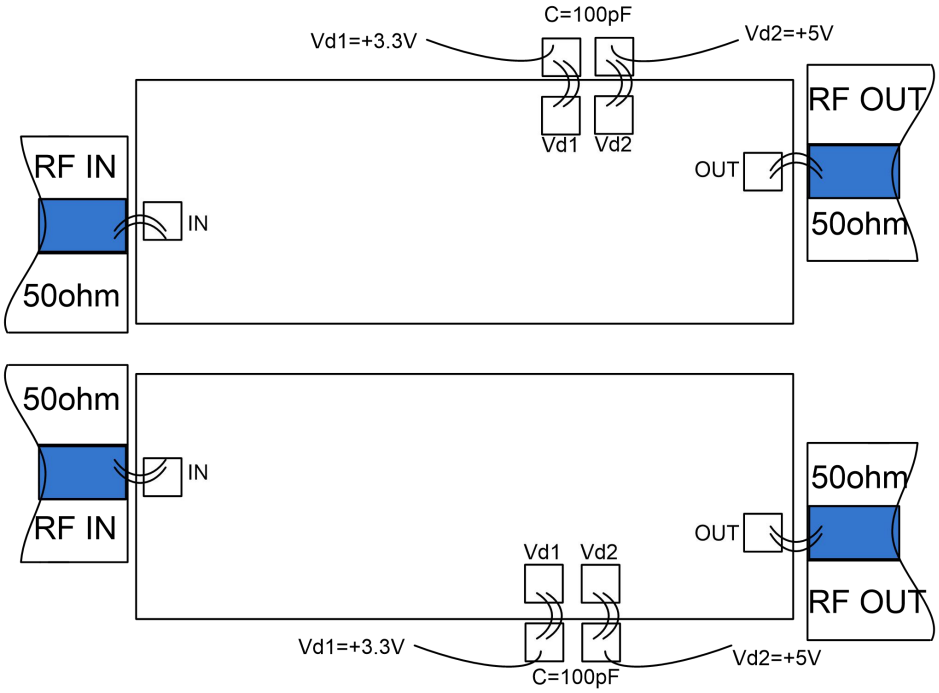
Outline Drawing[2]



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

Pad Descriptions			
Pad Number	Function Symbol	Description	Equivalent Circuit
1	RFIN	RF signal input terminal, no DC blocking capacitor required	
2	RFOUT	RF signal Output terminal, no DC blocking capacitor required	
3、4	VD1、VD2	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	

Recommended assembly drawing



(Vd1=+3.3V, Vd2=+5V, Power up)