

## Low Noise Amplifier

50KHz-20GHz/2.5dB NF/18dB Gain/15dBm P1dB

Model: TLLA50K20G-18-30

TLLA50K20G-18-30 is a low noise amplifier with a typical small signal gain of 18 dB and a nominal noise figure of 2.5 dB across the frequency range of 50 KHz to 20 GHz. The DC power requirement for the amplifier is +12 V DC/70 mA. The input and output port configuration offers coax adapter structure with SMA female.

### Features:

- Frequency range: 50KHz-20GHz
- Gain: 18dB Typ
- Noise Figure: 2.5dB 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    | 50KHz-20GHz |      |     |          |
| 小信号增益 Small Signal Gain |             | 18   |     | dB       |
| 增益平坦度 Gain Flatness     |             | ±2.0 |     | dB       |
| 噪声系数 Noise Figure       |             | 2.5  | 4.0 | dB       |
| 线性输出功率 Output P1dB      |             | 15   |     | dBm      |
| 输入驻波 Input VSWR         |             | 2.0  |     | :1       |
| 输出驻波 Output VSWR        |             | 2.0  | 2.2 | :1       |
| 直流电压 DC Voltage         | +10         | +12  | +15 | V DC     |
| 直流电流 DC Supply Current  |             | 70   |     | mA       |
| 阻抗 Impedance            | 50          |      |     | Ohms     |

## 机械特性 Mechanical Specifications:

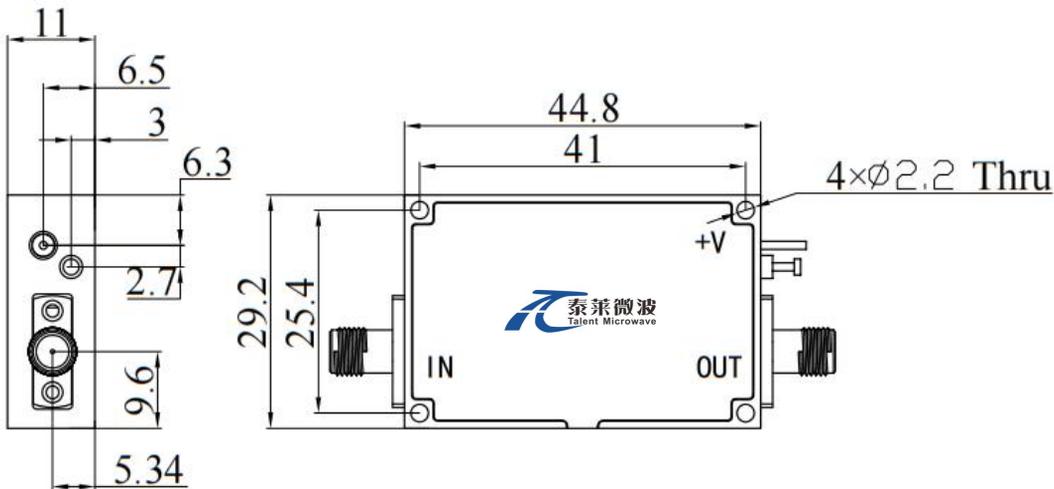
| 参数 Parameter                    | 指标 Value     | 单位 Units |
|---------------------------------|--------------|----------|
| 输入/输出接口 Input /Output Connector | SMA Female   |          |
| 直流偏置 DC Bias                    | Solder Pin   |          |
| 尺寸 Size                         | 44.8*29.2*11 | mm       |
| 重量 Weight                       | 55           | g        |

### 绝对最大值 Absolute Maximum Ratings:

| 参数 Parameter                 | 指标 Value             |
|------------------------------|----------------------|
| 供电偏置电压 Supply Bias Voltage   | +15 V                |
| 输入功率 RF Input Power          | +15 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                        | 50,000  |     |      | 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:

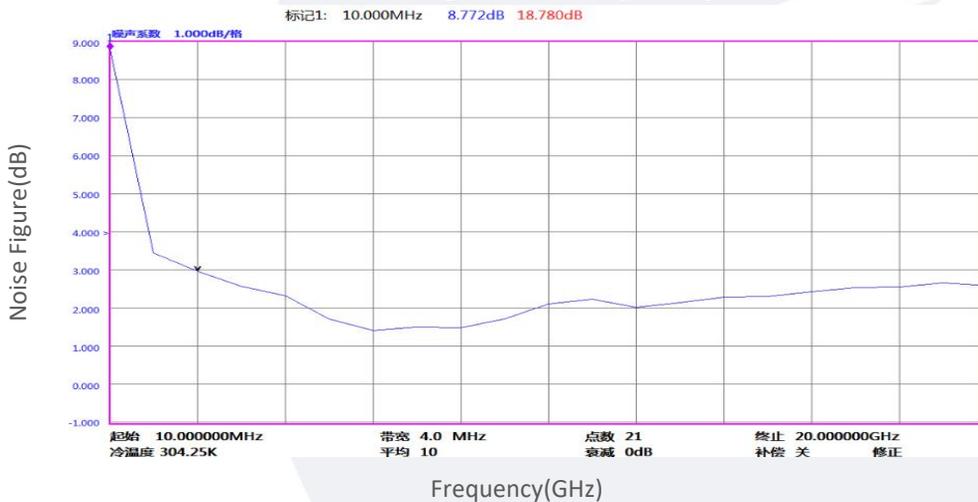
| 标准型号 Base Number    | 描述 Description   | 版本号 Revision |
|---------------------|--|--------------|
| TLLA50K20G-18-30    | Low Noise Amplifier, 50KHz-20GHz, Noise Figure:2.5dB, Gain:18 dB,P1dB:15dBm,+12V DC,Without Heatsink | Rev.1.1      |
| TLLA50K20G-18-30-HS | Low Noise Amplifier, 50KHz-20GHz, Noise Figure:2.5dB, Gain:18 dB,P1dB:15dBm,+12V DC,With Heatsink    | Rev.1.1      |

## 典型曲线 Typical Performance Data:

### Gain&VSWR vs Frequency



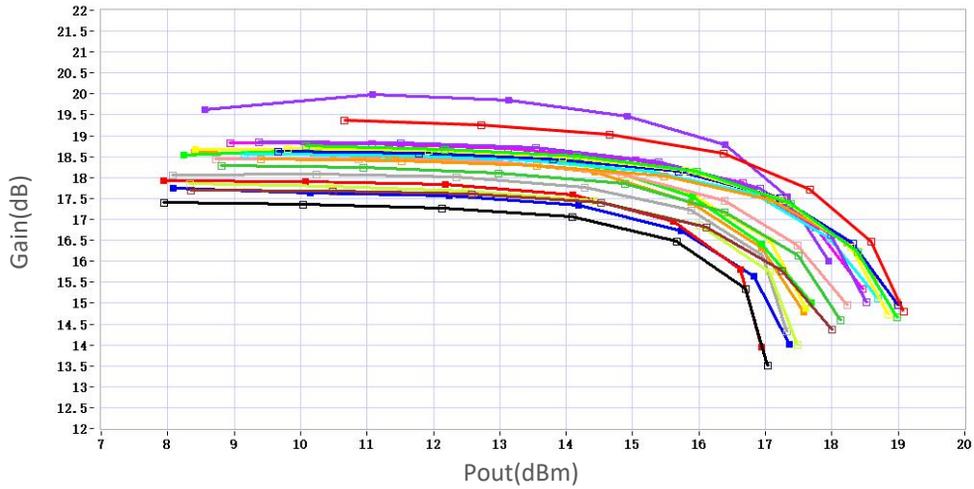
### Noise Figure vs Frequency



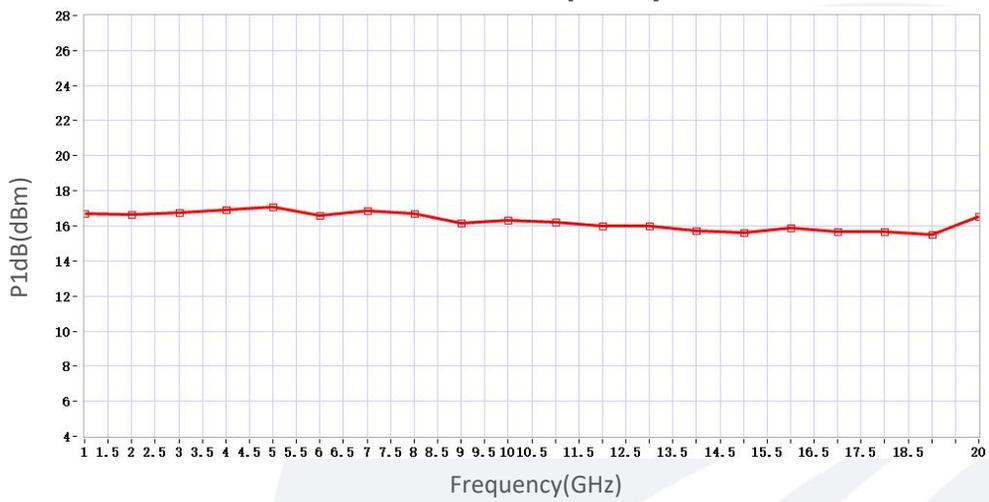
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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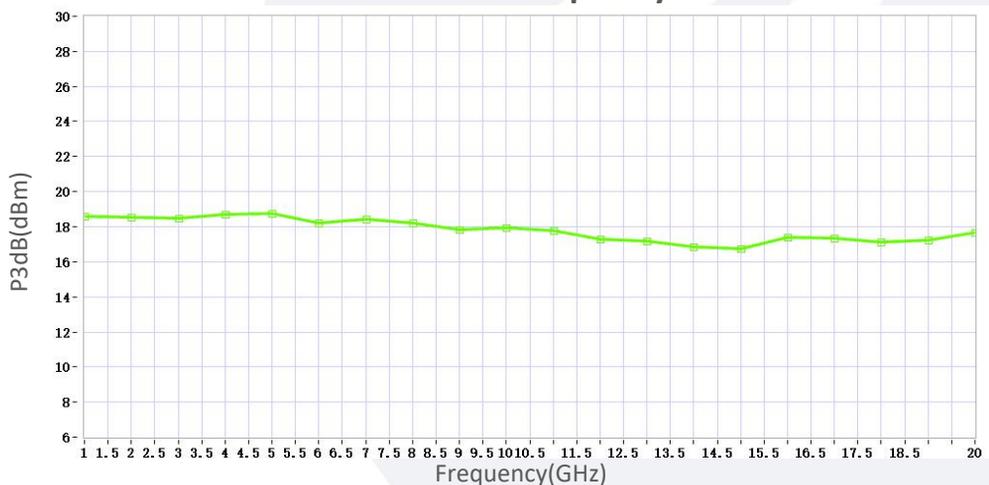
**Gain vs Output Power**



**P1dB vs Frequency**



**P3dB vs Frequency**



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