# Low Noise Amplifier
## 0.1-50GHz/4.5dB NF/12dB Gain/10dBm P1dB          Model: TLLA0.1G50G-12-45

TLLA0.1G50G-12-45 is a low noise amplifier with a typical small signal gain of 12 dB and a nominal noise figure of 4.5 dB across the frequency range of 0.1 to 50 GHz. The DC power requirement for the amplifier is +8 V DC/80 mA.  The input and output port configuration offers coax adapter structure with 2.4mm female.

## Features:

- Frequency range: 0.1-50GHz
- Gain: 12dB Typ
- Noise Figure: 4.5dB Typ
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

## Applications:

- Communication systems

## Electrical Characteristics:

| Parameter | Min | Typ | Max | Units |
|---|---|---|---|---|
| Frequency range | 0.1 | | 50 | GHz |
| Small Signal Gain | 10 | 12 | | dB |
| Gain Flatness | | ±2.5 | | dB |
| Noise Figure | | 4.5 | 7 | dB |
| Output P1dB | 8 | 10 | | dBm |
| Output Psat | | 12 | | dBm |
| Input VSWR | | 1.8 | 2.5 | :1 |
| Output VSWR | | 1.8 | 2.5 | :1 |
| DC Voltage | +5 | +8 | +10 | V DC |
| DC Supply Current | | 80 | | mA |
| Impedance | | 50 | | Ohms |

## Mechanical Specifications:

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

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## Absolute Maximum Ratings:

| Parameter | Value |
|---|---|
| Supply Bias Voltage | +12 V |
| RF Input Power | +5 dBm |
| ESD sensitivity (HBm) | Class 0, passed 150V |

## Outline Drawing:

Unit:mm
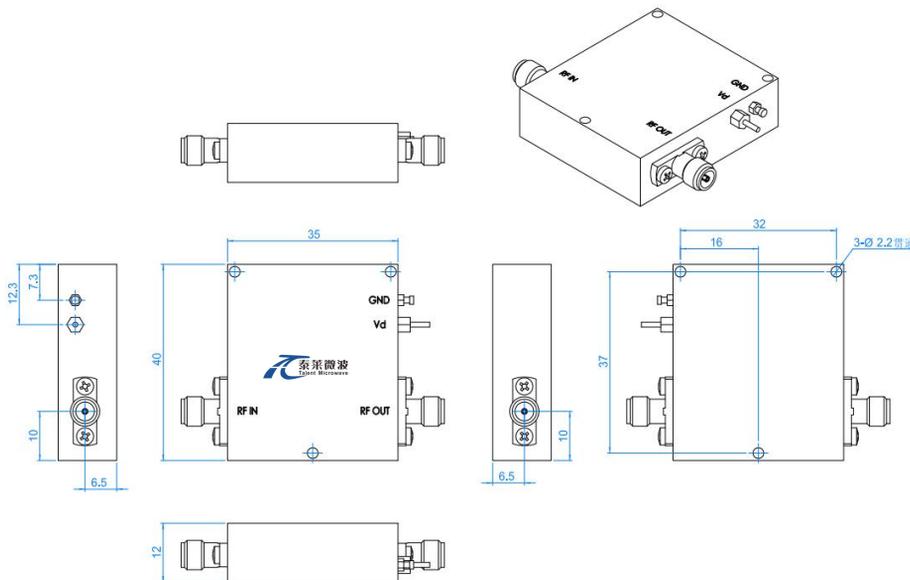


### ***Heat Sink Required During Operation

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

## Environmental Conditions:

| Parameter | Min | Typ | Max | Units |
|---|---|---|---|---|
| Operating Temperature | -45 | | +85 | ℃ |
| 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 | | | |

## Ordering Information:

| Base Number | Description | Revision |
|---|---|---|
| TLLA0.1G50G-12-45 | Low Noise Amplifier, 0.1-50GHz, Noise Figure:4.5dB, Gain:12 dB,P1dB:10dBm,+8V DC,Without Heatsink | Rev.1.1 |
| TLLA0.1G50G-12-45-HS | Low Noise Amplifier, 0.1-50GHz, Noise Figure:4.5dB, Gain:12 dB,P1dB:10dBm,+8V DC,With Heatsink | Rev.1.1 |