

## Low Noise Amplifier

0.01-3GHz/2.0dB NF/44dB Gain/20dBm P1dB

Model: TLLA10M3G-44-20

TLLA10M3G-44-20 is a low noise amplifier with a typical small signal gain of 44 dB and a nominal noise figure of 2.0 dB across the frequency range of 0.01 to 3 GHz. The DC power requirement for the amplifier is +12 V DC/80 mA. The input and output port configuration offers coax adapter structure with SMA female.

### Features:

- Frequency range: 0.01-3GHz
- Gain: 44dB Typ
- Noise Figure: 2.0dB 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    | 0.01 |      | 3   | GHz      |
| 小信号增益 Small Signal Gain | 42   | 44   |     | dB       |
| 增益平坦度 Gain Flatness     |      | ±2.0 |     | dB       |
| 噪声系数 Noise Figure       |      | 2.0  |     | dB       |
| 线性输出功率 Output P1dB      |      | 20   |     | 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         |      | +12  |     | V DC     |
| 直流电流 DC Supply Current  |      | 80   |     | mA       |
| 阻抗 Impedance            |      | 50   |     | Ohms     |

Note: Performance may degrade below 300 MHz. Please refer to below typical test plots

### 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                         | 44.8*29.2*11          | mm       |
| 重量 Weight                       | 55                    | g        |

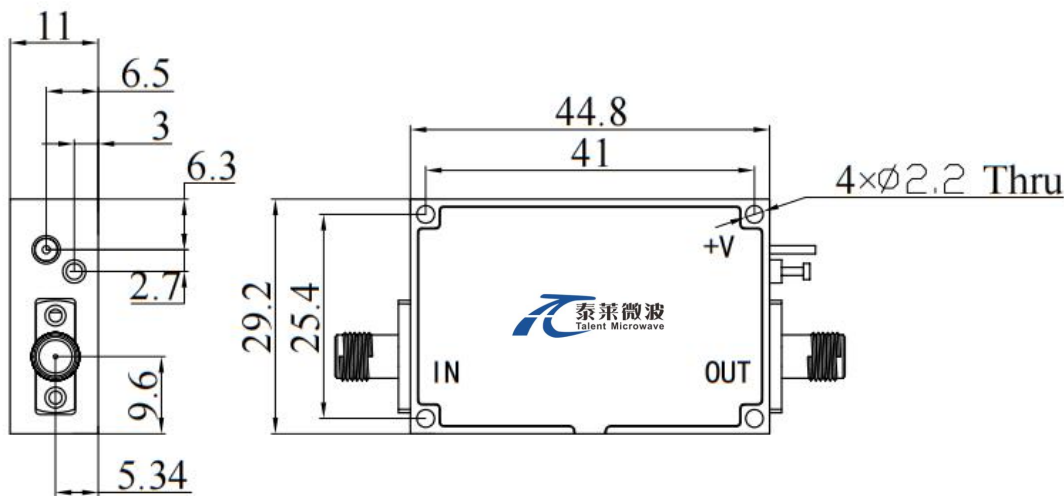
## 绝对最大值 Absolute Maximum Ratings:

| 参数 Parameter                 | 指标 Value             |
|------------------------------|----------------------|
| 供电偏置电压 Supply Bias Voltage   | +12 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; Tolerance:±0.1mm



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



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

## 温度环境 Environmental Conditions:

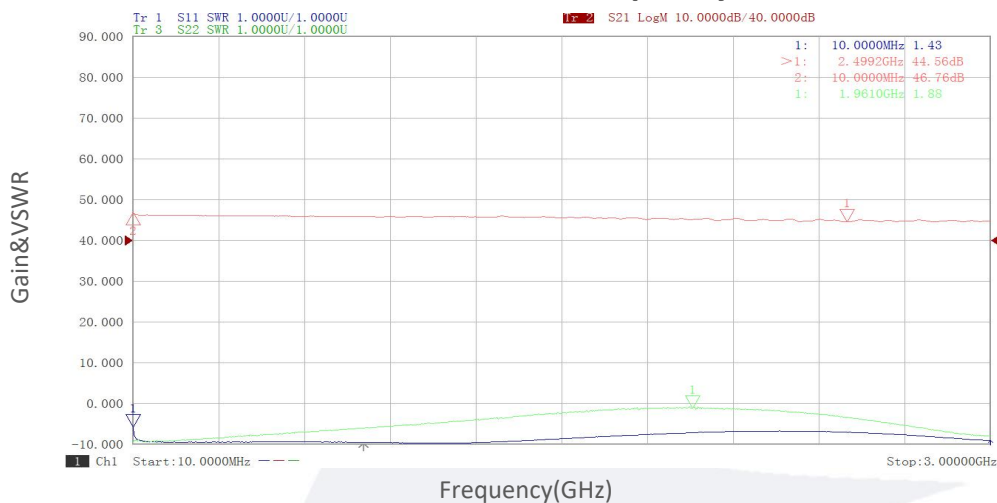
| 参数 Parameter                       | Min                                                 | Typ | Max  | 单位 Units |
|------------------------------------|-----------------------------------------------------|-----|------|----------|
| 操作温度 Operating Temperature         | -45                                                 |     | +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 |
|--------------------|----------------------------------------------------------------------------------------------------|--------------|
| TLLA10M3G-44-20    | Low Noise Amplifier, 0.01-3GHz, Noise Figure:2.0dB, Gain:44 dB,P1dB:20dBm,+12V DC,Without Heatsink | Rev.1.1      |
| TLLA10M3G-44-20-HS | Low Noise Amplifier, 0.01-3GHz, Noise Figure:2.0dB, Gain:44 dB,P1dB:20dBm,+12V DC,With Heatsink    | Rev.1.1      |

## 典型曲线 Typical Performance Data:

### Gain&VSWR vs Frequency



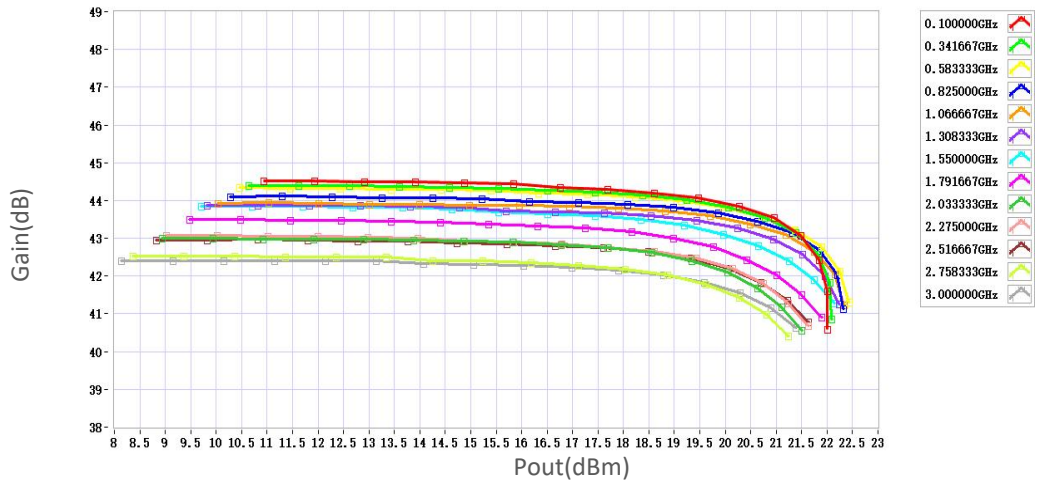
### Noise Figure vs Frequency



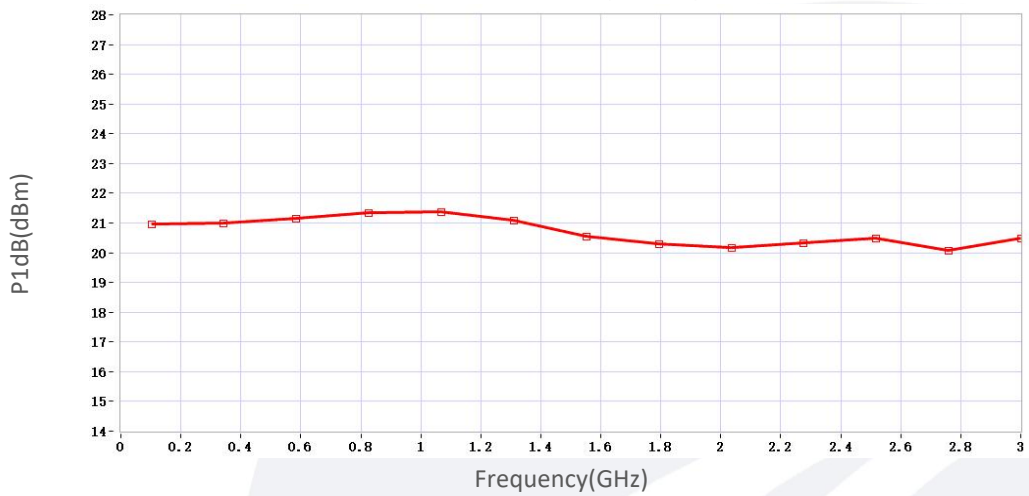
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

## 典型曲线 Typical Performance Data:

### Gain vs Output Power



### P1dB 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.