

## Power Amplifier

80-1000MHz/50dB Gain/50dBm Psat

Model: TLPA80M1000M-50-50

TLPA80M1000M-50-50 is a power amplifier with a minimum small signal gain of 50 dB and a minimum Psat of 50 dBm across the frequency range of 80 to 1000 MHz. The DC power requirement for the amplifier is +28 VDC/15 A. The input and output port configuration offers coax adapter structure with SMA female.

### Features:

- Frequency range: 80-1000MHz
- Gain: 50dB Min
- Output Power : 50dBm Min
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

### Applications:

- Cellular
- PCN
- GSM
- ISM
- Lab Test

## 电气特性 Electrical Characteristics:

| 参数 Parameter            | Min     | Typ  | Max | 单位 Units |
|-------------------------|---------|------|-----|----------|
| 频率范围 Frequency range    | 80-1000 |      |     | MHz      |
| 小信号增益 Small Signal Gain | 50      | 52   |     | dB       |
| 增益平坦度 Gain Flatness     |         | ±2   | ±3  | dB       |
| 线性输出功率 Output P1dB      | 47      | 47.5 |     | dBm      |
| 饱和输出功率 Output Psat      | 50      | 50.5 |     | dBm      |
| 谐波 Harmonics            |         | -15  | -8  | dBc      |
| 输入驻波 Input VSWR         |         | 1.5  | 2.0 | :1       |
| 直流电压 DC Voltage         |         | 28   | 30  | V DC     |
| 静态电流 Static Current     |         | 2    |     | A        |
| 饱和电流 Saturation current |         | 13   | 15  | A        |
| 阻抗 Impedance            | 50      |      |     | Ohms     |

## 机械特性 Mechanical Specifications:

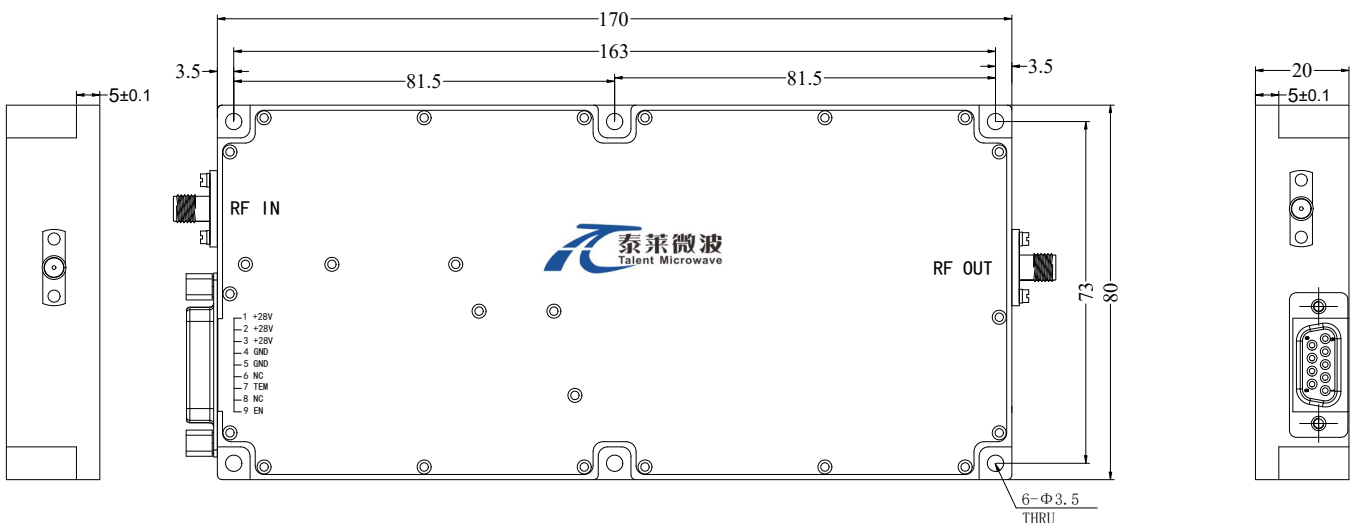
| 参数 Parameter                    | 指标 Value              | 单位 Units |
|---------------------------------|-----------------------|----------|
| 输入/输出接口 Input /Output Connector | SMA Female/SMA Female |          |
| 直流偏置 DC Bias                    | D-SUB-9               |          |
| 尺寸 Size                         | 170*80*20             | mm       |
| 重量 Weight                       | 500                   | g        |

## 绝对最大值 Absolute Maximum Ratings:

| 参数 Parameter                 | 指标 Value             |
|------------------------------|----------------------|
| 供电偏置电压 Supply Bias Voltage   | +30 V                |
| 输入功率 RF Input Power          | 5dBm                 |
| ESD灵敏度 ESD sensitivity (HBm) | Class 0, passed 150V |

## 外形图 Outline Drawing:

Unit:mm



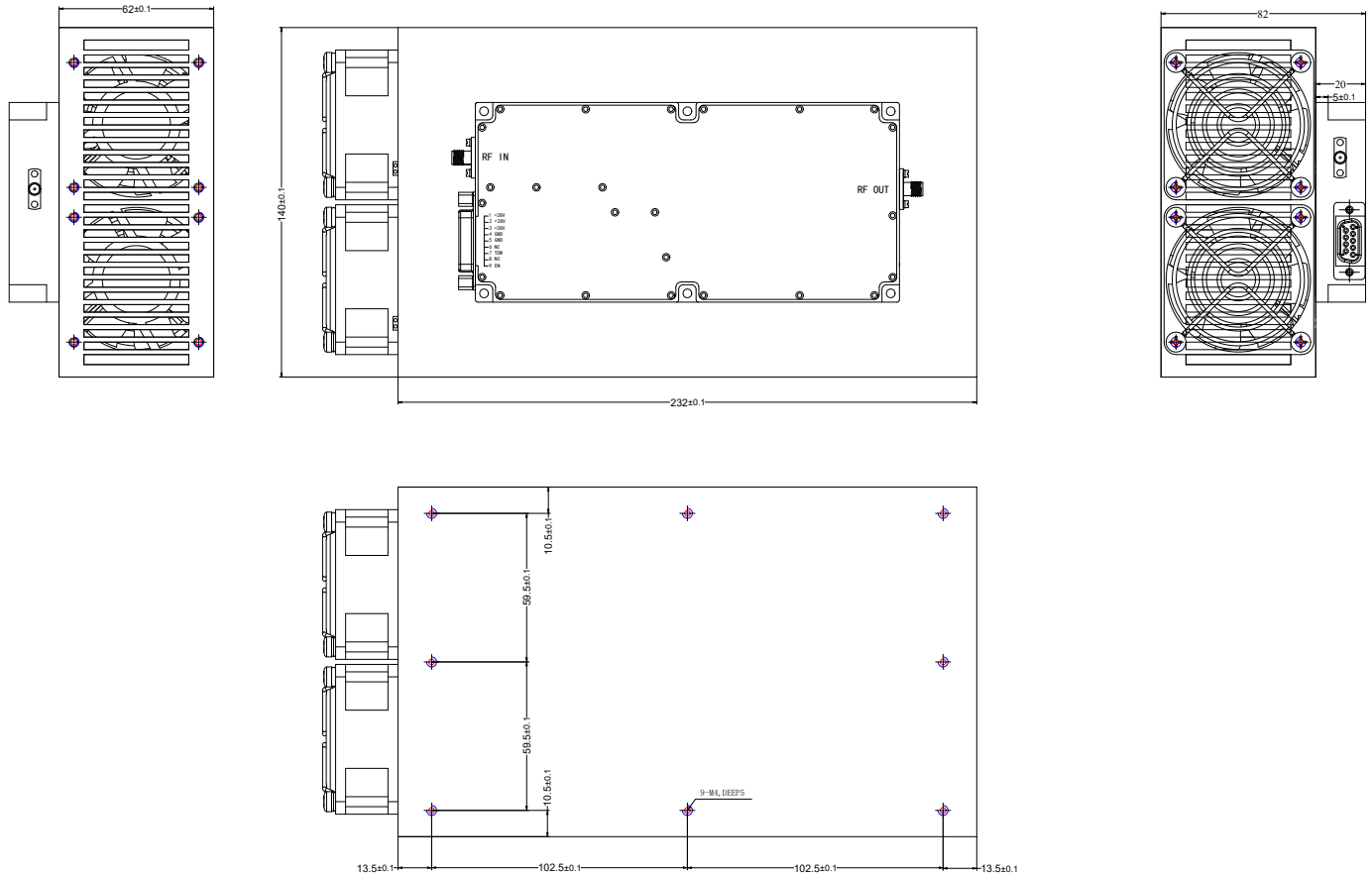
**\*\*\*Heat Sink Required During Operation**



OBSERVE PRECAUTIONS  
ELECTROSTATIC SENSITIVE  
DEVICES

## 外形图 Outline Drawing:

Unit:mm



### 风扇供电 Fan power supply

|            |                                                          |
|------------|----------------------------------------------------------|
| Red line   | Power supply positive, +24.0-28.0VDC<br>DC current: 0.3A |
| Black line | Ground                                                   |

## 直流供电接口 DC Supply Connector (D-SUB9 Female):

| 引脚 Pin | 名称 Name | 功能 Function                                                                                                                                                                                                                                          |
|--------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1~3    | +36V    | Power supply positive,+34.0-36.0VDC                                                                                                                                                                                                                  |
| 4~5    | GND     | Ground                                                                                                                                                                                                                                               |
| 6、 8   | NC      | Not connected                                                                                                                                                                                                                                        |
| 7      | TEM     | When the temperature of the case exceeds 85 °C, the power amplifier will turn off and this pin will be pulled high. If the temperature of case drops to 80 °C, the power amplifier will return to normal operation, and this pin will be pulled low. |
| 9      | EN      | Amplifier Enable: TTL High (5V) (Internally Pulled-High)<br>Amplifier Disable: Short to ground                                                                                                                                                       |

## 使用说明 Instruction Manual:

| Power on |                                                                                       |
|----------|---------------------------------------------------------------------------------------|
| 1        | Connect ground and RF input connector                                                 |
| 2        | Connect the RF output port to the load (The VSWR of the load should be less than 3:1) |
| 3        | Connect the 24V power supply to the fan                                               |
| 4        | Connect the 28V power supply to the amplifier                                         |
| 5        | Turn on the RF signal and ensure that the input signal does not exceed 5dBm           |

| Power off |                                                  |
|-----------|--------------------------------------------------|
| 1         | Turn off RF signal                               |
| 2         | Disconnect the 28V power supply to the amplifier |
| 3         | Disconnect the 24V power supply to the fan       |
| 4         | Disconnect the RF connectors                     |

## 温度环境 Environmental Conditions:

| 参数 Parameter                       | Min                                                 | Typ | Max  | 单位 Units |
|------------------------------------|-----------------------------------------------------|-----|------|----------|
| 操作温度 Operating Temperature*        | -45                                                 |     | +75  | °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  |     |      |          |

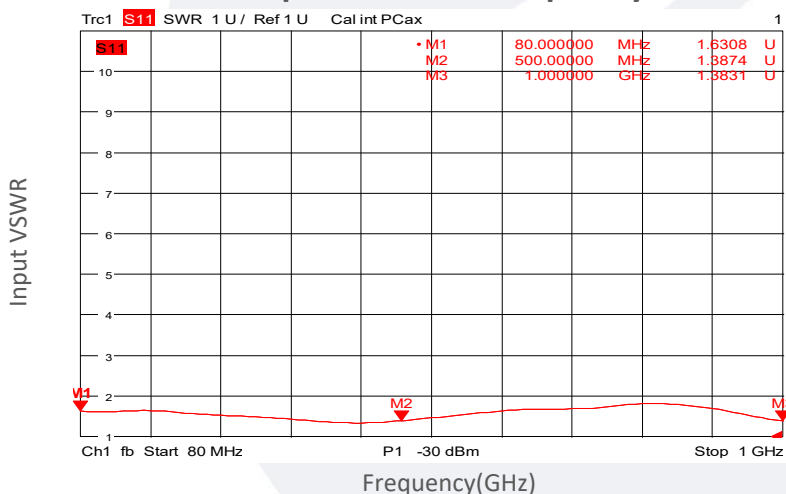
\*Note: For a wider temperature range, please consult the manufacturer.

## 订货信息 Ordering Information:

| 标准型号 Base Number      | 描述 Description                                                               | 版本号 Revision |
|-----------------------|------------------------------------------------------------------------------|--------------|
| TLPA80M1000M-50-50    | Power amplifier 80-1000MHz,<br>Gain:50dB,Psat:50dBm,+28V DC,Without Heatsink | Rev.1.1      |
| TLPA80M1000M-50-50-HS | Power amplifier 80-1000MHz,<br>Gain:50dB,Psat:50dBm,+28V DC,With Heatsink    | Rev.1.1      |

## 典型曲线 Typical Performance Data:

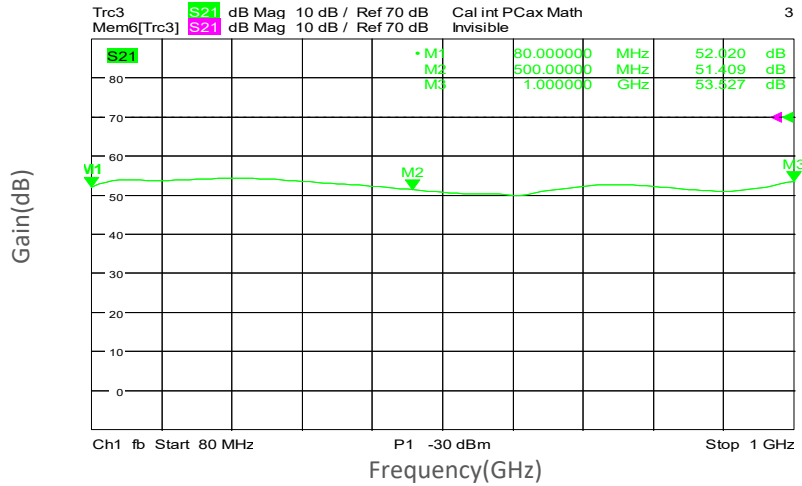
Input VSWR vs Frequency



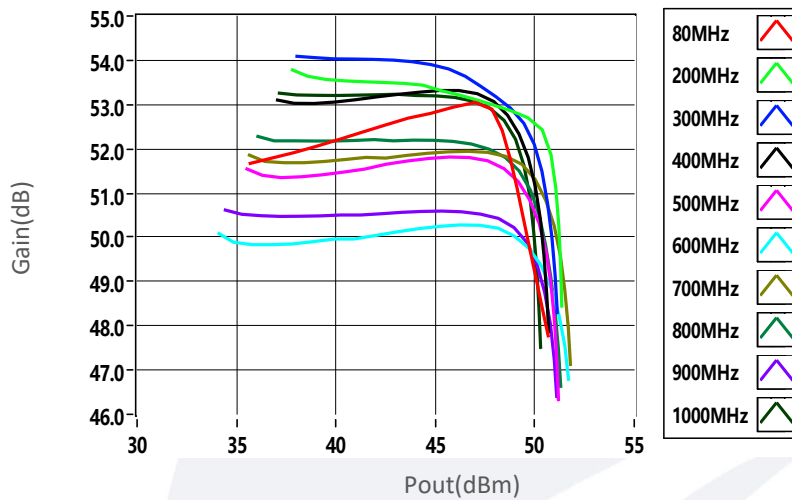
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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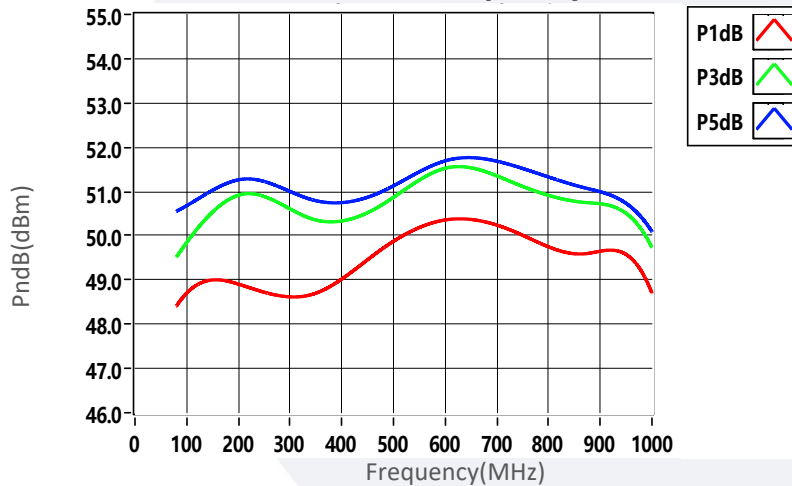
### Small Signal Gain vs Frequency



### Gain vs Output Power



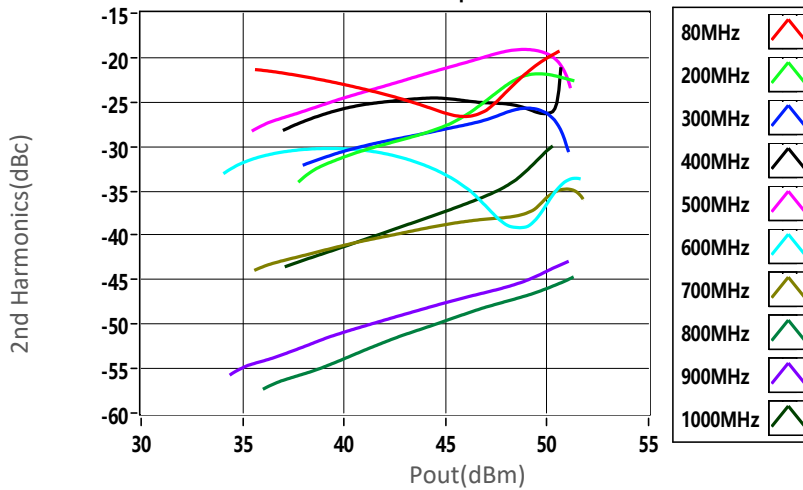
### PndB vs Frequency



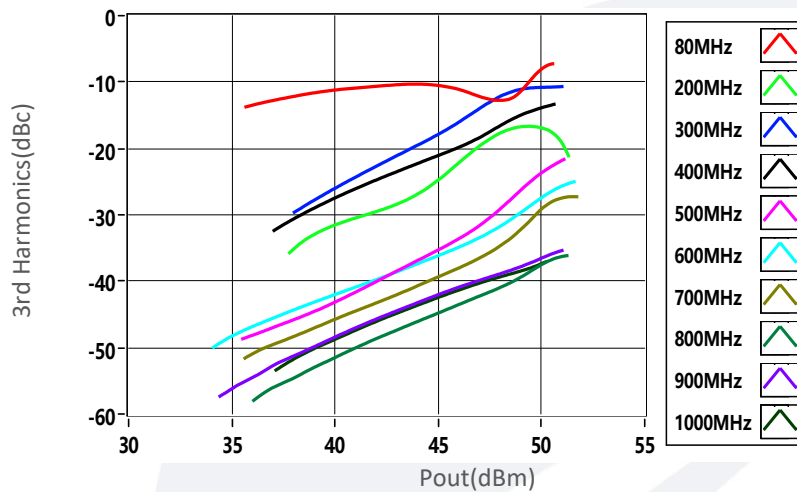
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## 典型曲线 Typical Performance Data:

### 2nd Harmonics vs Output Power



### 3rd Harmonics vs Output Power



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