泰莱微波
Talent Microwave

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:

Parameter	Min	Typ	Max	Units
Frequency range	4		8	GHz
Gain@4K		40		dB
Gain Flatness @4K		±1		dB
Average Noise temperature @4K		1.5		K
Input Return Loss		10		dB
Output Return Loss		15		dB
DC power (typical) @4K	Vds = 0.47 V, Ids = 6.75mA			V DC
Power Consumption		3.2		mW
Impedance	50			Ohms

Mechanical Specifications:

Parameter	Value	Units
Input /Output Connector	SMA Female/SMA Female	
DC Bias	Nano D connector	
Size	26.75*26*7.5	mm

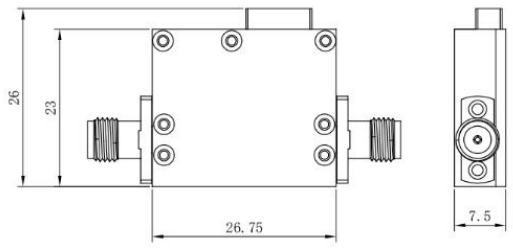
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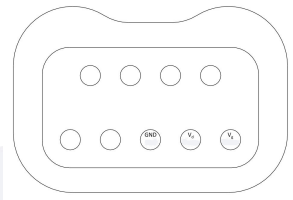
Absolute Maximum Ratings:

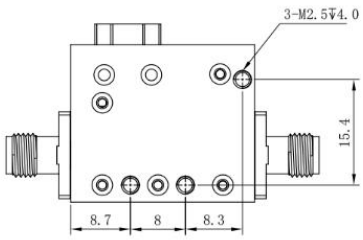
Parameter	Value
Drain voltage Vd	+1.5V
Drain current Id	100mA
Gate voltage Vg	-0.9V to +0.9V
RF Input Power	-10 dBm
ESD sensitivity (HBm)	Class 0, passed 150V

Outline Drawing:

Unit:mm







Nano D connector seen from outside the LNA	
Pin #	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.

Environmental Conditions:

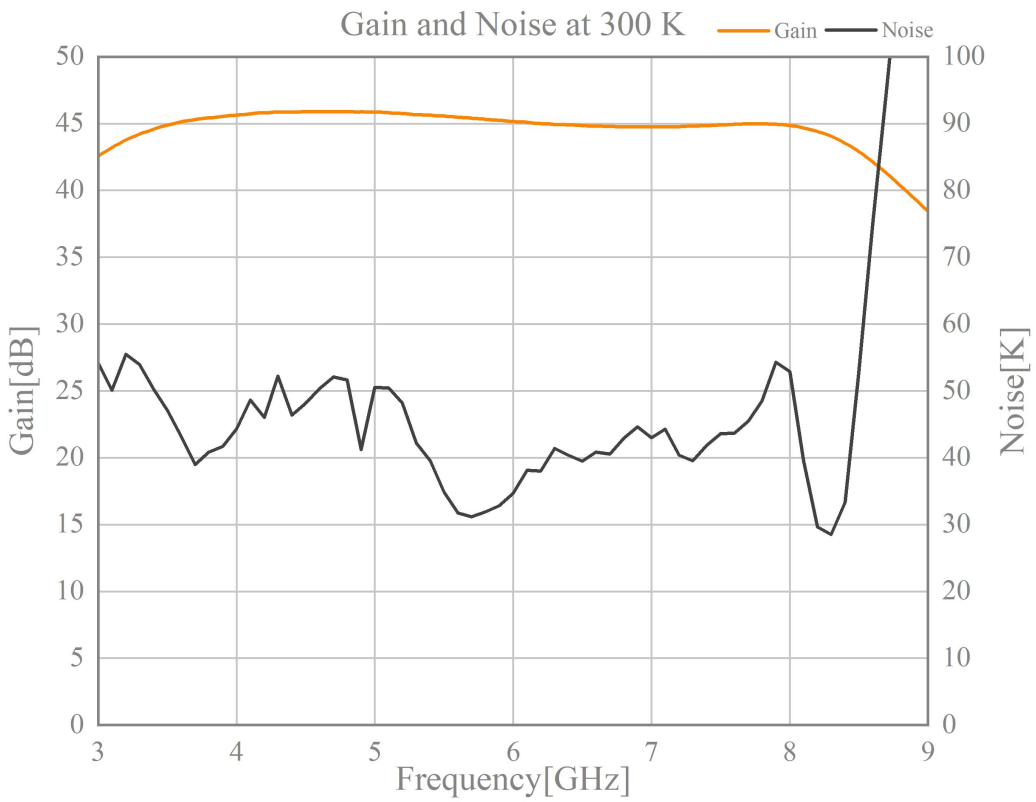
Parameter	Min	Typ	Max	Units
Operating Temperature	3		313	K
Non-operating Temperature	0		+85	℃
Relative humidity		95		%
Altitude	10,000			feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

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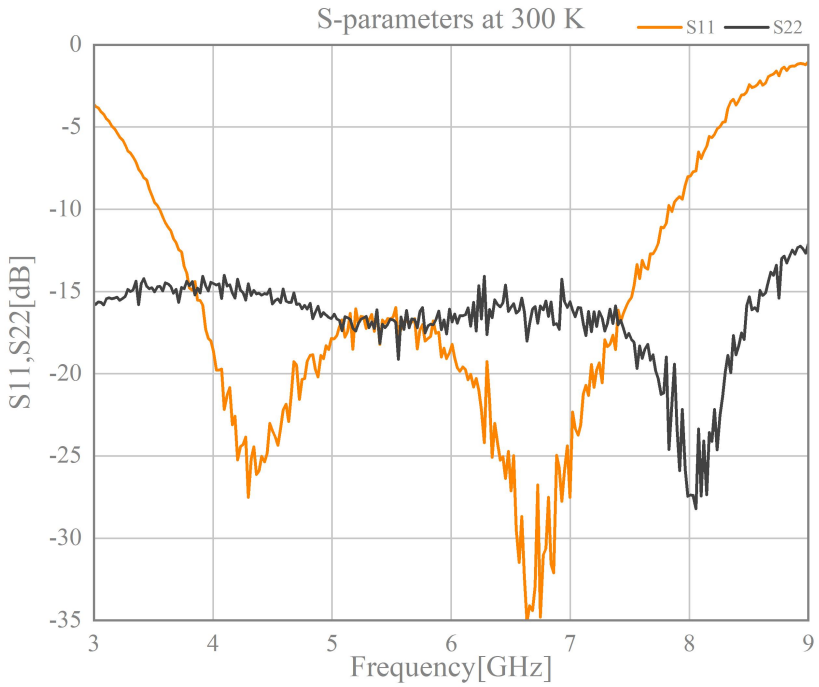
Ordering Information:

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

Measured data, Tamb = 300 K



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Measured data, Tamb=4 K:

