

Low Noise Amplifier

50KHz-50GHz/5.5dB NF/38dB Gain/14dBm P1dB

Model: TLLA50K50G-38-50

TLLA50K50G-38-50 is a low noise amplifier with a typical small signal gain of 38 dB and a nominal noise figure of 5.5 dB across the frequency range of 50 KHz to 50 GHz. The DC power requirement for the amplifier is +6 V DC/180 mA. The input and output port configuration offers coax adapter structure with 2.4mm female.

Features:

- Frequency range: 50KHz-50GHz
- Gain: 38dB Typ
- Noise Figure: 5.5dB Typ
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

Applications:

- Communication systems

Electrical Characteristics:

| Parameter | | Min | Typ | Max | Units |
|-------------------|--------------|-------------|------|-----|-------|
| Frequency range | | 50KHz-50GHz | | | |
| Small Signal Gain | | 36 | 38 | | dB |
| Gain Flatness | | | ±2.5 | | dB |
| Noise Figure | | | 5.5 | | dB |
| Output P1dB | @10MHz-40GHz | | 14 | | dBm |
| | @40-50GHz | | 9 | | |
| Input VSWR | | | 1.8 | | :1 |
| Output VSWR | | | 1.8 | | :1 |
| DC Voltage | | | +6 | +12 | V DC |
| DC Supply Current | | | 180 | | mA |
| Impedance | | 50 | | | Ohms |

Mechanical Specifications:

| Parameter | Value | Units |
|-------------------------|---------------------------|-------|
| Input /Output Connector | 2.4mm Female/2.4mm Female | |
| DC Bias | Solder Pin | |
| Size | 35*40*12 | mm |

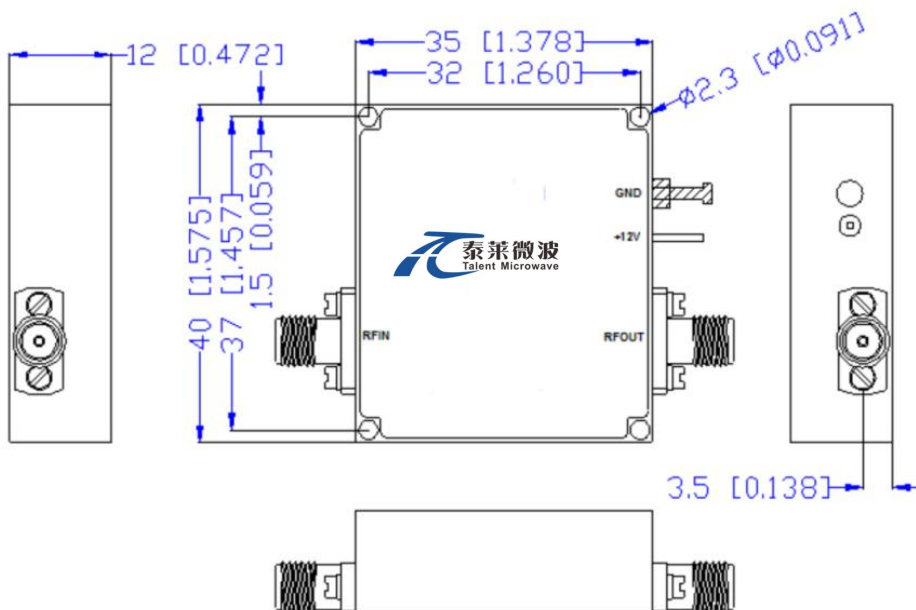
Absolute Maximum Ratings:

| Parameter | Value |
|-----------------------|----------------------|
| Supply Bias Voltage | TBD |
| 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:

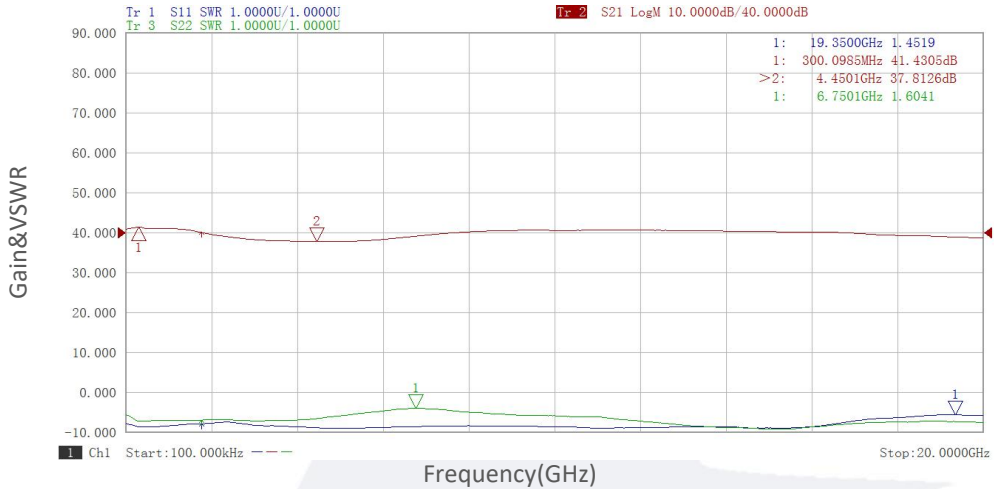
| Parameter | Min | Typ | Max | Units |
|---------------------------------|---|-----|------|-------|
| Operating Temperature | -45 | | +85 | °C |
| Non-operating Temperature | -55 | | +125 | °C |
| Relative humidity | | 95 | | % |
| Altitude | 50,000 | | | feet |
| Shock / Vibration(MIL-STD-810F) | 25g rms (15 degree 2KHz) endurance, 1 hour per axis | | | |
| Shock(non operating) | 20G for 11msc half sin wave,3 axis both directions | | | |

Ordering Information:

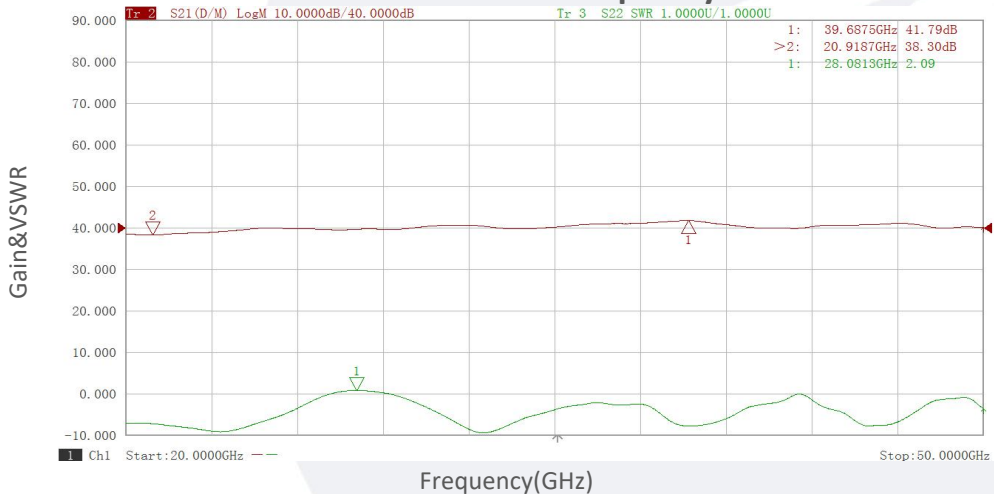
| Base Number | Description | Revision |
|---------------------|---|----------|
| TLLA50K50G-38-50 | Low Noise Amplifier, 50KHz-50GHz, Noise Figure: 5.5dB, Gain: 38 dB, P1dB: 14dBm, +6V DC, Without Heatsink | Rev.1.1 |
| TLLA50K50G-38-50-HS | Low Noise Amplifier, 50KHz-50GHz, Noise Figure: 5.5dB, Gain: 38 dB, P1dB: 14dBm, +6V DC, With Heatsink | Rev.1.1 |

Typical Performance Data:

Gain&VSWR vs Frequency



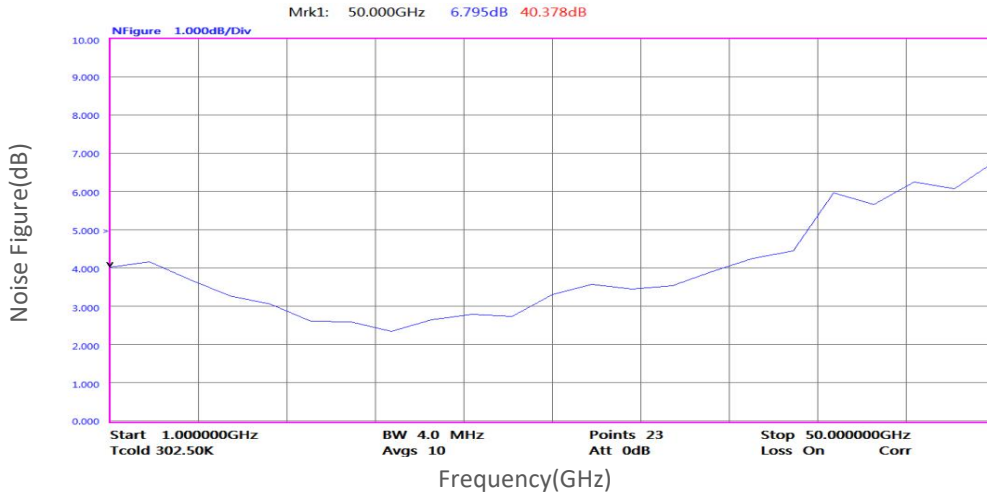
Gain&VSWR vs Frequency



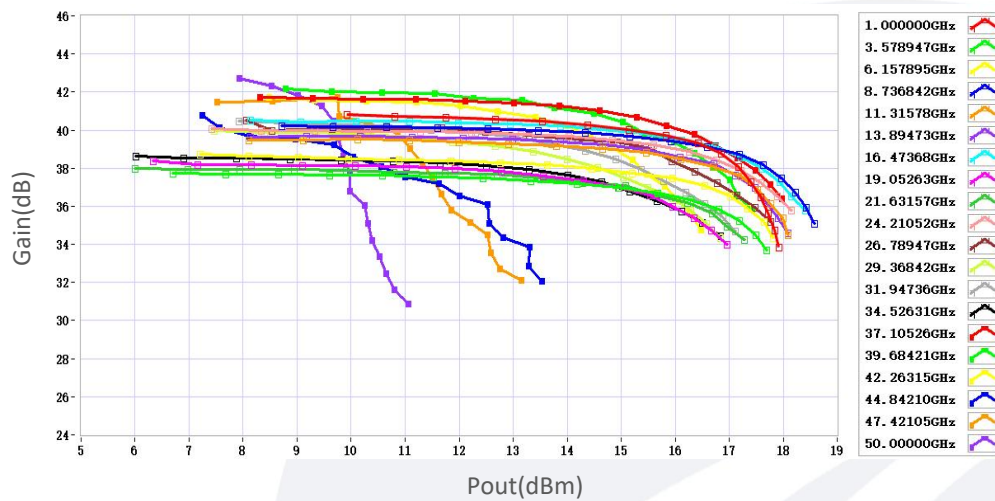
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

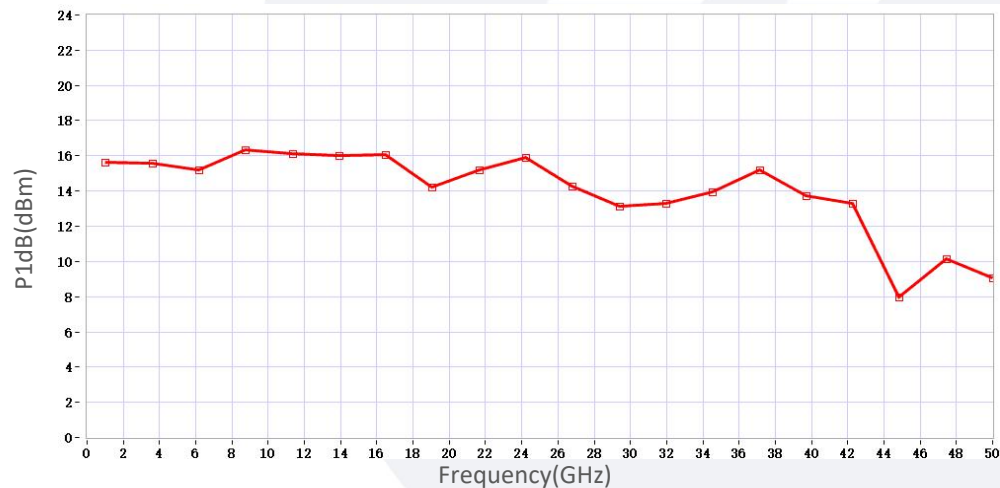
Noise Figure vs Frequency



Gain vs Output Power

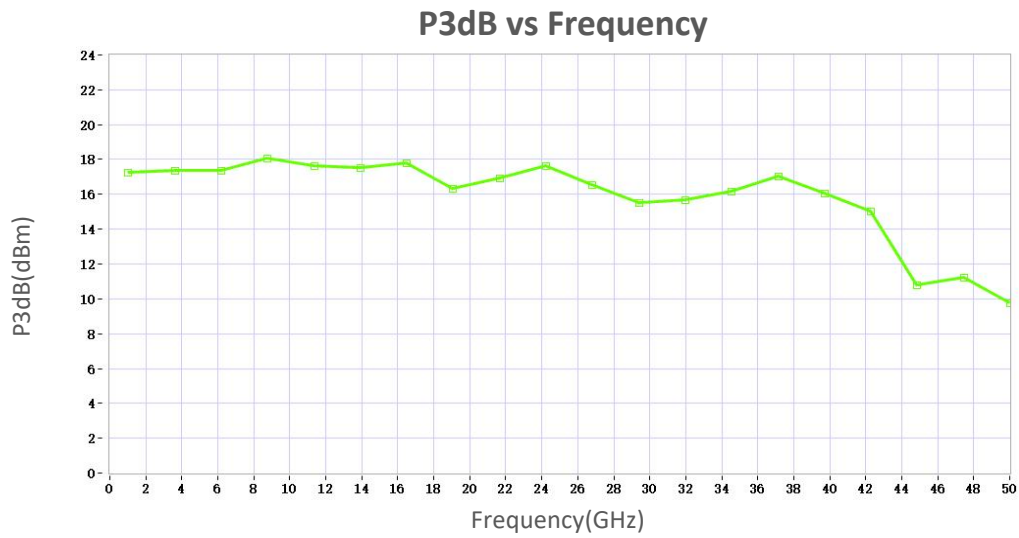


P1dB vs Frequency



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