

## Low Noise Amplifier

1-18GHz/2.0dB NF/50dB Gain/15dBm P1dB

Model: TLLA1G18G-50-30

TLLA1G18G-50-30 is a low noise amplifier with a typical small signal gain of 50 dB and a nominal noise figure of 2.0 dB across the frequency range of 1 to 18 GHz. The DC power requirement for the amplifier is +12V DC/90 mA. The input and output port configuration offers coax adapter structure with SMA female.

### Features:

- Frequency range: 1-18GHz
- Gain: 50dB Typ
- Noise Figure: 2.0dB Typ
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

### Applications:

- Communication systems

### Electrical Characteristics:

| Parameter         | Min | Typ  | Max | Units |
|-------------------|-----|------|-----|-------|
| Frequency range   | 1   |      | 18  | GHz   |
| Small Signal Gain |     | 50   |     | dB    |
| Gain Flatness     |     | ±2.0 |     | dB    |
| Noise Figure      |     | 2.0  | 3.0 | dB    |
| Output P1dB       |     | 15   |     | dBm   |
| Input VSWR        |     | 1.7  | 2.5 | :1    |
| Output VSWR       |     | 1.7  | 2.5 | :1    |
| DC Voltage        | +8  | +12  | +15 | V DC  |
| DC Supply Current |     | 90   |     | mA    |
| Impedance         |     | 50   |     | Ohms  |

### Mechanical Specifications:

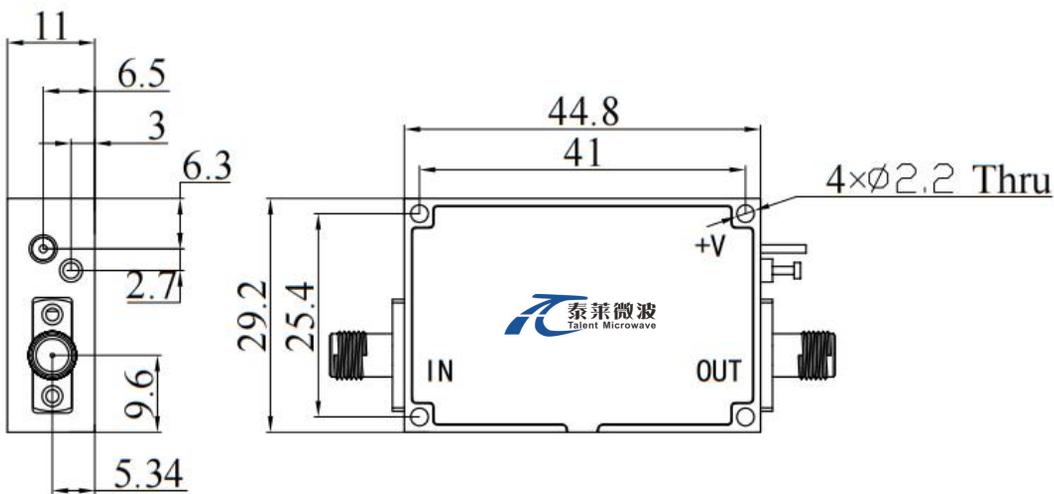
| Parameter               | Value                 | Units |
|-------------------------|-----------------------|-------|
| Input /Output Connector | SMA Female/SMA Female |       |
| DC Bias                 | Solder Pin            |       |
| Size                    | 44.8*29.2*11          | mm    |
| Weight                  | 50                    | g     |

### 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:

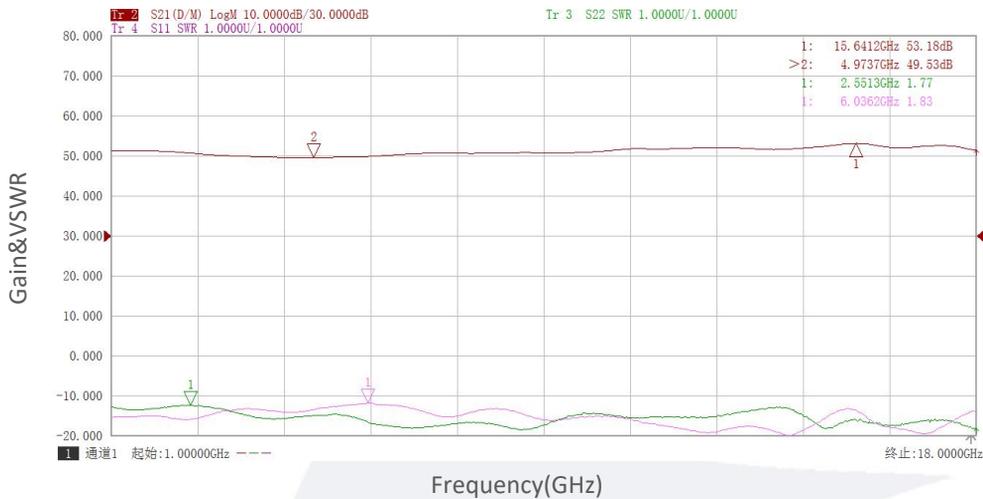
| Parameter                       | Min   | Typ | Max  | Units |
|---------------------------------|---|-----|------|-------|
| Operating Temperature           | -45   |     | +85  | °C    |
| Non-operating Temperature       | -55   |     | +125 | °C    |
| Relative humidity               |   | 95  |      | %     |
| Altitude                        | 50,000  |     |      | 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:

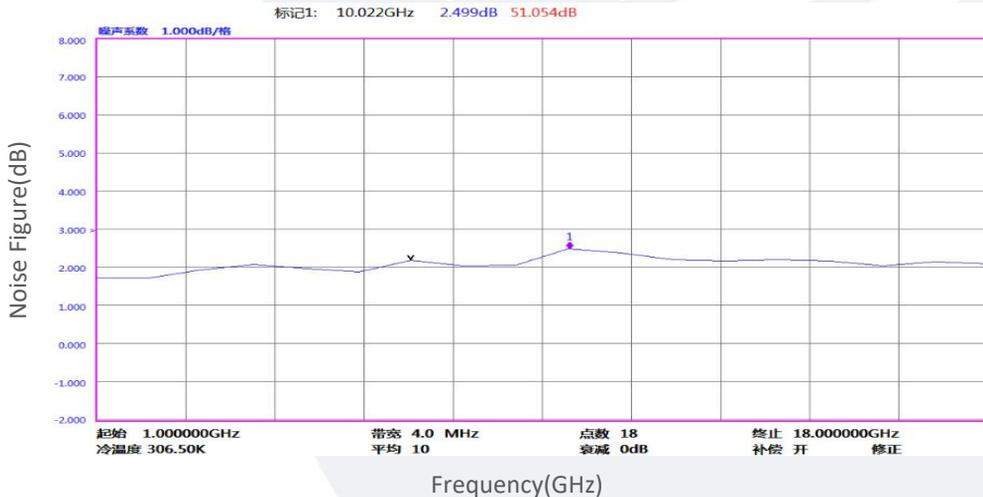
| Base Number        | Description  | Revision |
|--------------------|--|----------|
| TLLA1G18G-50-30    | Low Noise Amplifier, 1-18GHz, Noise Figure:2.0dB, Gain:50 dB,P1dB:15dBm,+12V DC,Without Heatsink | Rev.1.1  |
| TLLA1G18G-50-30-HS | Low Noise Amplifier, 1-18GHz, Noise Figure:2.0dB, Gain:50 dB,P1dB:15dBm,+12V DC,With Heatsink    | Rev.1.1  |

### Typical Performance Data:

#### Gain&VSWR vs Frequency

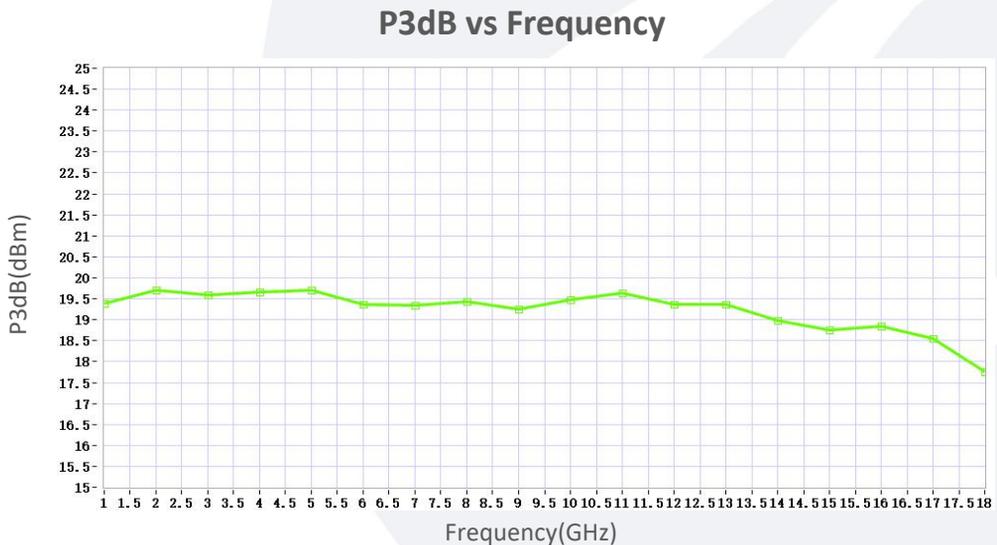
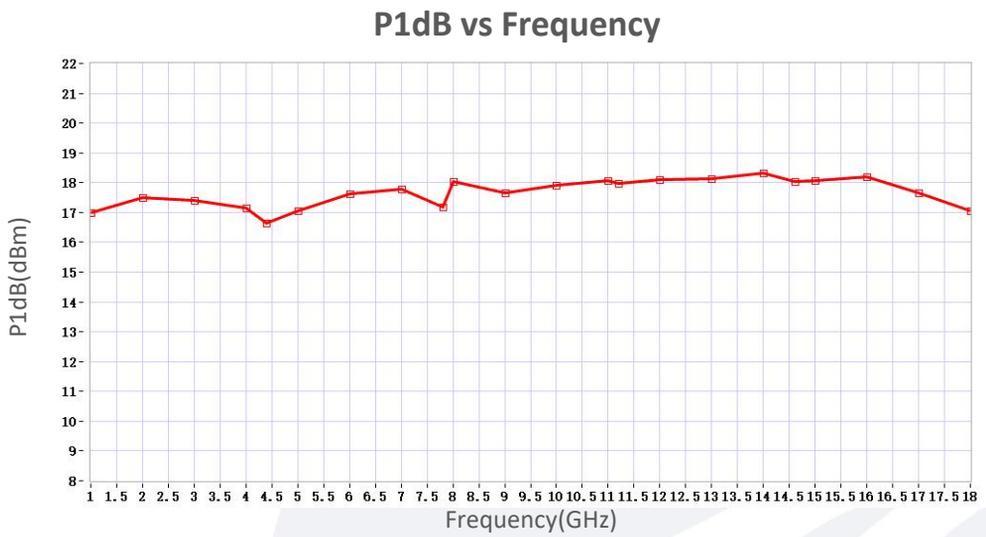
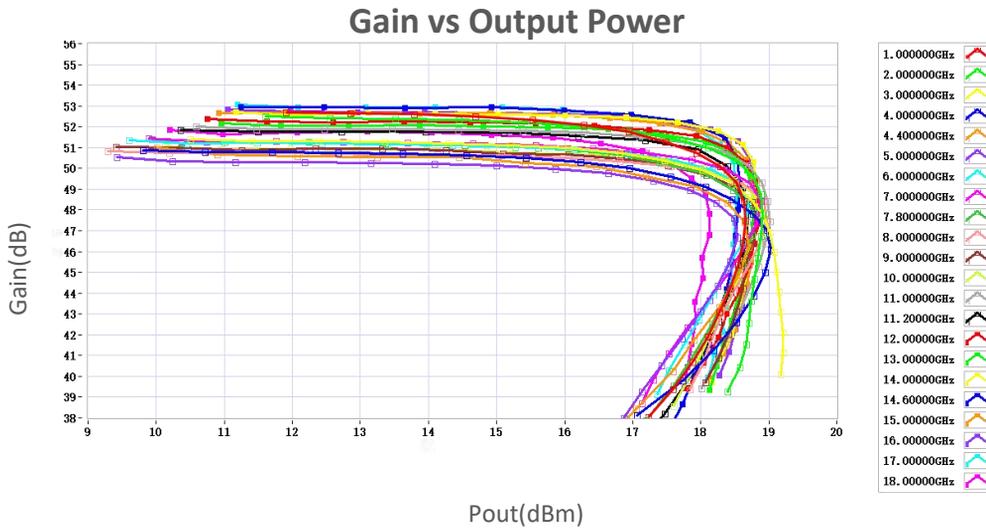


#### Noise Figure vs Frequency



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.

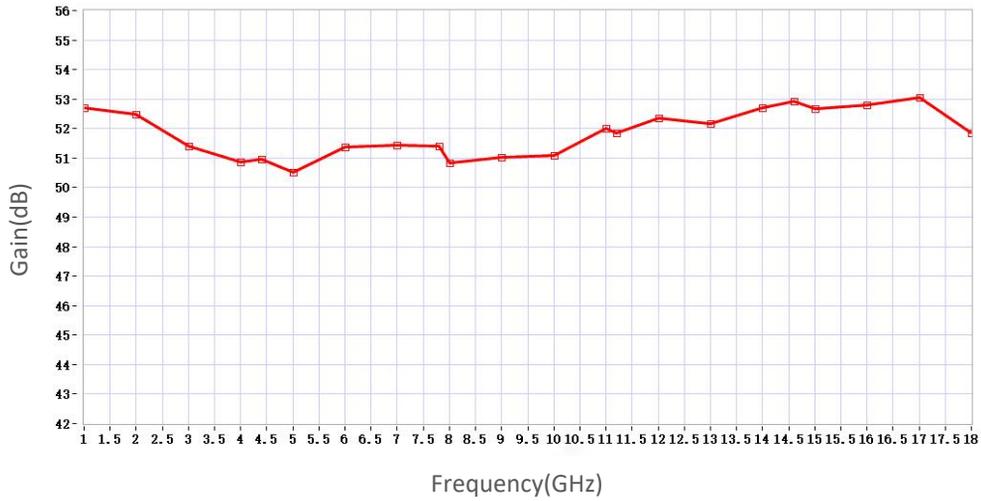
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## Typical Performance Data:

### Gain vs Frequency



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