

## X-band Bidirectional Amplifier

8-12.5GHz/40dB Gain/26 dBm P1dB(TX)

Model: TLBPA8G12.5G-40-35-28

TLBPA8G12.5G-40-35-28 is a X-band bidirectional amplifier with typical small signal gain of 40 dB and noise figure of 3.5dB across the frequency range of 8 to 12.5 GHz. The DC power requirement for the amplifier is +28 V DC/0.8A. The input and output port configuration offers coax adapter structure with SMA female.

### Features:

- Gain: 40dB Typ.
- Noise Figure(RX): 3.5dB Max.
- 50 Ohm Matched Input / Output
- Bidirectional amplification (shared channel for Tx/Rx)
- Protection: over voltage protection

### Applications:

- Communication systems
- Test and Measurement

### 电气特性 Electrical Characteristics:

| 参数 Parameter                | Min                                  | Typ | Max  | 单位 Units |
|-----------------------------|--------------------------------------|-----|------|----------|
| 频率范围 Frequency range        | 8                                    |     | 12.5 | GHz      |
| 增益 Gain (RX)                |                                      | 40  |      | dB       |
| 噪声系数 Noise Figure (RX)      |                                      |     | 3.5  | dB       |
| 输出1dB压缩点 Output P-1 dB (RX) | 15                                   |     |      | dBm      |
| 增益 Gain (TX)                |                                      | 40  |      | dB       |
| 输出1dB压缩点 Output P-1 dB (TX) | 26                                   |     |      | dBm      |
| 饱和输出功率 Output Psat (TX)     | 28                                   |     |      | dBm      |
| 输入/输出驻波 Input/Output VSWR   |                                      | 2.0 |      | :1       |
| 直流电压 DC Voltage             |                                      | +28 |      | V DC     |
| 直流电流 DC Supply Current      |                                      |     | 0.8  | A        |
| 阻抗 Impedance                |                                      | 50  |      | Ohms     |
| 控制方式 Control Mode           | Pulsed Control (High: 3.3V; Low: 0V) |     |      |          |

## 机械特性 Mechanical Specifications:

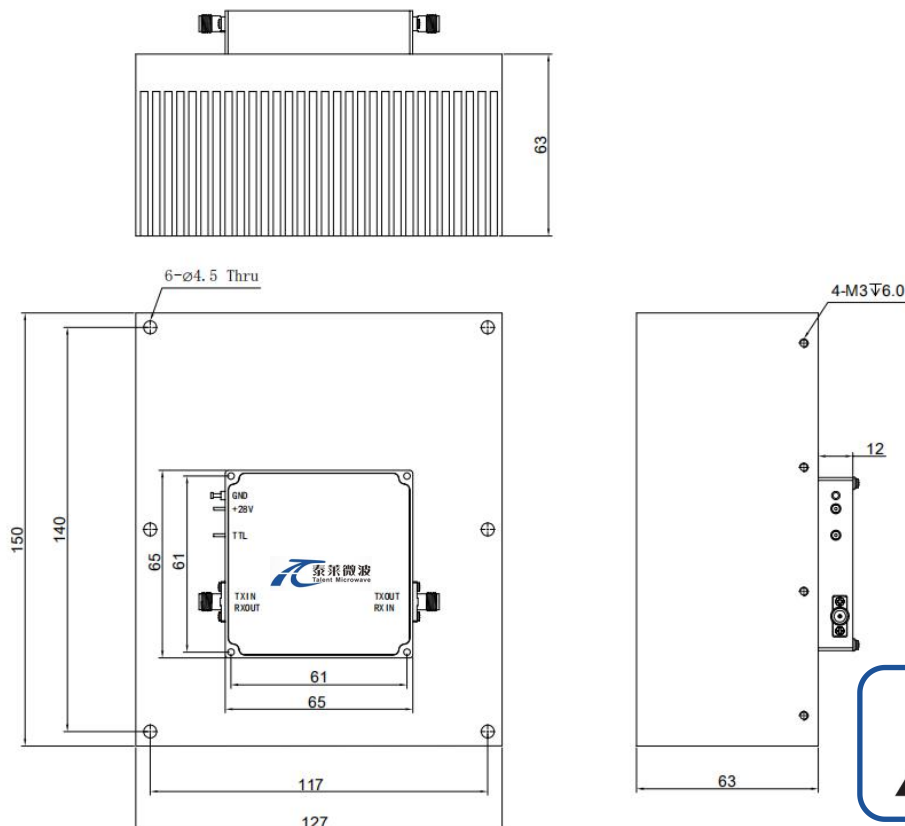
| 参数 Parameter                    | 指标 Value  | 单位 Units |
|---------------------------------|---|----------|
| 输入/输出接口 Input /Output Connector | SMA Female/SMA Female                                   |          |
| 直流偏置 DC Bias                    | Solder Pin  |          |
| 尺寸 Size                         | 65*65*12(Without heatsink)<br>127*150*75(With heatsink) | mm       |

## 绝对最大值 Absolute Maximum Ratings:

| 参数 Parameter                 | 指标 Value             |
|------------------------------|----------------------|
| 供电偏置电压 Supply Bias Voltage   | +32V                 |
| 输入功率 RF Input Power          | +15dBm               |
| ESD灵敏度 ESD sensitivity (HBm) | Class 0, passed 150V |

## 外形图 Outline Drawing:

Unit:mm



## 真值表 Truth Table

| 功能 Function | TTL |
|-------------|-----|
| RX          | 0   |
| TX          | 1   |



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  |     |      |          |

## 主要功能 Key Features:

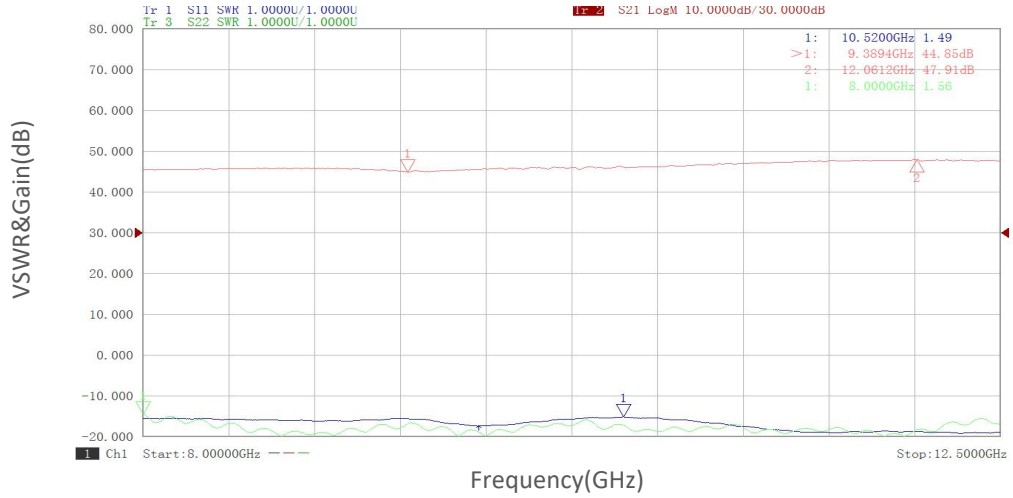
| 参数 Parameter               | 特点 Advantages |
|----------------------------|---------------|
| 内置保护功能 Protection function | Over voltage  |

## 订货信息 Ordering Information:

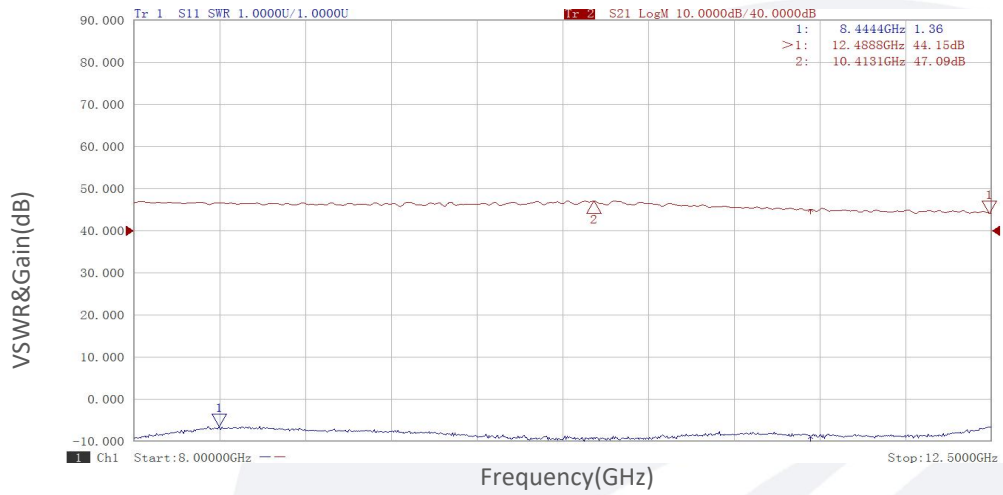
| 标准型号 Base Number      | 描述 Description  | 版本号 Revision |
|-----------------------|---|--------------|
| TLBPA8G12.5G-40-35-28 | X-band Bidirectional Amplifier, 8-12.5GHz,<br>Gain: 40dB, Output P-1 dB (RX): 15dBm,<br>Output P-1 dB (TX): 26dBm,+28V DC | Rev.1.1      |

## 典型曲线 Typical Performance Data:

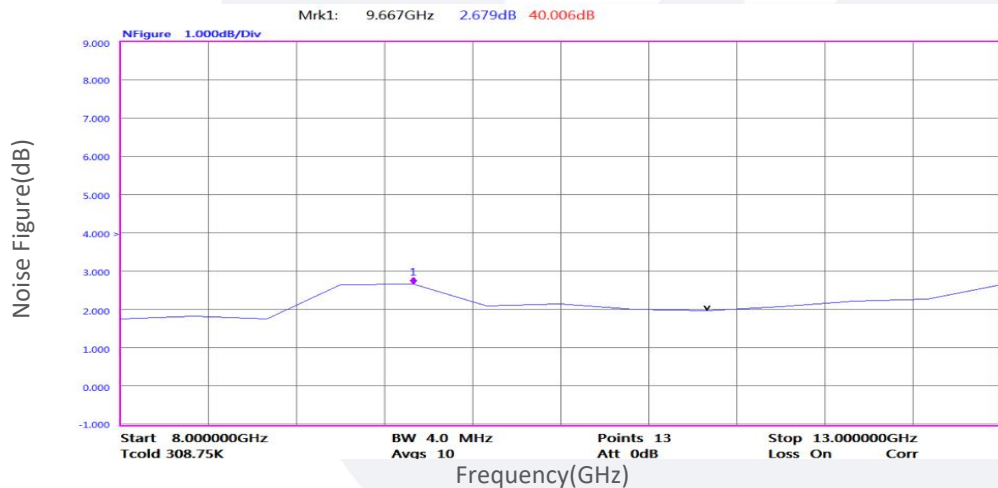
### RX VSWR&Gain vs Frequency



### TX VSWR&Gain 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.