

## Low Noise Amplifier

4-20GHz/6.5dB NF/12dB Gain/21dBm P1dB

Model: TLLA4G20G-12-65

TLLA4G20G-12-65 is a low noise amplifier with a typical small signal gain of 12 dB and a nominal noise figure of 6.5 dB across the frequency range of 4 to 20 GHz. The DC power requirement for the amplifier is +8 V DC/135 mA. The input and output port configuration offers coax adapter structure with SMA female.

### Features:

- Frequency range: 4-20GHz
- Gain: 12dB Typ
- Noise Figure: 6.5dB Typ
- 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	4		20	GHz
小信号增益 Small Signal Gain	11	12		dB
相位噪声 Phase Noise	-162@10kHz			dBc/Hz
噪声系数 Noise Figure		6.5		dB
线性输出功率 Output P1dB		21		dBm
饱和输出功率 Output Psat		22		dBm
输入驻波 Input VSWR		1.8		:1
输出驻波 Output VSWR		1.8		:1
直流电压 DC Voltage	+7	+8	+9	V DC
直流电流 DC Supply Current		135		mA
阻抗 Impedance	50			Ohms

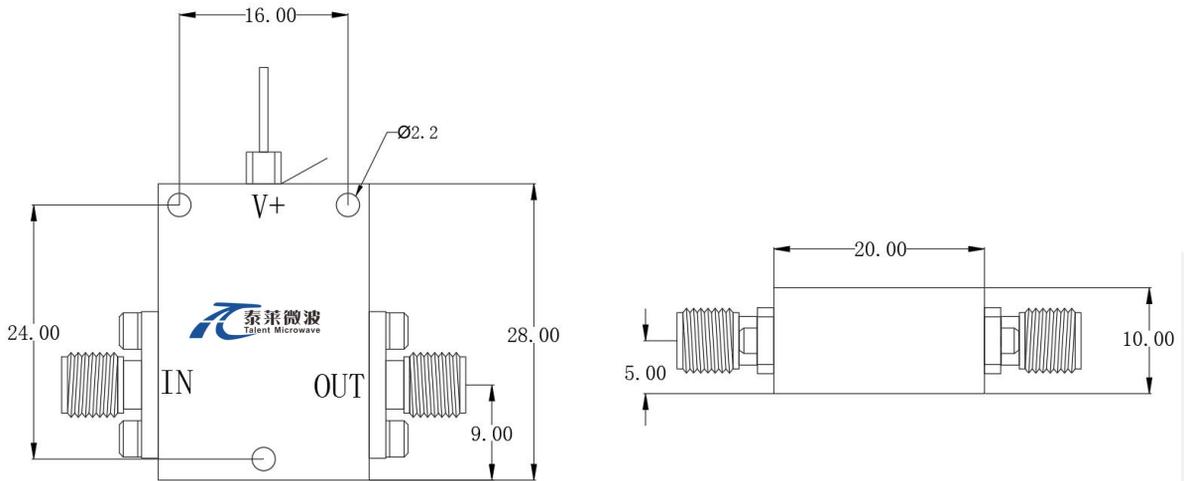
## 机械特性 Mechanical Specifications:

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	Solder Pin	
尺寸 Size	20*28*10	mm

### 绝对最大值 Absolute Maximum Ratings:

参数 Parameter	指标 Value
供电偏置电压 Supply Bias Voltage	+9 V
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



**\*\*\*Heat Sink Required During Operation**



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	-45		+85	°C
存储温度 Non-operating Temperature	-55		+125	°C
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
TLLA4G20G-12-65	Low Noise Amplifier, 4-20GHz, Noise Figure:6.5dB, Gain:12dB,P1dB:21dBm,+8V DC,Without Heatsink	Rev.1.1
TLLA4G20G-12-65-HS	Low Noise Amplifier, 4-20GHz, Noise Figure:6.5dB, Gain:12dB,P1dB:21dBm,+8V DC,With Heatsink	Rev.1.1