泰莱微波
Talent Microwave

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Cryogenic Low Noise Amplifier

1-12GHz, Noise temperature:3 K, Gain:33 dB Model: TLLA1G12G-33-00-Cryo

TLLA1G12G-33-00-Cryo is cryogenic InP HEMT amplifier for 1 GHz to 12 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:1-12 GHz
- Gain: 33 dB Typ
- Average Noise temperature: 3 K @4K
- Technology:InP HEMT
- Compact size & Lightweight

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
Frequency range	1		12	GHz
Gain@4K		33		dB
Gain Flatness @4K		±1.5		dB
Average Noise temperature @4K		3		K
Input Return Loss		7		dB
Output Return Loss		10		dB
DC power (typical) @4K	Vds = 0.75 V, Ids = 7.5mA			V DC
Power Consumption		5.7		mW
Impedance	50			Ohms

Mechanical Specifications:

Parameter	Value	Units
Input /Output Connector	SMA Female/SMA Female	
DC Bias	Nano D connector	
Size	30.32*21.77*7.5	mm

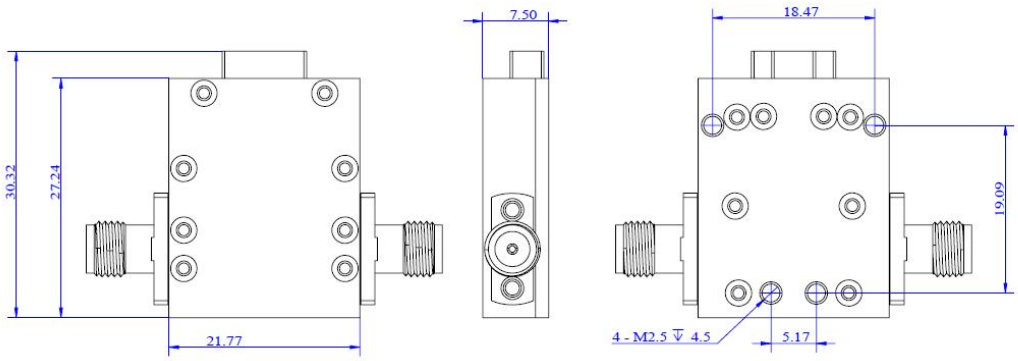
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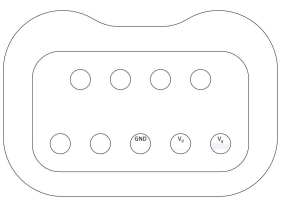
Absolute Maximum Ratings:

Parameter	Value
Drain voltage Vd	+2.5V
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	
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.

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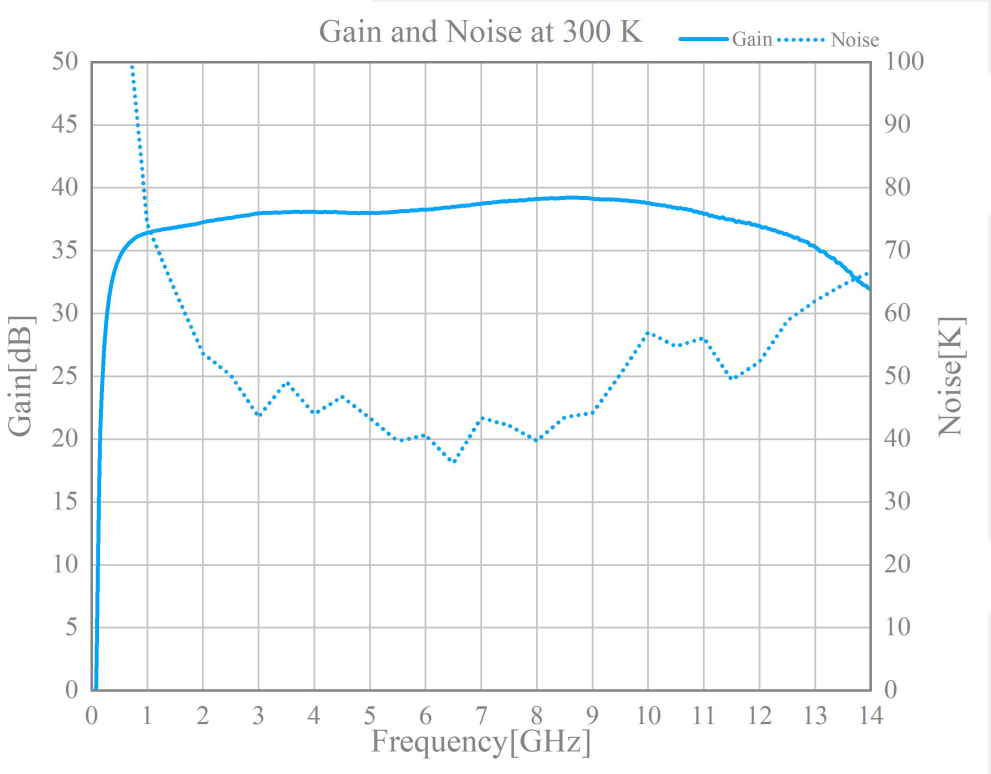
Environmental Conditions:

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			

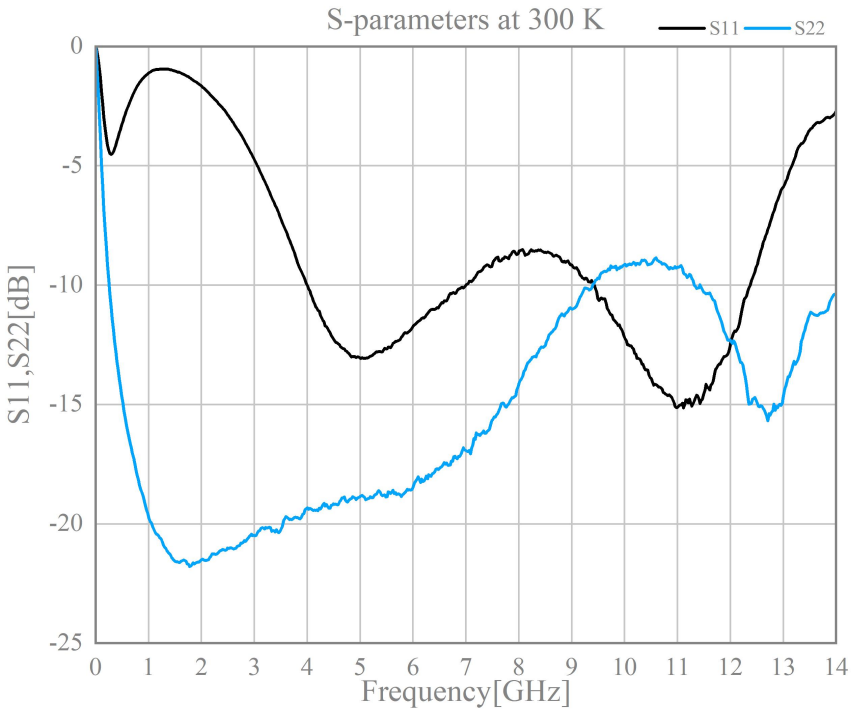
Ordering Information:

Base Number	Description	Revision
TLLA1G12G-33-00-Cryo	C-band Cryogenic Low Noise Amplifier 1-12GHz, Noise temperature:3 K, Gain:33 dB	Rev.1.1

Measured data, Tamb = 300 K



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Measured data, Tamb=4 K:

