

## W-band Cryogenic Low Noise Amplifier

75-110GHz/3.5dB NF/23dB Gain

Model: TMLA-075110-2304-10-Cryo

TMLA-075110-2304-10-Cryo is a W-band cryogenic low noise amplifier with a typical small signal gain of 23 dB across the frequency range of 75 to 110 GHz. The drain voltage requirement for the amplifier is 1V DC and gate voltage is -0.3V DC. The input and output port configuration offers an inline structure with WR-10 waveguides and UG-387/U-M anticocking flanges.

### Features:

- Frequency range: 75-110GHz
- Gain: 32dB Min
- Noise Figure: 3.5dB Typ
- Capable of operation at 4 K
- Good Power and Gain Flatness
- Using InP HEMT technology

### Applications:

- Communication systems

### 电气特性 Electrical Characteristics:

参数 Parameter	Min	Typ	Max	单位 Units
频率范围 Frequency range	75		110	GHz
小信号增益 Small Signal Gain		23		dB
增益平坦度 Gain Flatness		±1.5		dB
噪声系数 Noise Figure		3.5		dB
输出P1dB压缩点 Output 1dB Gain Compression Point		-5		dBm
输入驻波 Input VSWR		2		:1
输出驻波 Output VSWR		2		:1
漏极电压范围 Drain voltage range		1		V
漏极电流范围 Drain current range		35		mA
栅极电压范围 Gate voltage range		-0.3		V

## 机械特性 Mechanical Specifications:

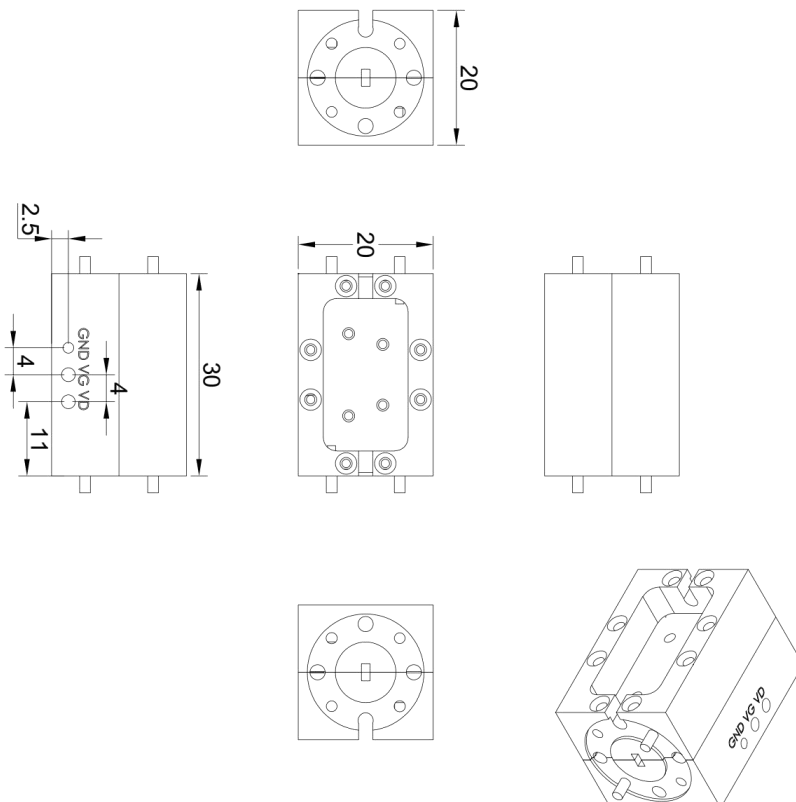
参数 Parameter	指标 Value	单位 Units
输入/输出接口 Input /Output Connector	WR10/UG-387/U	
直流偏置 DC Bias	Solder Pin	
尺寸 Size	30*20*20	mm
重量 Weight	45	g

## 绝对最大值 Absolute Maximum Ratings:

参数 Parameter	指标 Value
漏极电压 Drain voltage	+2 V
漏极电流 Input Drain Current	100 mA
栅极电压 Gate voltage	+0V
输入功率 RF Input Power	+5 dBm
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.

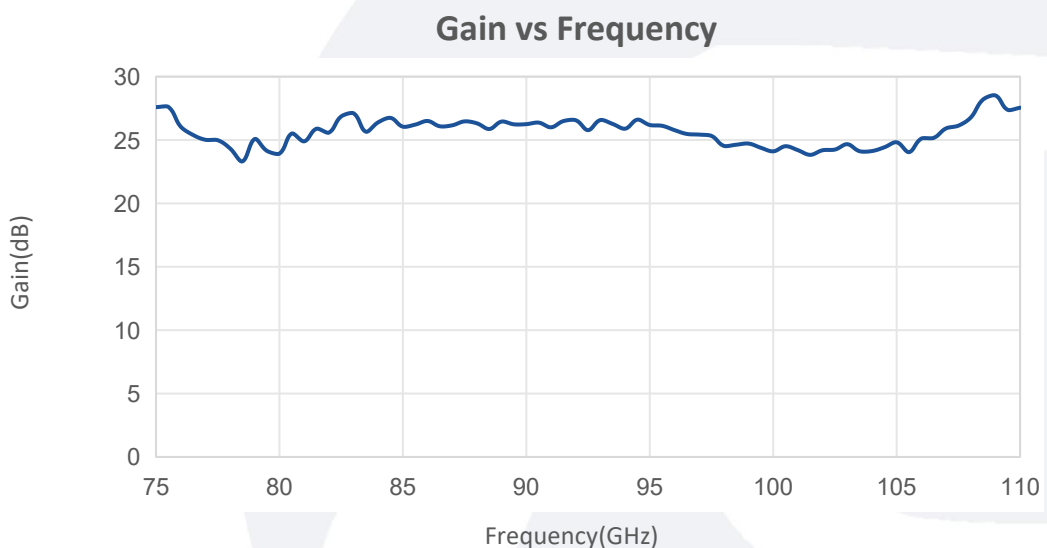
## 温度环境 Environmental Conditions:

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:

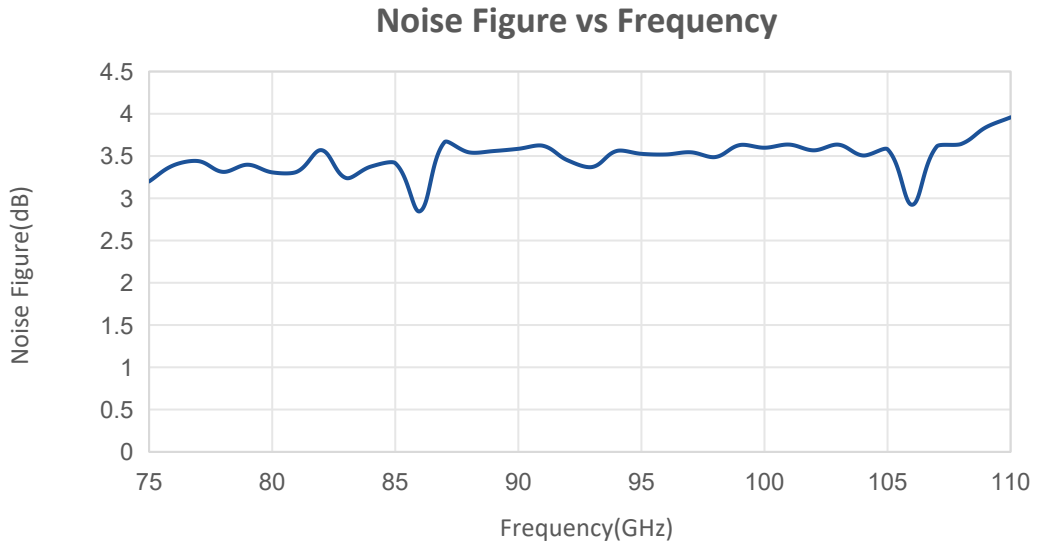
标准型号 Base Number	描述 Description	版本号 Revision
TMLA-075110-2304-10-Cryo	W-band Cryogenic Low Noise Amplifier, 750-110GHz, Noise Figure: 3.5dB, Gain: 23dB	Rev.1.0

## 典型曲线 Typical Performance Data:



Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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