

Low Noise Amplifier

18-50GHz/4.5dB NF/35dB Gain/14dBm P1dB

Model: TLLA18G50G-35-45

TLLA18G50G-35-45 is a low noise amplifier with a minimum small signal gain of 35 dB and a nominal noise figure of 4.5 dB across the frequency range of 18 to 50 GHz. The DC power requirement for the amplifier is +12 V DC/300 mA. The input and output port configuration offers coax adapter structure with 2.4mm female.

Features:

- Frequency range: 18-50GHz
- Gain: 35dB Min
- Noise Figure: 4.5dB Max
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

Applications:

- Communication systems

Electrical Characteristics:

| Parameter | Min | Typ | Max | Units |
|-------------------|-----|------|-----|-------|
| Frequency range | 18 | | 50 | GHz |
| Small Signal Gain | 35 | | | dB |
| Gain Flatness | | ±3.0 | | dB |
| Noise Figure | | 4 | 4.5 | dB |
| Output P1dB | 10 | 14 | | dBm |
| Output Psat | 12 | 15 | | dBm |
| Input VSWR | | 1.8 | 2.2 | :1 |
| Output VSWR | | 2 | | :1 |
| DC Voltage | +10 | +12 | +15 | V DC |
| DC Supply Current | | 300 | | mA |
| Impedance | | 50 | | Ohms |

Mechanical Specifications:

| Parameter | Value | Units |
|-------------------------|---------------------------|-------|
| Input /Output Connector | 2.4mm Female/2.4mm Female | |
| DC Bias | Solder Pin | |
| Size | 44.8*29.2*11 | mm |
| Weight | 50 | g |

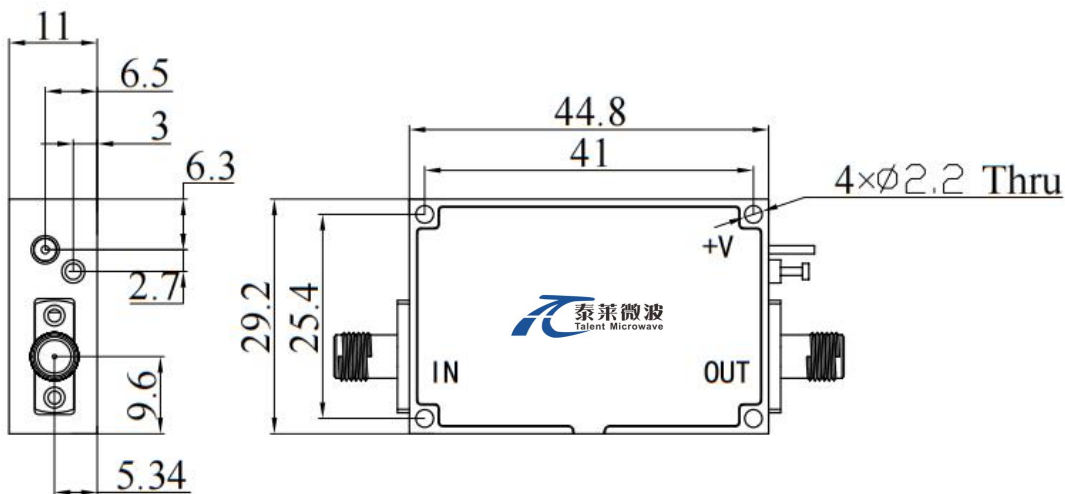
Absolute Maximum Ratings:

| Parameter | Value |
|-----------------------|----------------------|
| Supply Bias Voltage | +15 V |
| RF Input Power | +5 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.

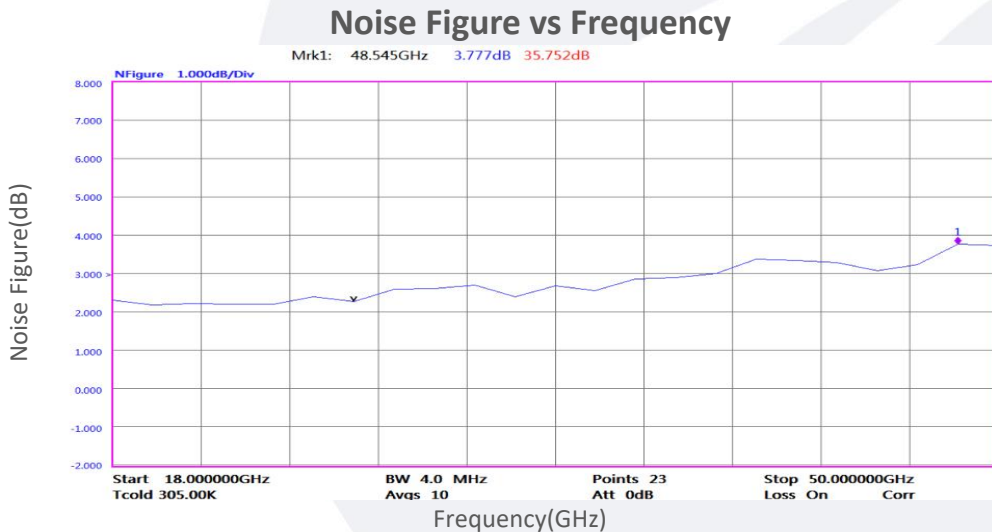
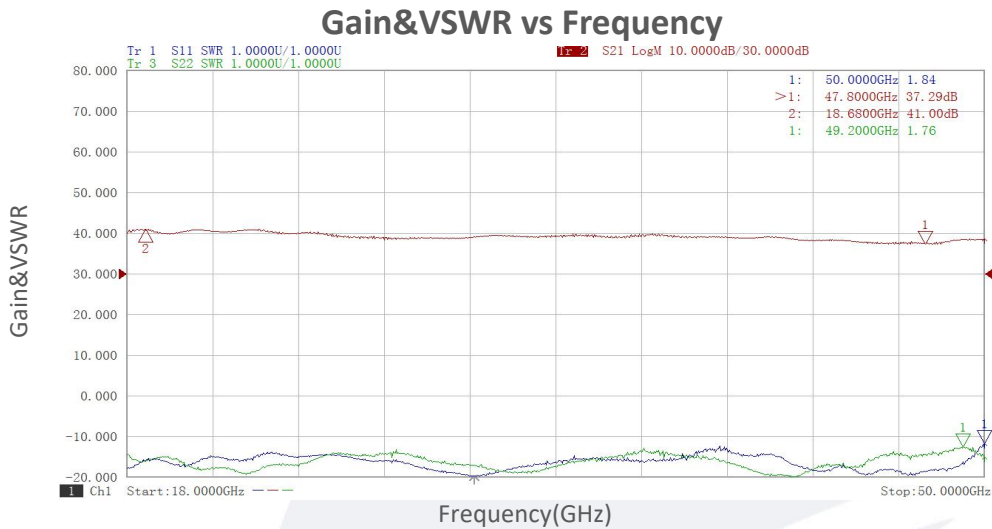
Environmental Conditions:

| 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 |
|---------------------|---|----------|
| TLLA18G50G-35-45 | Low Noise Amplifier, 18-50GHz, Noise Figure:4.5dB, Gain:35 dB,P1dB:14dBm,+12V DC,Without Heatsink | Rev.1.1 |
| TLLA18G50G-35-45-HS | Low Noise Amplifier, 18-50GHz, Noise Figure:4.5dB, Gain:35 dB,P1dB:14dBm,+12V DC,With Heatsink | Rev.1.1 |

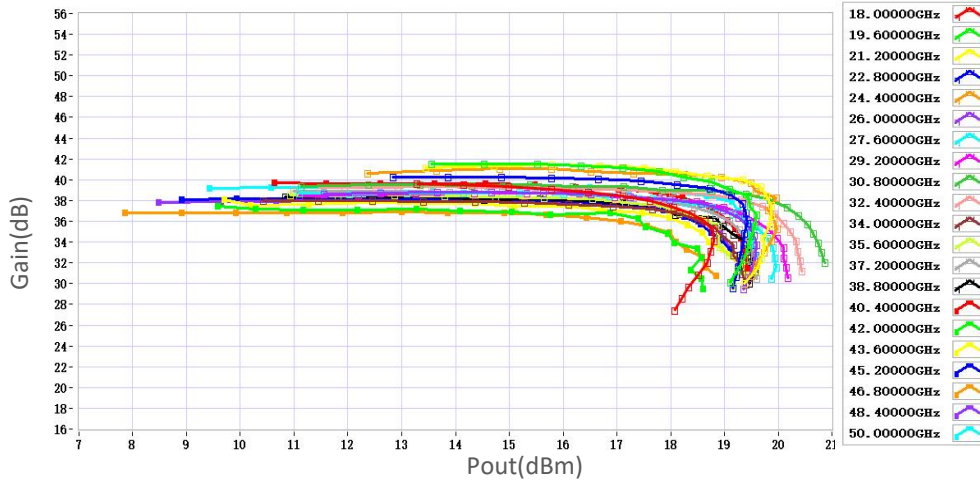
Typical Performance Data:



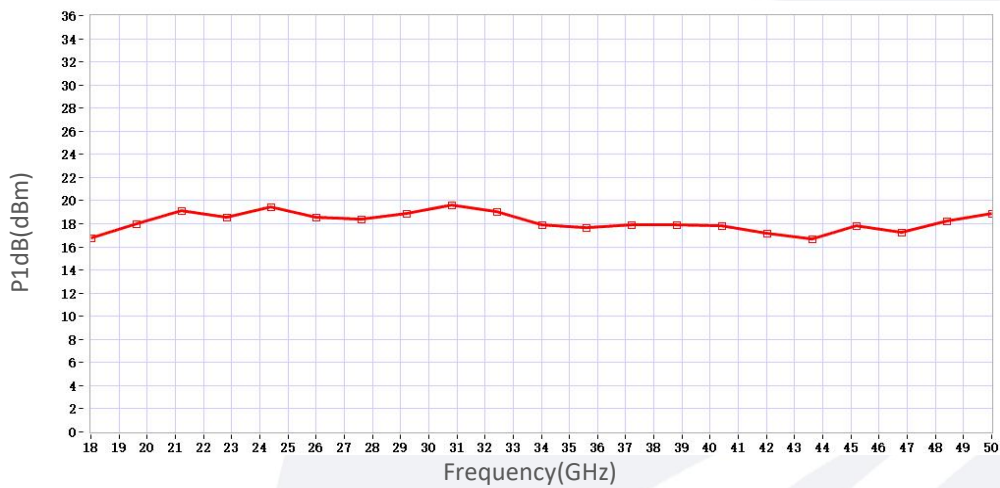
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

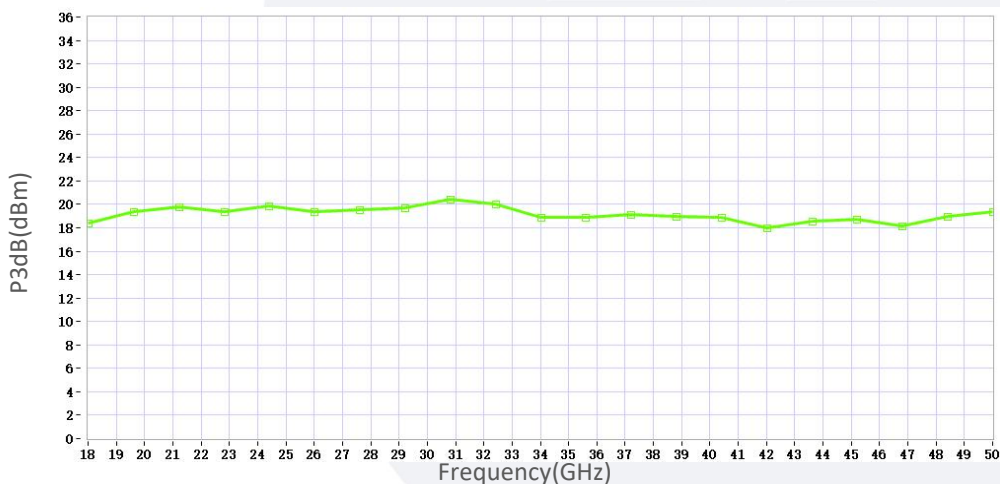
Gain vs Output Power



P1dB vs Frequency



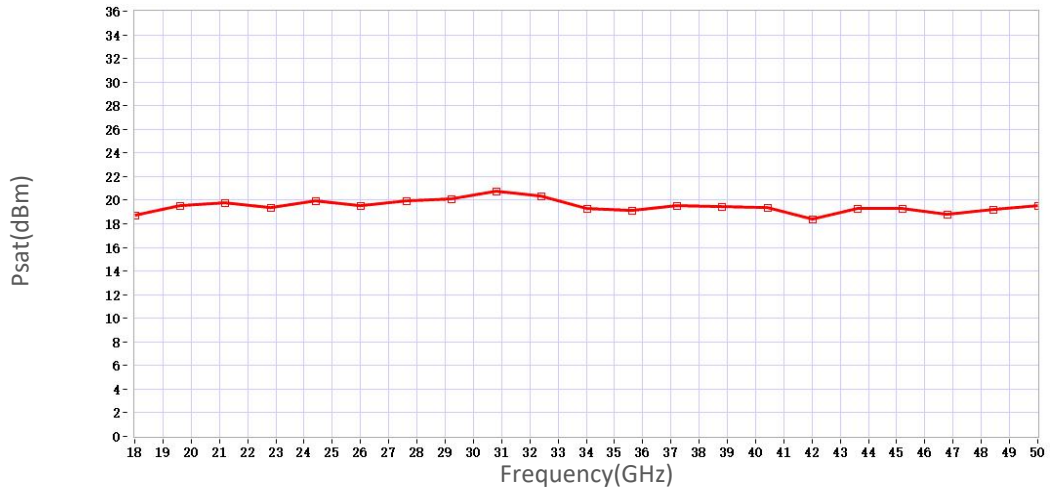
P3dB vs Frequency



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Typical Performance Data:

Psat vs Frequency



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