Suzhou Talent Microwave,Inc
sales@talentmw.com
www.talentmw.com

C-band Cryogenic Low Noise Amplifier

4-8GHz, Noise temperature:1.5 K, Gain:40 dB Model: TLLA4G8G-39-00-Cryo

TLLA4G8G-39-00-Cryo is cryogenic InP HEMT amplifier for C-band(4 to 8 GHz) which is able to be used for 4K delivers high gain and extreme low noise figure properties.LNAs are tested at both 300 K and 4 K by using cryogenic RF measurement system, and provided with a performance report.

Features:

- Frequency range:4-8 GHz
- Gain: 40dB Typ
- Average Noise temperature: 1.5 K @4K
- Technology:InP HEMT
- Compact size & Lightweight

电气特性 Electrical Characteristics:

参数 Parameter	Min	Typ	Max	单位 Units
频率范围 Frequency range	4		8	GHz
增益 Gain@4K		40		dB
增益平坦度 Gain Flatness @4K		±1		dB
平均噪声温度 Average Noise temperature @4K		1.5		K
输入回波损耗 Input Return Loss		10		dB
输出回波损耗 Output Return Loss		15		dB
供电 DC power (typical) @4K	Vds = 0.47 V, Ids = 6.75mA			V DC
功耗 Power Consumption		3.2		mW
阻抗 Impedance	50			Ohms

机械特性 Mechanical Specifications:

参数 Parameter	指标 Value	单位 Units
输入/输出接口 Input /Output Connector	SMA Female/SMA Female	
直流偏置 DC Bias	Nano D connector	
尺寸 Size	26.75*26*7.5	mm

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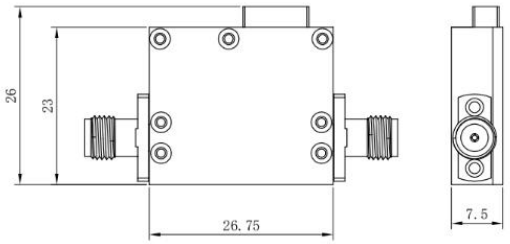
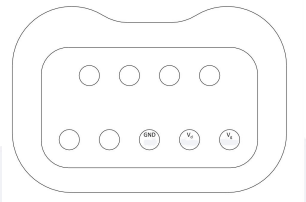
绝对最大值 Absolute Maximum Ratings:

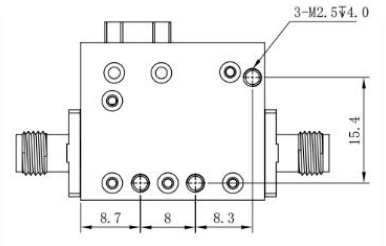
参数 Parameter	指标 Value
漏极电压Drain voltage Vd	+1.5V
漏极电流Drain current Id	100mA
栅极电压 Gate voltage Vg	-0.9V to +0.9V
输入功率 RF Input Power	-10 dBm
ESD灵敏度 ESD sensitivity (HBm)	Class 0, passed 150V

外形图 Outline Drawing:

Unit:mm







Nano D connector seen from outside the LNA	
引脚 Pin #	功能Function
3	GND
4	VD
5	VG
1,2,6,7,8,9	NC

ESD Protection: Strictly adhere to ESD precautions to prevent electrostatic damage.

温度环境 Environmental Conditions:

参数 Parameter	Min	Typ	Max	单位 Units
操作温度 Operating Temperature	3		313	K
存储温度 Non-operating Temperature	0		+85	℃
相对湿度 Relative humidity		95		%
海拔 Altitude	10,000			feet
震动 Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
冲击 Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

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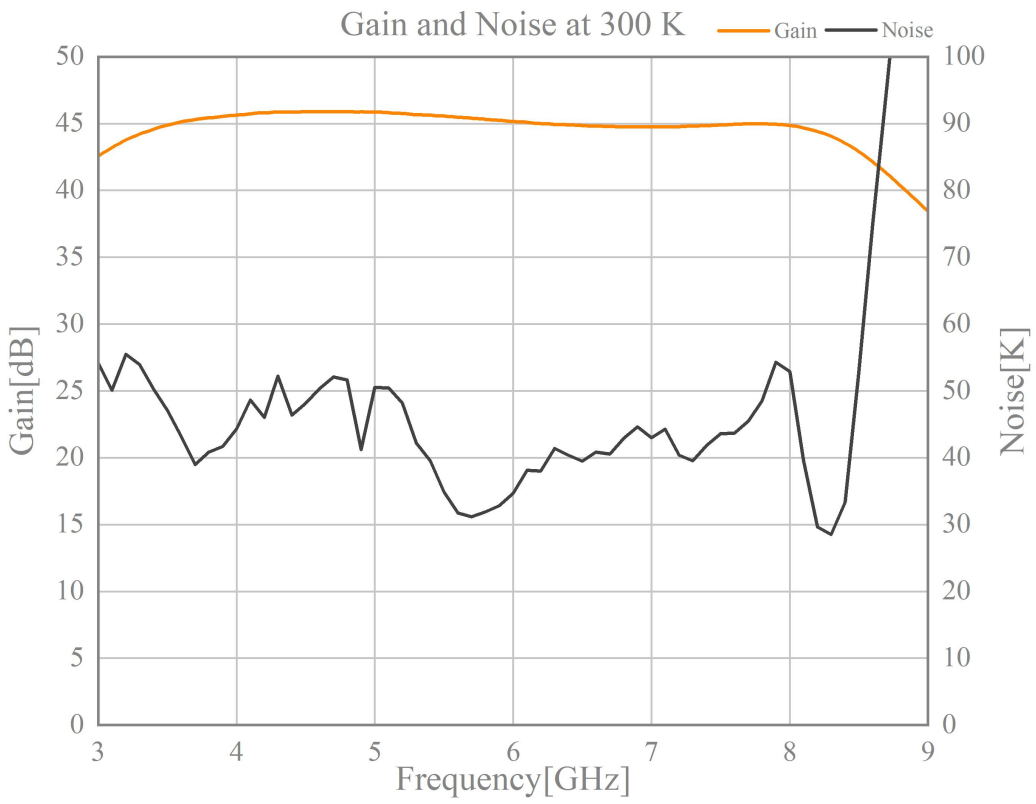
订货信息 Ordering Information:

标准型号 Base Number	描述 Description	版本号 Revision
TLLA4G8G-39-00-Cryo	C-band Cryogenic Low Noise Amplifier 4-8GHz, Noise temperature:1.5K, Gain:40 dB	Rev.1.1

测试数据 Measured data, Tamb = 300 K



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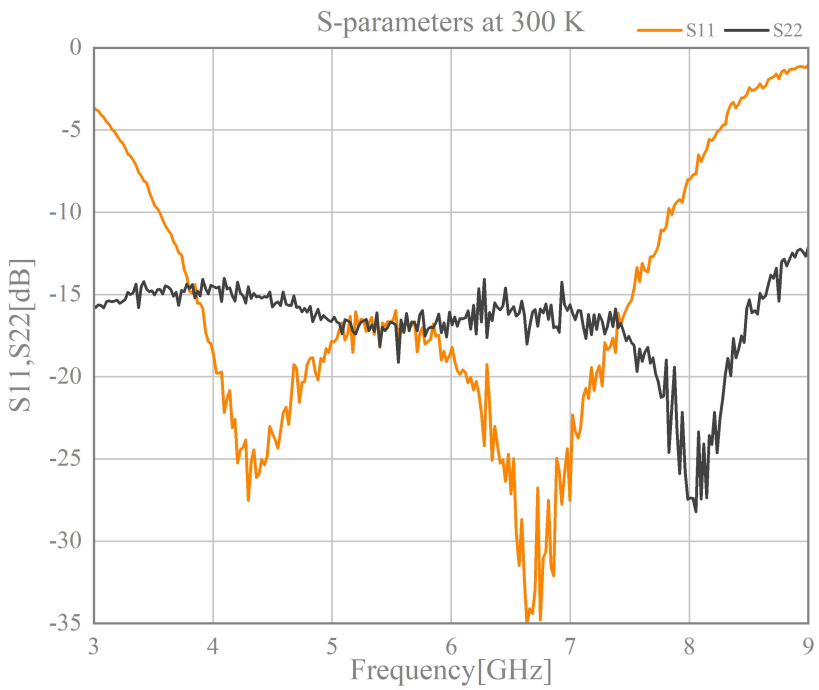
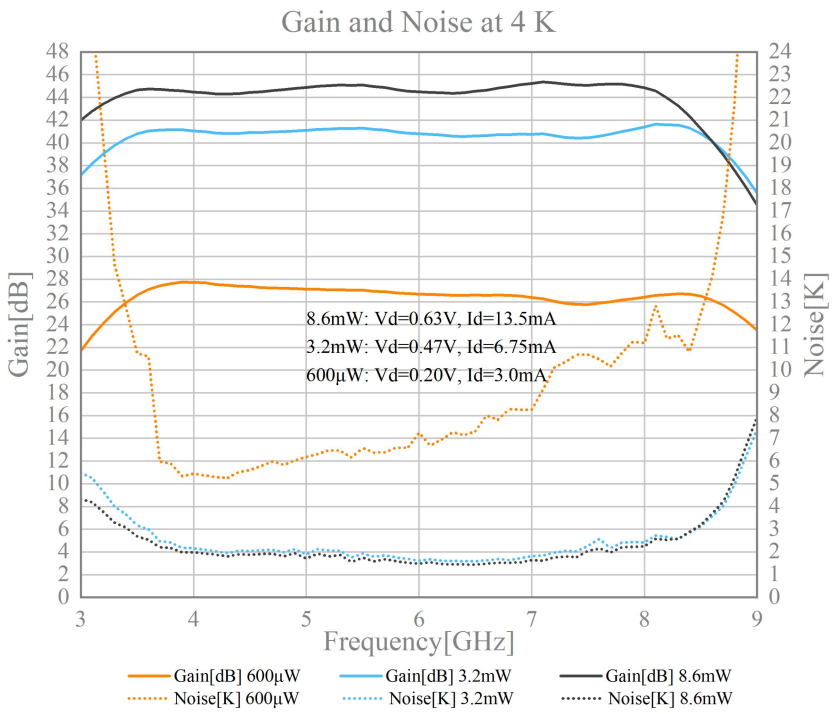
测试数据 Measured data, Tamb=4 K: