

## Ka-band Cryogenic Low Noise Amplifier

**20-40GHz/1.7dB NF/20dB Gain**

**Model: TLLA20G40G-21-00-Cryo**

TLLA20G40G-21-00-Cryo is a Ka-band cryogenic low noise amplifier with a typical small signal gain of 20 dB across the frequency range of 20 to 40 GHz. The drain voltage range requirement for the amplifier is 0.6V to 1.5V DC and gate voltage range is from -2 to +2V DC. The input and output port configuration offers coax adapter structure with 2.92mm female.

### Features:

- Frequency range: 20-40GHz
- Gain: 20dB Typ
- Noise Figure: 1.7dB @Temperature=296K
- Capable of operation at 2 K
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

### Applications:

- Communication systems

### 电气特性 Electrical Characteristics:

参数 Parameter	Min	Typ	Max	单位 Units
频率范围 Frequency range	20		40	GHz
小信号增益 Small Signal Gain		20		dB
增益平坦度 Gain Flatness		±2.0		dB
噪声系数 Noise Figure		1.7		dB
输出P1dB压缩点 Output 1dB Gain Compression Point		-5		dBm
输入回波损耗 Input Return Loss		-8		dB
输出回波损耗 Output Return Loss		-8		dB
漏极电压范围 Drain voltage range	0.6		1.5	V
漏极电流范围 Drain current range		25		mA
栅极电压范围 Gate voltage range	-2		2	V
功耗 Power Consumption		30		mW
阻抗 Impedance		50		Ohms

## 机械特性 Mechanical Specifications:

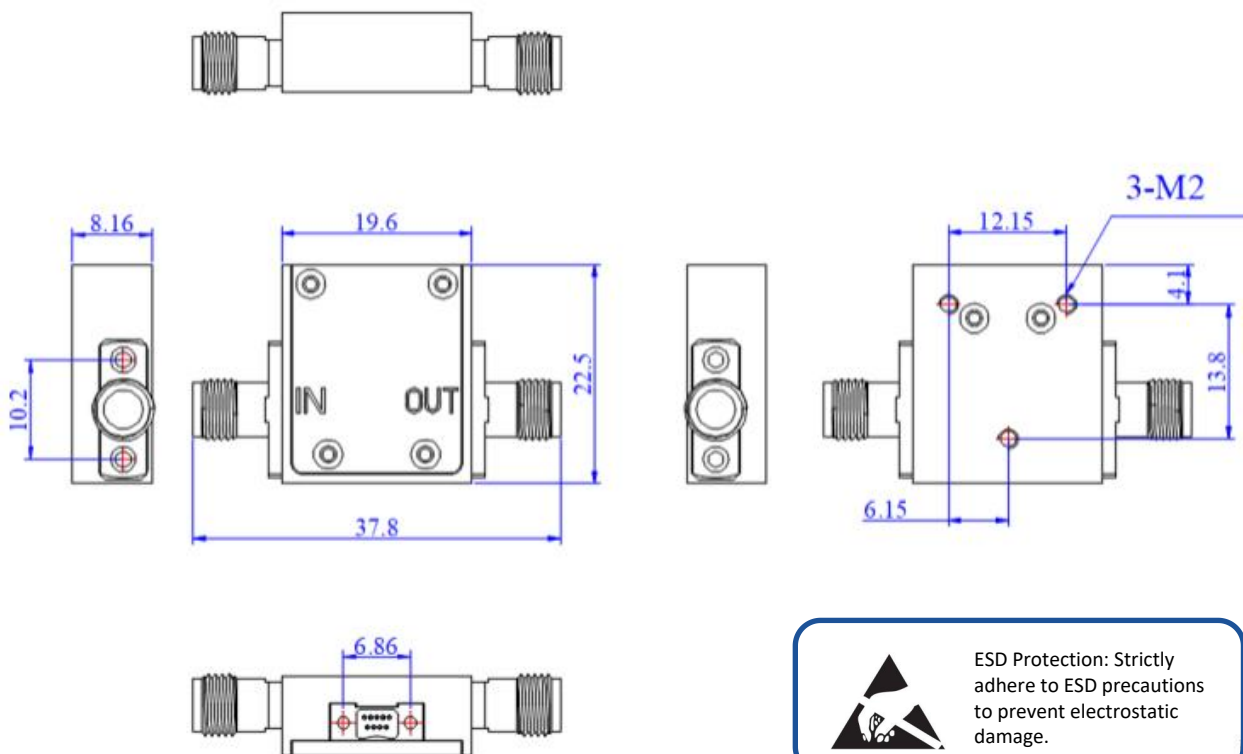
参数 Parameter	指标 Value	单位 Units
输入/输出接口 Input /Output Connector	2.92mm Female/2.92mm Female	
直流偏置 DC Bias	Nano D 9-Pin	
尺寸 Size	19.6*22.5*8.16	mm

## 绝对最大值 Absolute Maximum Ratings:

参数 Parameter	指标 Value
漏极电压 Drain voltage	+1.5 V
栅极电压 Gate voltage	+2 V
ESD灵敏度 ESD sensitivity (HBm)	Class 0, passed 150V

## 外形图 Outline Drawing:

Unit:mm



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

## 加电接口 Power Supply Conector:

Nano D 9Pin			
引脚 Pin#	功能 Function	引脚 Pin#	功能 Function
1,2	NC	5	VG
3	GND	6~9	NC
4	VD		

## 温度环境 Environmental Conditions:

参数 Parameter	Min	Typ	Max	单位 Units
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			

## 订货信息 Ordering Information:

标准型号 Base Number	描述 Description	版本号 Revision
TLLA20G40G-21-00-Cryo	Ka-band Cryogenic Low Noise Amplifier, 20-40GHz, Noise Figure: 1.7dB, Gain: 20dB	Rev.1.1