Suzhou Talent Microwave,Inc
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# Power Amplifier

## 20MHz-1GHz /43dB Gain/43dBm Psat

## Model: TLPA20M1G-43-43

TLPA20M1G-43-43 is a power amplifier with power gain of 43 dB and a nominal Psat of 43 dBm across the frequency range of 20MHz to 1 GHz. The DC power requirement for the amplifier is +28 VDC/1 A. The input and output port configuration offers coax adapter structure with SMA female.

## Features:

- Frequency range: 20MHz-1GHz
- Gain: 43dB Min
- Output Power Psat: 43dBm Min
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

## Applications:

- Cellular
- PCN
- GSM
- ISM
- Lab Test

## Electrical Characteristics:

| Parameter | Min | Typ | Max | Units |
|---|---|---|---|---|
| Frequency range | 20MHz | | 1GHz | |
| Power Gain | 43 | 45 | | dB |
| Gain Flatness | | ±2 | ±3 | dB |
| Output P1dB | | 41 | | dBm |
| Output Psat | 43 | 44 | | dBm |
| Harmonic | | -10 | | dBc |
| Input VSWR | | 1.5 | 2 | :1 |
| DC Voltage | | 28 | 30 | V DC |
| DC Supply Current | | 1 | 5 | A |
| Impedance | | 50 | | Ohms |

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## Mechanical Specifications:

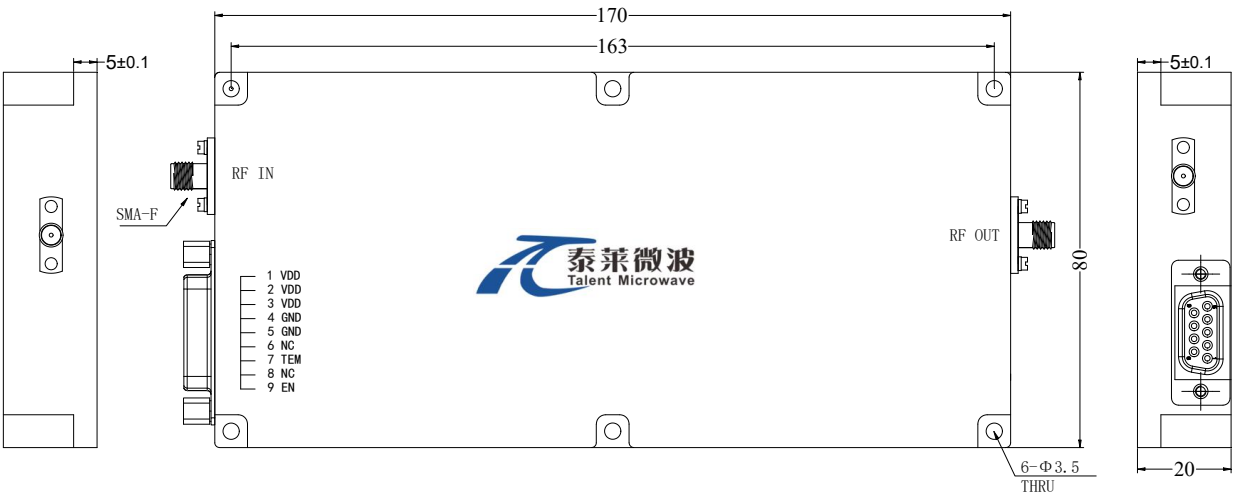
| Parameter | 指标 Value | 单位 Units |
|---|---|---|
| Input /Output Connector | SMA Female/SMA Female | |
| DC Power Supply Connector | DSUB-9 | |
| Size | 170*80*20(Without Heatsink)<br>264*140*82(With Heatsink) | mm |
| Weight | 3.7 | Kg |

## Absolute Maximum Ratings:

| Parameter | Value |
|---|---|
| Supply Bias Voltage | +30 V |
| RF Input Power | +5 dBm |
| ESD sensitivity (HBm) | Class 0, passed 150V |

## Outline Drawing:

Unit:mm; Tolerance:±0.1mm




***Heat Sink Required During Operation

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

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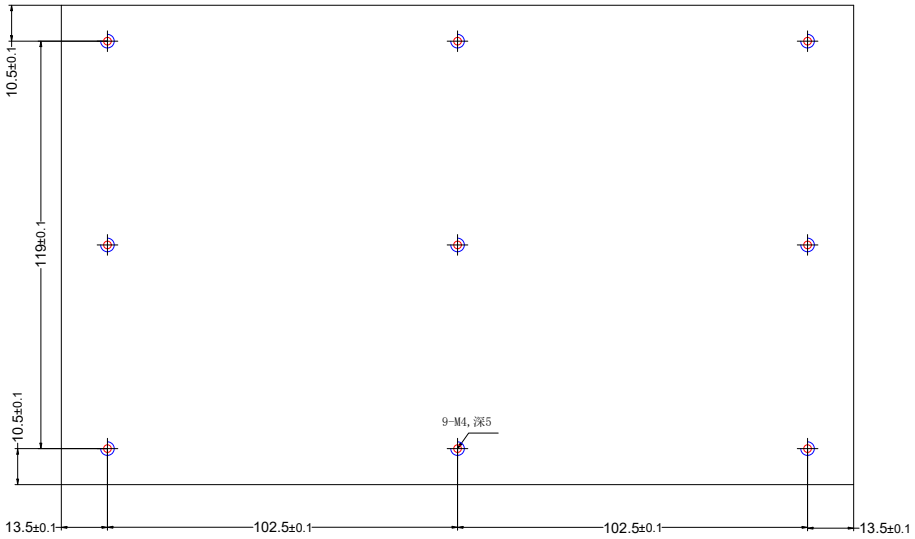


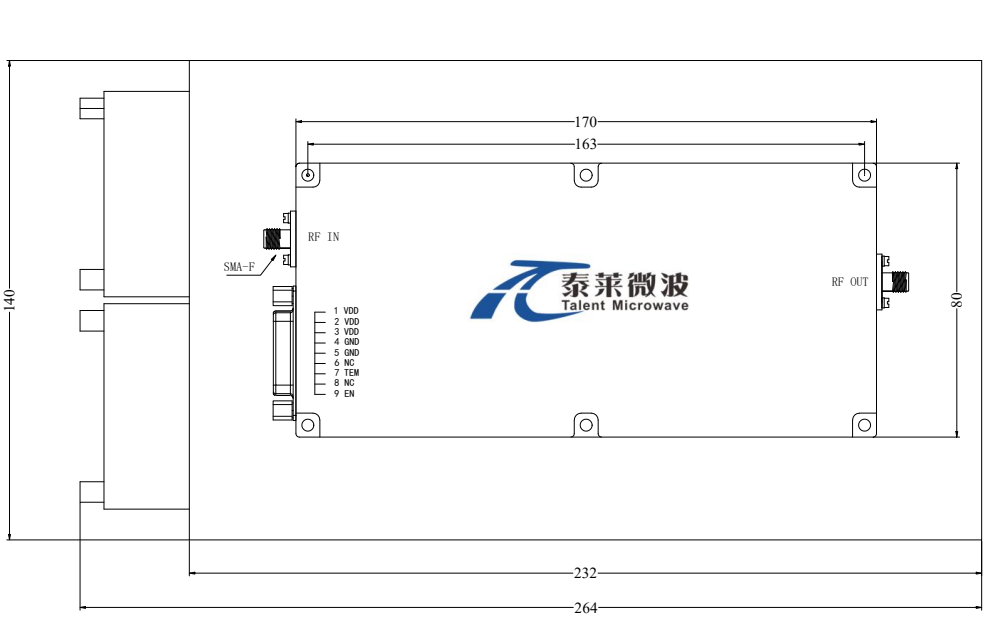


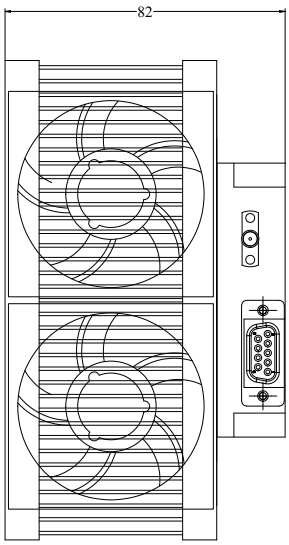


**Fans Supply Current: 0.4A@24V**

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## DC Supply Connector(DSUB-9 Female):

| Pin | Name | Function |
|---|---|---|
| 1 | +28V | Power supply positive,+26.0-30.0VDC |
| 2 | +28V | Power supply positive,+26.0-30.0VDC |
| 3 | +28V | Power supply positive,+26.0-30.0VDC |
| 4 | GND | Ground |
| 5 | GND | Ground |
| 6 | NC | Not connected |
| 7 | Over TEM | When the temperature of the case exceeds 85 ℃, the power amplifier will turn off and this pin will be pulled high. If the temperature of case drops to 70 ℃, the power amplifier will return to normal operation, and this pin will be pulled low. |
| 8 | NC | Not connected |
| 9 | EN | Amplifier Enable: TTL High (5V) (Internally Pulled-High)<br>Amplifier Disable: Short to ground |

## Environmental Conditions:

| Parameter | Min | Typ | Max | Units |
|---|---|---|---|---|
| Operating Temperature* | -40 | | +50 | ℃ |
| Non-operating Temperature* | -50 | | +60 | ℃ |
| Relative humidity | | 95 | | % |
| Altitude | 10,000 | | | feet |
| Shock / Vibration(MIL-STD-810F) | 25g rms (15 degree 2KHz) endurance, 1 hour per axis | | | |
| Shock(non operating) | 20G for 11msc half sin wave,3 axis both directions | | | |

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

## Ordering Information:

| Base Number | Description | Revision |
|---|---|---|
| TLPA20M1G-43-43 | Power amplifier 20MHz-1GHz,<br>Gain:43dB,Psat:43dBm,+28V DC,Without Heatsink | Rev.1.1 |
| TLPA20M1G-43-43-HS | Power amplifier 20MHz-1GHz,<br>Gain:43dB,Psat:43dBm,+28V DC,With Heatsink | Rev.1.1 |

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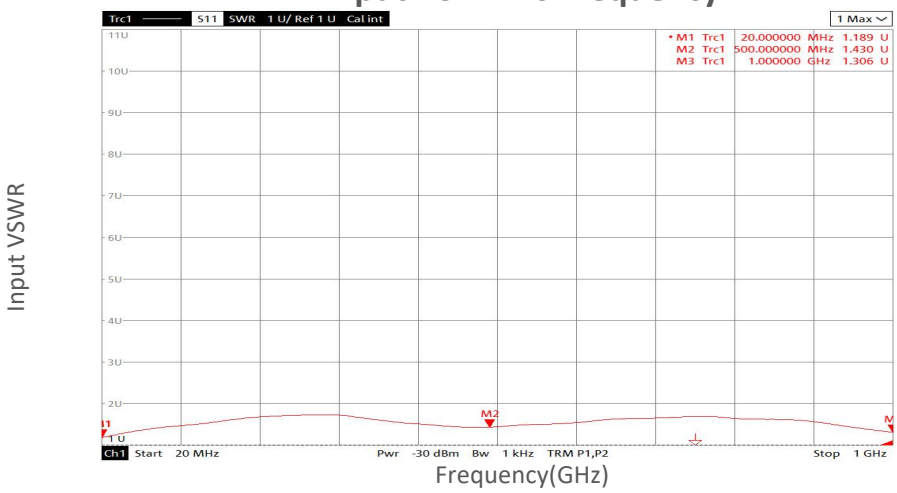
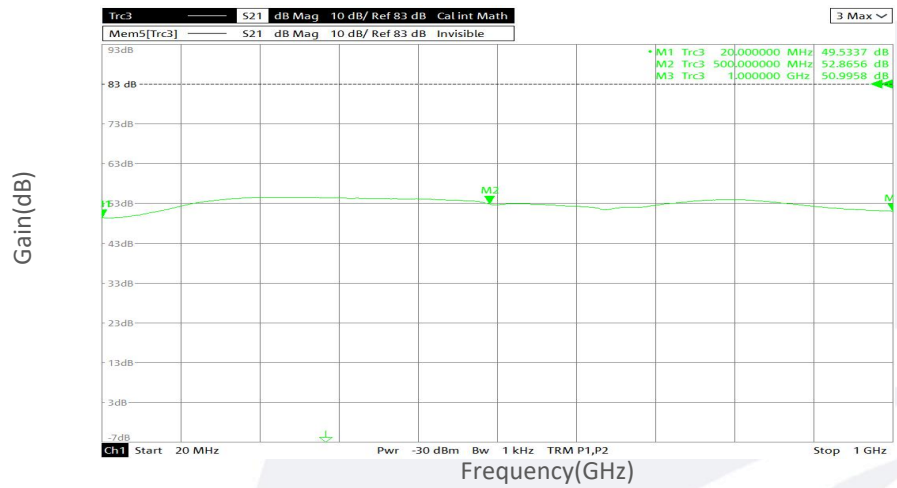
## Typical Performance Data:

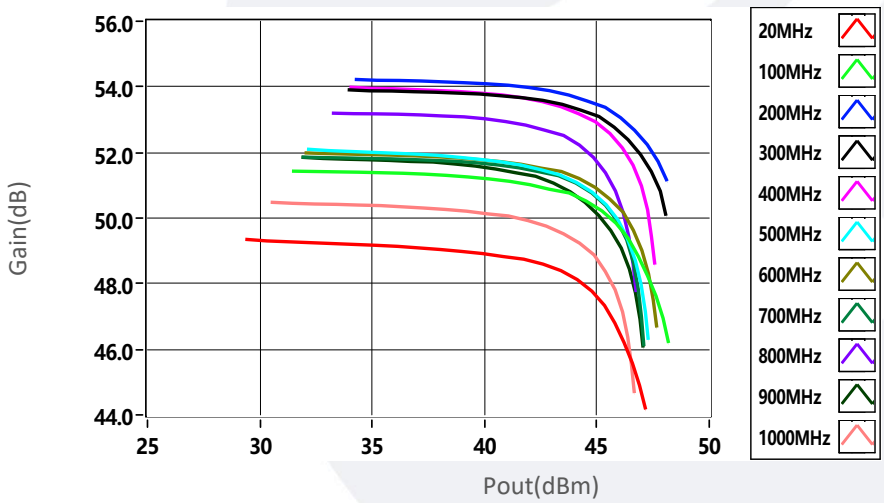
### Input VSWR vs Frequency




### Small Signal Gain vs Frequency




### Gain vs Output Power




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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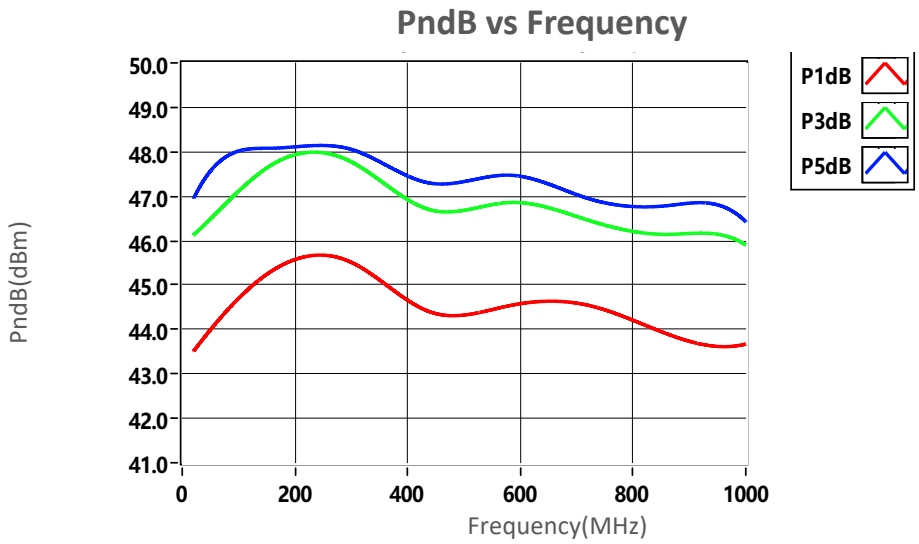


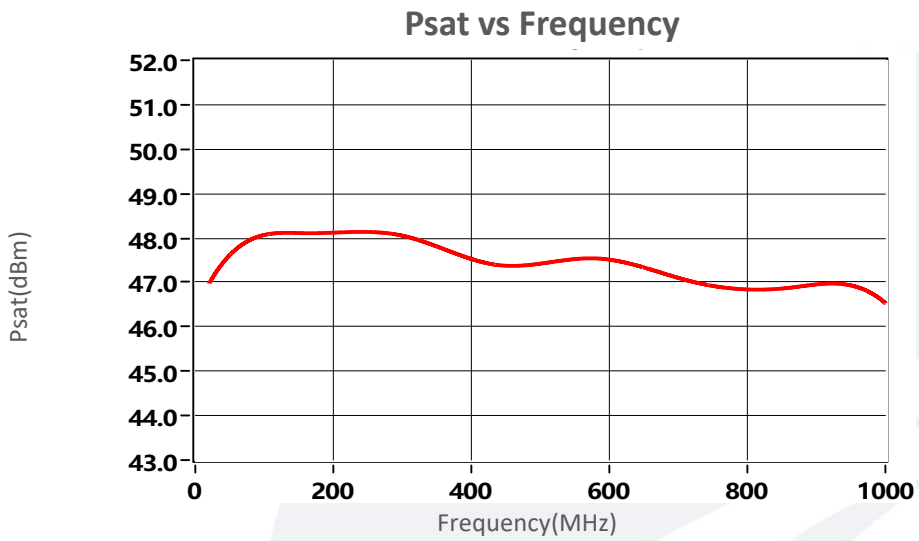


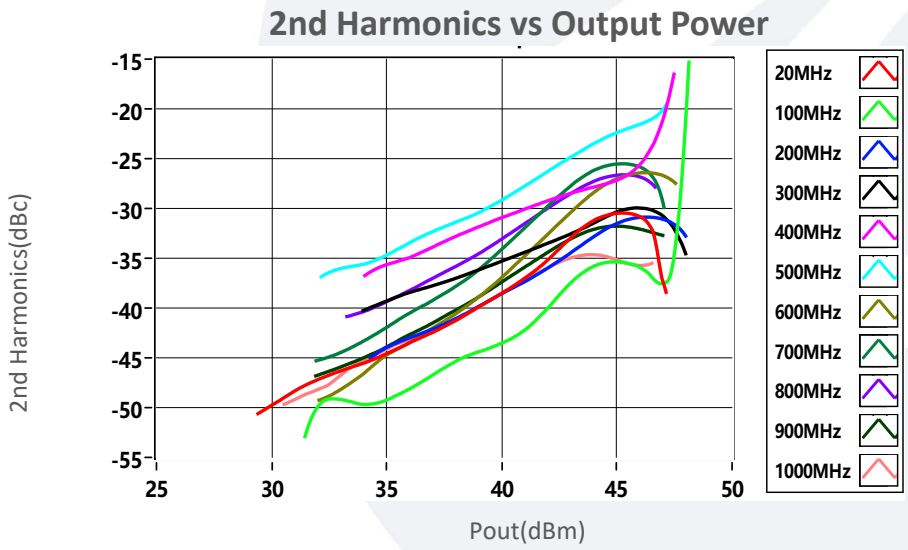


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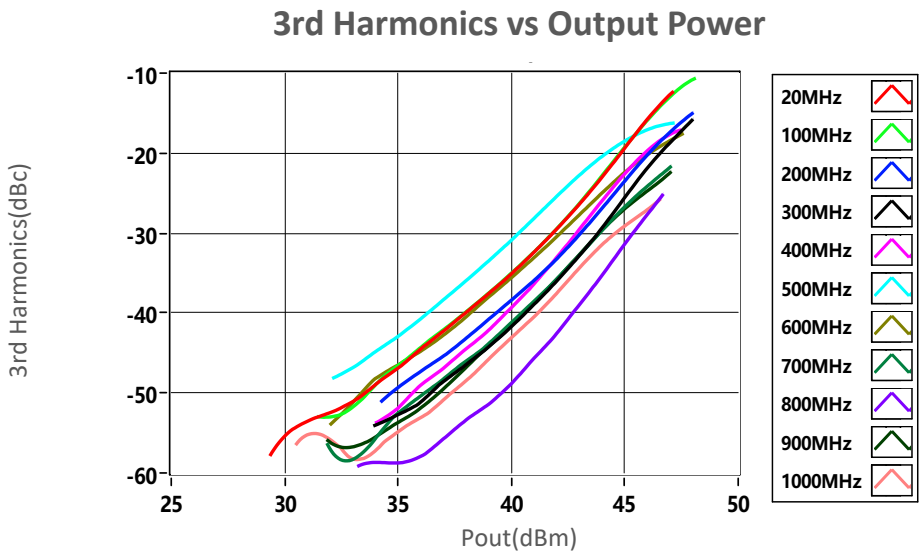


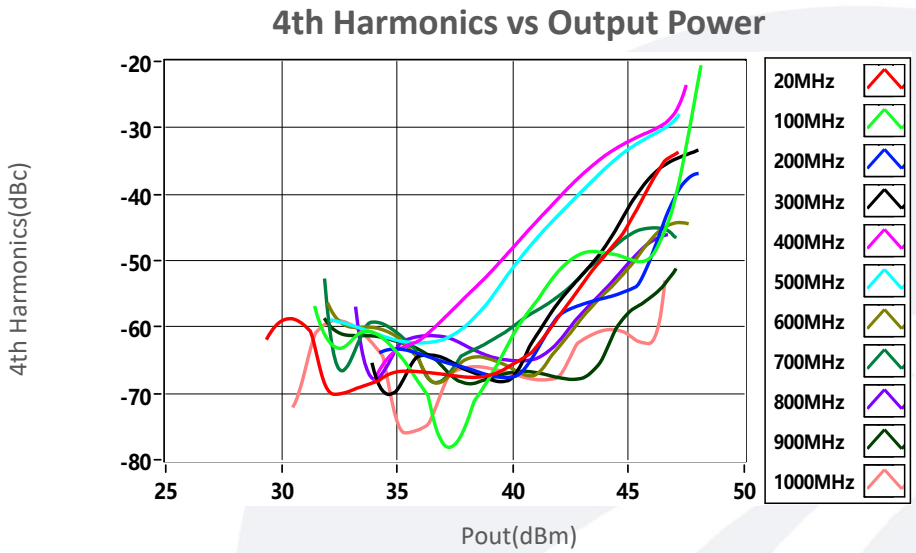


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