

## Power Amplifier

**13.5-14.5GHz/47dB Gain/47dBm Psat****Model: TLPA13.5G14.5G-47-47**

TLPA13.5G14.5G-47-47 is a power amplifier with a minimum small signal gain of 47 dB and a minimum Psat of 47 dBm across the frequency range of 13.5 to 14.5 GHz. The DC power requirement for the amplifier is +28 VDC. The input port configuration offers coax adapter structure with SMA female and output port configuration offers coax adapter structure with N female or WR75/WR62 waveguide.

### Features:

- Frequency range: 13.5-14.5GHz
- Gain: 47dB Min
- Output Power Psat: 47dBm Min
- Protection: Over voltage protection
- 50 Ohm Matched Input / Output

### Applications:

- Cellular
- PCN
- GSM
- ISM
- Lab Test

### Electrical Characteristics:

| Parameter            |            | Min  | Typ  | Max  | Units |
|----------------------|------------|------|------|------|-------|
| Frequency range      |            | 13.5 |      | 14.5 | GHz   |
| Gain flatness        | @40MHz     |      | ±0.5 |      | dB    |
|                      | @full band |      | ±2   |      |       |
| Power Gain           |            | 47   |      |      | dB    |
| Output Psat          |            | 47   |      |      | dBm   |
| Output IM3*          |            |      | -25  |      | dBc   |
| Spurious@Pout=45dBm  |            |      |      | -60  | dBc   |
| Harmonics@Pout=45dBm |            |      |      | -25  | dBc   |
| Input VSWR           |            |      |      | 1.5  | :1    |
| DC Voltage           |            |      | 28   | 29   | V DC  |
| Power Consumption    |            |      |      | 350  | W     |
| Impedance            |            | 50   |      |      | Ohms  |

\*Note: The two-tone interval is 5MHz, and the total power of two-tone synthesis is 44dBm.

## Mechanical Specifications:

| Parameter        | Value                    | Units                                              |
|------------------|--------------------------|----------------------------------------------------|
| Input Connector  | SMA Female               |                                                    |
| Output Connector | N Female or WR75 or WR62 |                                                    |
| DC Bias          | DSUB-7W2                 | A1: +28V<br>A2: GND<br>Pin1: Enable<br>Pin2~5: GND |
| Size             | 200*140*90               | mm                                                 |
| Weight           | 3                        | Kg                                                 |

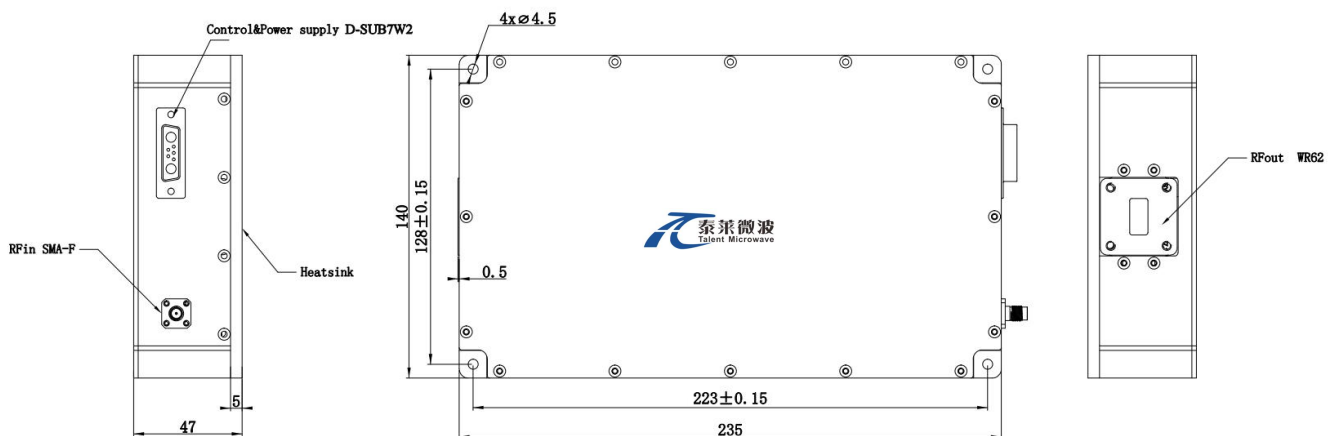
## Absolute Maximum Ratings:

| Parameter             | Value                |
|-----------------------|----------------------|
| Supply Bias Voltage   | +29 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.

## Key Features:

| Parameter            | Advantages                                 |
|----------------------|--------------------------------------------|
| Control functions    | Power setting On/Off                       |
| Protection functions | Over DC voltage protection                 |
| Cooling system       | Built in Cooling system,forced air cooling |

## Environmental Conditions:

| Parameter                       | Min                                                 | Typ | Max | Units |
|---------------------------------|-----------------------------------------------------|-----|-----|-------|
| Operating Temperature*          | -20                                                 |     | +50 | °C    |
| Non-operating Temperature*      | -30                                                 |     | +60 | °C    |
| 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 |
|-------------------------|-------------------------------------------------------------------------------|----------|
| TLPA13.5G14.5G-47-47    | Power amplifier 13.5-14.5GHz,<br>Gain:47dB,Psat:7dBm,+28V DC,Without Heatsink | Rev.1.0  |
| TLPA13.5G14.5G-47-47-HS | Power amplifier 13.5-14.5GHz,<br>Gain:47dB,Psat:7dBm,+28V DC,With Heatsink    | Rev.1.0  |