Suzhou Talent Microwave,Inc
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# Low Noise Amplifier

## 0.01-18GHz/3.0dB NF/30dB Gain/21dBm P1dBm
## 18-40GHz/5.5dB NF/29dB Gain/19dBm P1dBm

## Model: TLLA10M40G-30-30

TLLA10M40G-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 0.01 to 18 GHz. And offers a typical small signal gain of 29 dB and a nominal noise figure of 5.5 dB across the frequency range of 18 to 40 GHz. The DC power requirement for the amplifier is +12 V DC/350 mA. The input and output port configuration offers coax adapter structure with 2.92mm female.

### Features:

- Frequency range: 0.01-40GHz
- Gain: 30dB @Band A Typ; 29dB @Band B Typ
- Noise Figure: 3.0dB @Band A Typ; 5.5dB @Band B Typ
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

### Applications:

- Communication systems

### Electrical Characteristics:

| Parameter | | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Frequency range | | Band A:0.01-18; Band B:18-40 | | | GHz |
| Small Signal Gain | @0.01-18GHz | 25 | 30 | | dB |
| | @18-40GHz | 24 | 29 | | |
| Gain Flatness | @0.01-18GHz | | ±3 | | dB |
| | @18-40GHz | | ±2.5 | | |
| Noise Figure | @0.01-18GHz | | 3 | | dB |
| | @18-40GHz | | 5.5 | | |
| Output P1dB | @0.01-18GHz | 18 | 21 | | dBm |
| | @18-40GHz | 16 | 19 | | |
| Output Psat | @0.01-18GHz | | 23 | | dBm |
| | @18-40GHz | | 21 | | |
| Output IP3 | @0.01-18GHz | | 31 | | dBm |
| | @18-40GHz | | 28 | | |

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## Electrical Characteristics:

| Parameter | | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Input VSWR | @0.01-18GHz | | 1.8 | | :1 |
| | @18-40GHz | | 2 | | |
| Output VSWR | @0.01-18GHz | | 1.8 | | :1 |
| | @18-40GHz | | 2 | | |
| DC Voltage | | | +12 | | V DC |
| DC Supply Current | | | 350 | 400 | mA |
| Impedance | | 50 | | | Ohms |

## Mechanical Specifications:

| Parameter | Value | Units |
|---|---|---|
| Input /Output Connector | 2.92mm Female/2.92mm Female | |
| DC Bias | Solder Pin | |
| Size | 30*48*12(Without Heatsink)<br>30*92*27(With Heatsink) | mm |
| Weight | 40 | g |

## Absolute Maximum Ratings:

| Parameter | Value |
|---|---|
| Supply Bias Voltage | +15 V |
| RF Input Power | +2 dBm |
| ESD sensitivity (HBm) | Class 0, passed 150V |

Simple 220V System
Available SAC option

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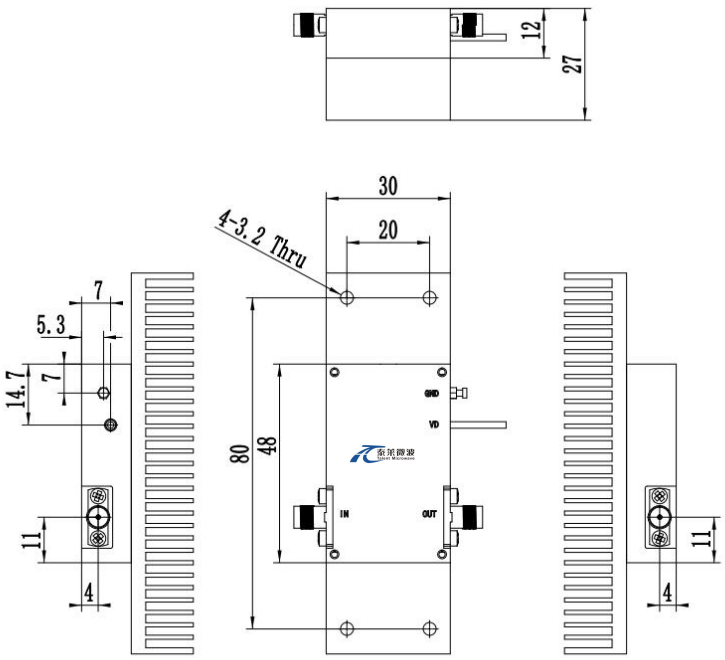
## Outline Drawing:

Unit:mm




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 | 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 |
|---|---|---|
| TLLA10M40G-30-30 | Low Noise Amplifier, Band A: Noise Figure:3.0dB, Gain:30 dB,P1dB:21dBm,18-40GHz, Noise Figure:5.5dB, Gain:29 dB,P1dB:19dBm; +12V DC,Without Heatsink | Rev.1.1 |
| TLLA10M40G-30-30-HS | Low Noise Amplifier, Band A: Noise Figure:3.0dB, Gain:30 dB,P1dB:21dBm,18-40GHz, Noise Figure:5.5dB, Gain:29 dB,P1dB:19dBm; +12V DC,With Heatsink | Rev.1.1 |

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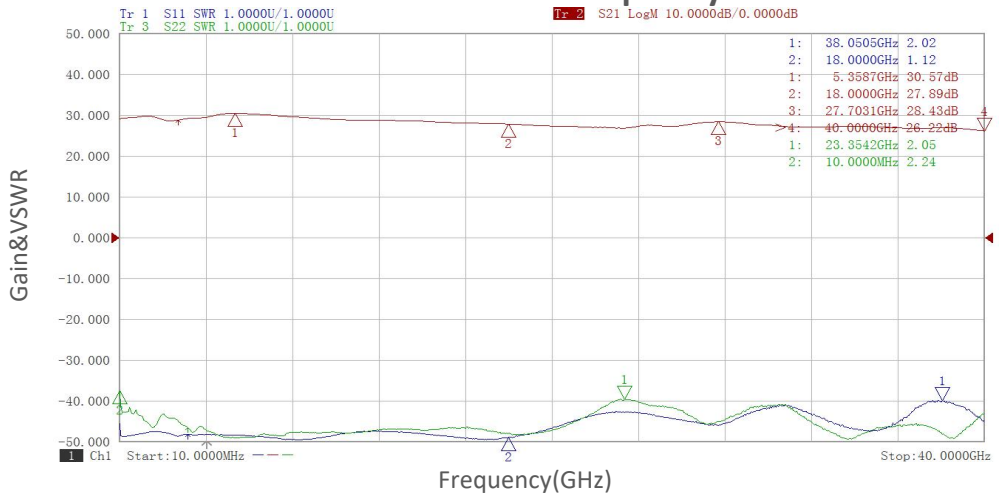
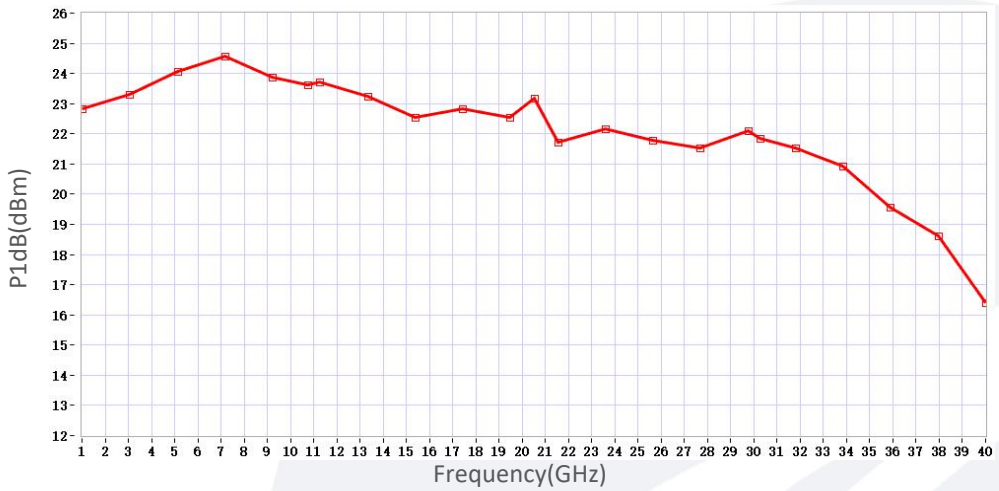
## Typical Performance Data:

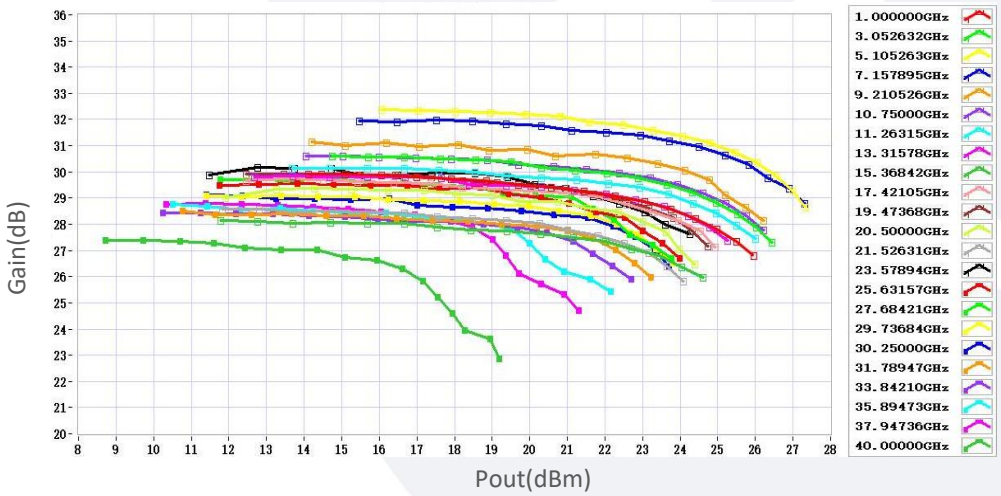
### Gain&VSWR vs Frequency




### P1dB vs Frequency




### Gain vs Output Power




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.