

## Low Noise Amplifier

5-20GHz /3.0dB NF/35dB Gain/14.5dBm P1dB

Model: TLLA5G20G-35-30

TLLA5G20G-35-30 is a low noise amplifier with a typical small signal gain of 37 dB and a nominal noise figure of 3.0 dB across the frequency range of 5 to 20 GHz. The DC power requirement for the amplifier is +12 V DC/150 mA. The input and output port configuration offers coax adapter structure with SMA female.

### Features:

- Ultra Wide Band:5-20 GHz
- Gain: 37dB Typ
- Noise Figure: 3.0dB Max
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

### Applications:

- Communication systems

### Electrical Characteristics:

| Parameter         | Min | Typ  | Max | Units |
|-------------------|-----|------|-----|-------|
| Frequency range   | 5   |      | 20  | GHz   |
| Gain              | 35  | 37   |     | dB    |
| Gain Flatness     |     | ±1.5 |     | dB    |
| Noise Figure      |     |      | 3   | dB    |
| Output P1dB       |     | 14.5 |     | dBm   |
| Input VSWR        |     |      | 2   | :1    |
| Output VSWR       |     |      | 2   | :1    |
| DC Voltage        | 10  | 12   | 18  | V DC  |
| DC Supply Current |     | 150  |     | mA    |
| Impedance         | 50  |      |     | Ohms  |

### Mechanical Specifications:

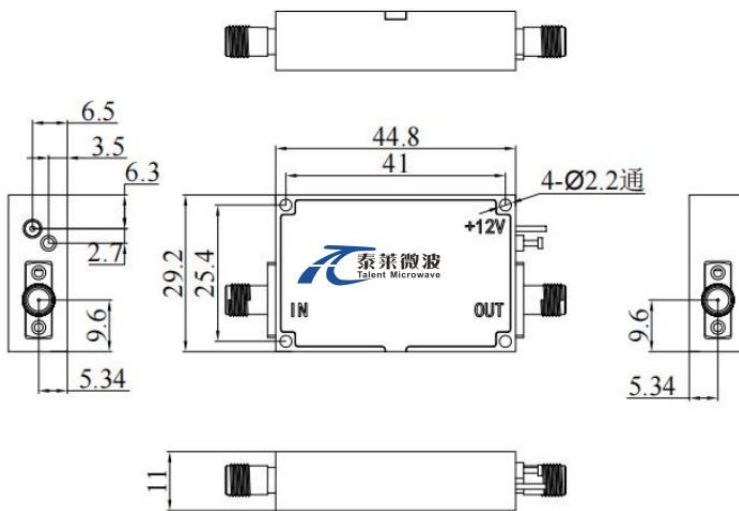
| Parameter               | Value                       | Units |
|-------------------------|-----------------------------|-------|
| Input /Output Connector | 2.92mm Female/2.92mm Female |       |
| DC Bias                 | Solder Pin                  |       |
| Size                    | 44.8*29.2*11                | mm    |
| Weight                  | 55                          | g     |

## Absolute Maximum Ratings:

| Parameter             | Value                |
|-----------------------|----------------------|
| Supply Bias Voltage   | +20 V                |
| RF Input Power        | +15 dBm              |
| ESD sensitivity (HBm) | Class 0, passed 150V |

## Outline Drawing:

Unit:mm



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



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

## Environmental Conditions:

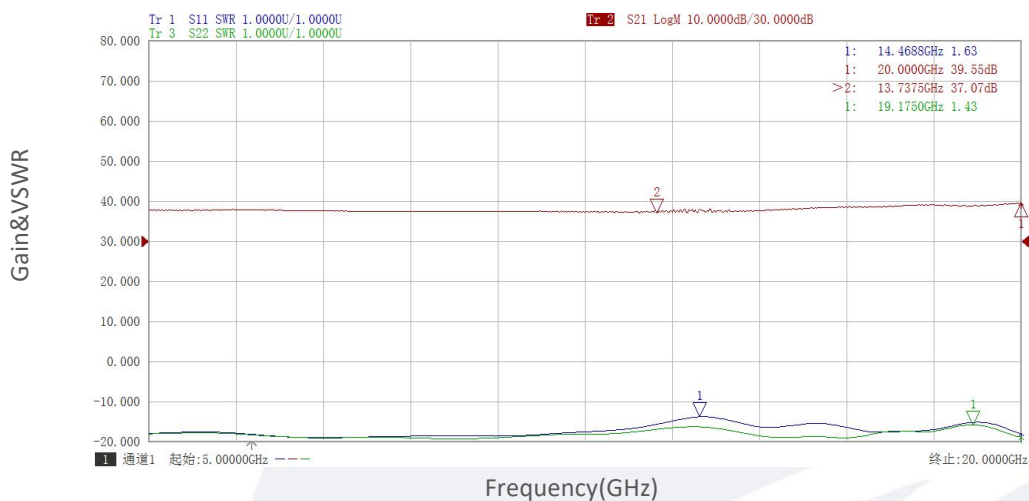
| Parameter                       | Min                                                 | Typ | Max  | Units |
|---------------------------------|-----------------------------------------------------|-----|------|-------|
| Operating Temperature           | -45                                                 |     | +85  | °C    |
| Non-operating Temperature       | -55                                                 |     | +125 | °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  |     |      |       |

## Ordering Information:

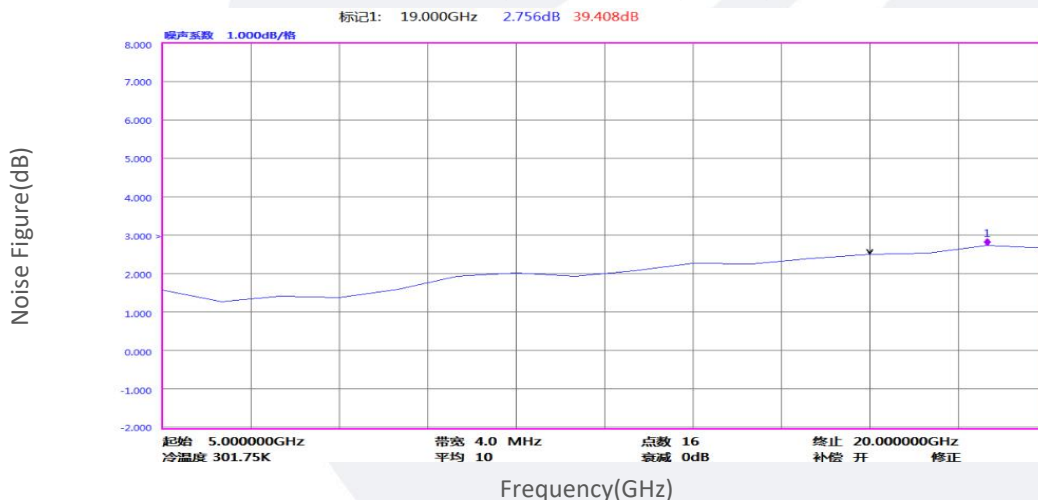
| Base Number        | Description                                                                                        | Revision |
|--------------------|----------------------------------------------------------------------------------------------------|----------|
| TLLA5G20G-35-30    | Low Noise Amplifier, 5-20GHz, Noise Figure:3.0dB, Gain:35 dB,P1dB:14.5dBm,+12V DC,Without Heatsink | Rev.1.1  |
| TLLA5G20G-35-30-HS | Low Noise Amplifier, 5-20GHz, Noise Figure:3.0dB, Gain:35 dB,P1dB:14.5dBm,+12V DC,With Heatsink    | Rev.1.1  |

## Typical Performance Data:

### Gain&VSWR vs Frequency



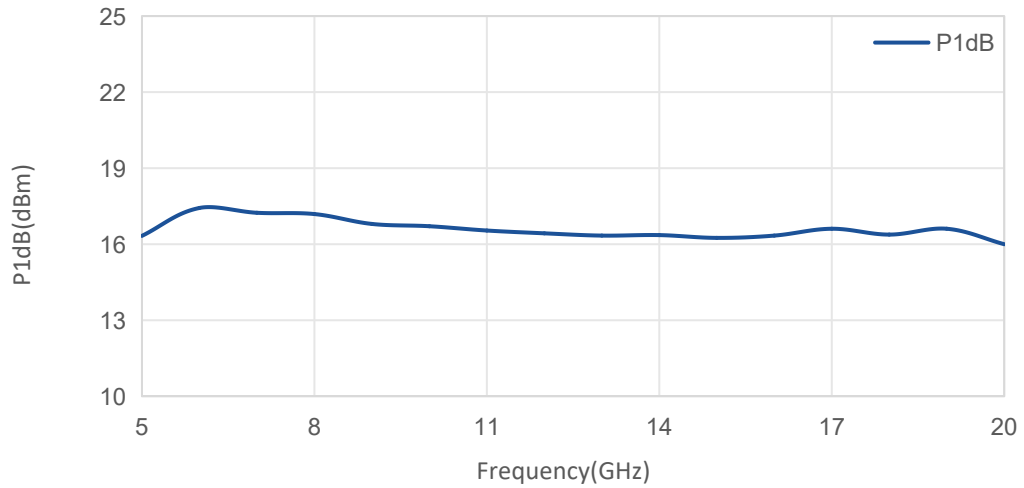
### Noise Figure vs Frequency



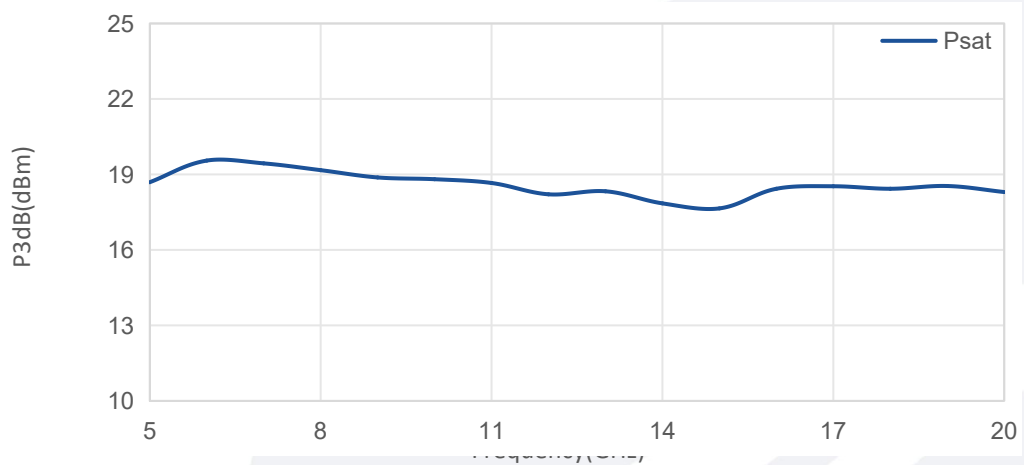
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

## Typical Performance Data:

### P1dB vs Frequency



### Psat 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.