泰莱微波
Talent Microwave

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# Low Noise Amplifier

## 50KHz-20GHz /3.0dB NF/30dB Gain

## Model: TLLA50K20G-30-30

TLLA50K20G-30-30 is a low noise amplifier with a typical small signal gain of 30 dB and a nominal noise figure of 3.0 dB across the frequency range of 50 KHz to 20 GHz. The DC power requirement for the amplifier is +12 V DC/180 mA. The input and output port configuration offers coax adapter structure with SMA female.

### Features:

- Ultra Wide Band:50KHz-20GHz
- Gain: 30dB Typ
- Noise Figure: 3.0dB Typ
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

### Applications:

- Communication systems

### Electrical Characteristics:

| Parameter | Min | Typ | Max | Units |
|---|---|---|---|---|
| Frequency range | | 50KHz-20GHz | | |
| Small Signal Gain | | 30 | | dB |
| Gain Flatness | | ±1.5 | | dB |
| Noise Figure | | 3 | | dB |
| Output P1dB | 15 | 16 | | dBm |
| Input VSWR | | 1.8 | 2 | :1 |
| Output VSWR | | 1.8 | 2 | :1 |
| DC Voltage | | 12 | | V DC |
| DC Supply Current | | 180 | | mA |
| Impedance | | 50 | | Ohms |

### Mechanical Specifications:

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

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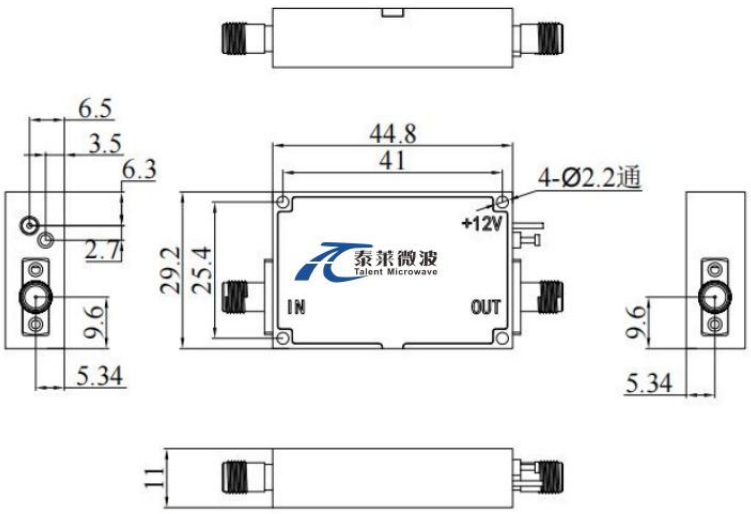
## Absolute Maximum Ratings:

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

## Outline Drawing:

Unit:mm




***Heat Sink Required During Operation

OBSERVE PRECAUTIONS
ELECTROSTATIC SENSITIVE
DEVICES

## Environmental Conditions:

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

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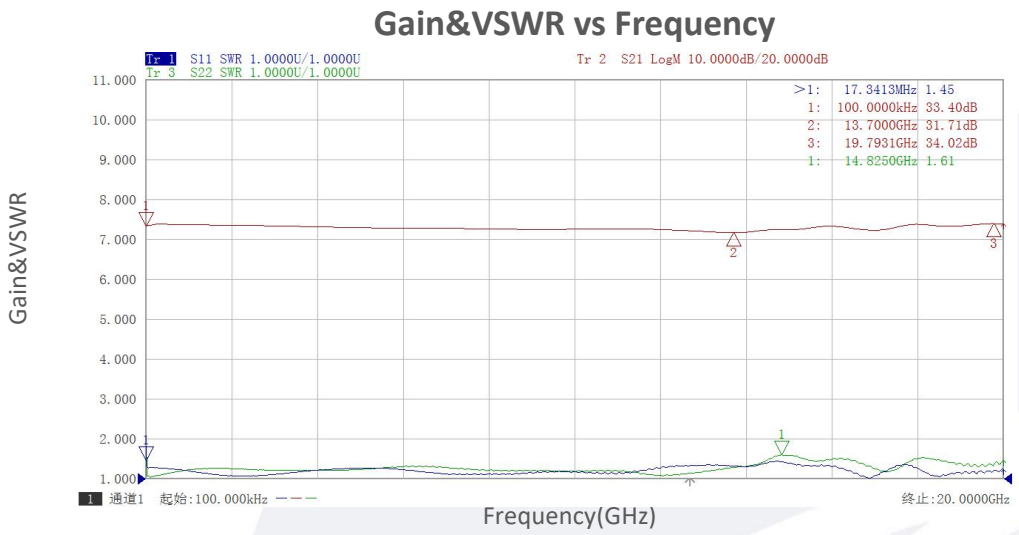
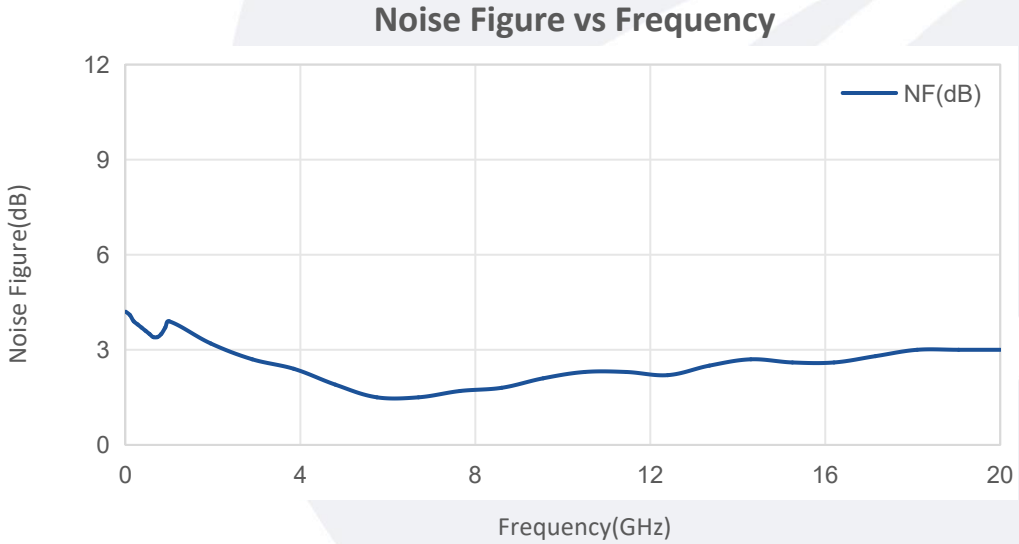
## Ordering Information:

| Base Number | Desciption | Revision |
|---|---|---|
| TLLA50K20G-30-30 | Low Noise Amplifier, 50KHz-20GHz, Noise Figure:3.0dB, Gain:30 dB,P1dB:15dBm,+12V DC,Without Heatsink | Rev.1.1 |
| TLLA50K20G-30-30-HS | Low Noise Amplifier, 50KHz-20GHz, Noise Figure:3.0dB, Gain:30 dB,P1dB:15dBm,+12V DC,With Heatsink | Rev.1.1 |

## Typical Performance Data:




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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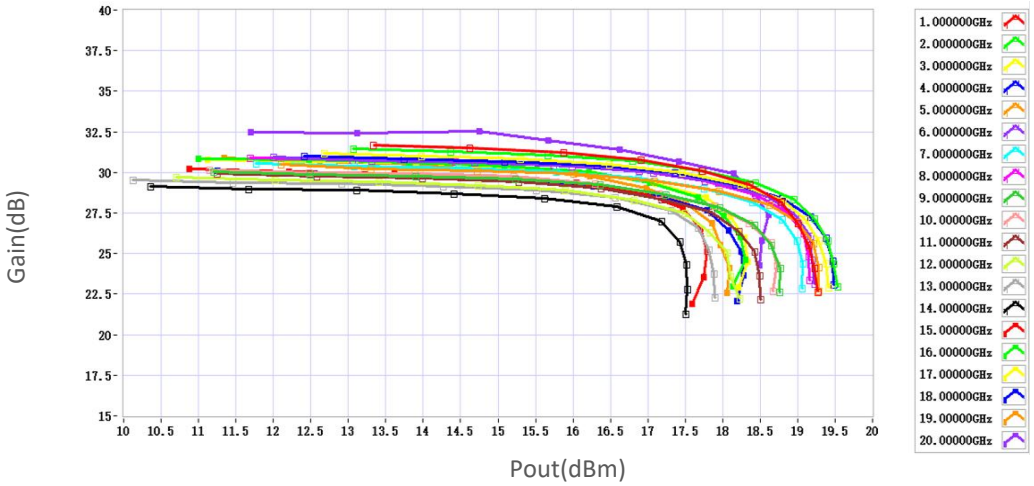
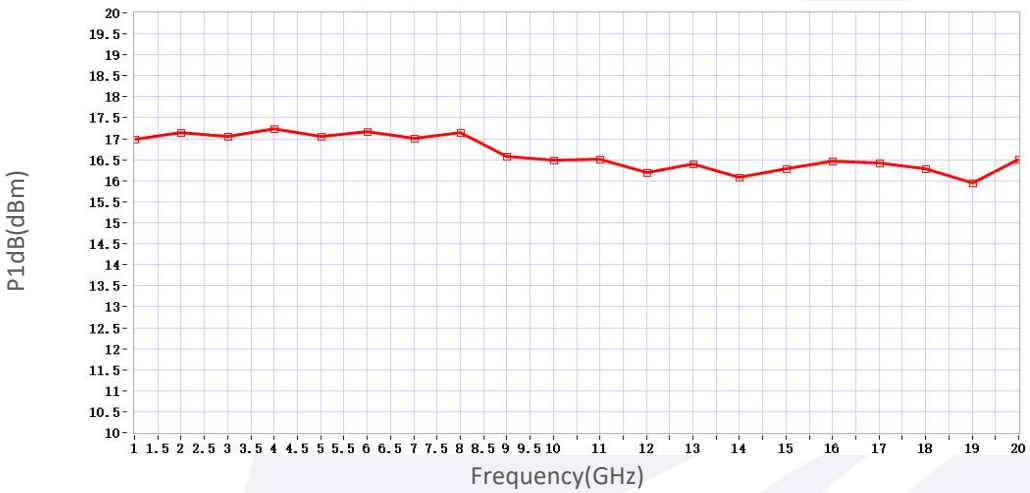
## Typical Performance Data:

### Gain vs Output Power




### P1dB vs Frequency




### P3dB vs Frequency

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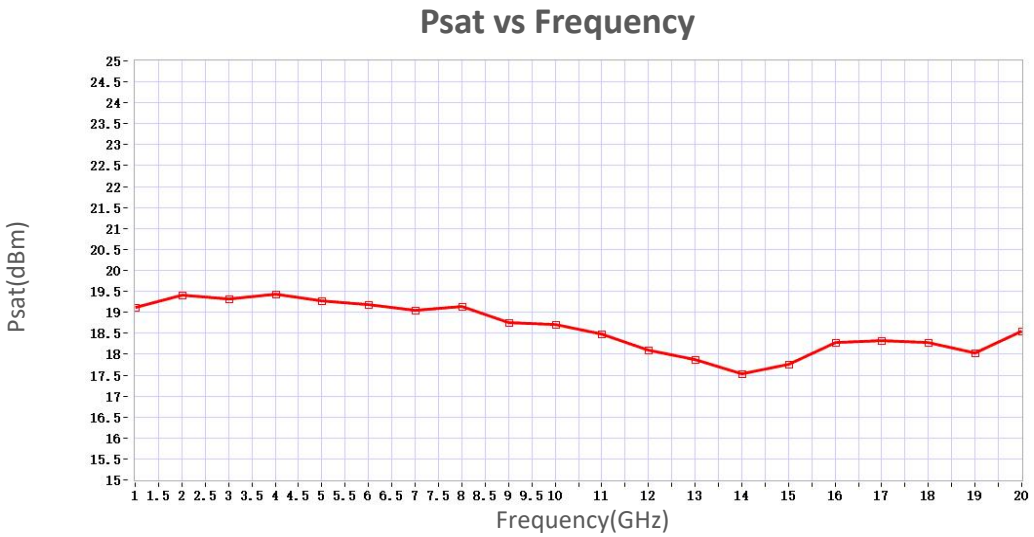


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