

## Low Noise Amplifier

0.01-3GHz/2.0dB NF/44dB Gain/20dBm P1dB

Model: TLLA10M3G-44-20

TLLA10M3G-44-20 is a low noise amplifier with a typical small signal gain of 44 dB and a nominal noise figure of 2.0 dB across the frequency range of 0.01 to 3 GHz. The DC power requirement for the amplifier is +12 V DC/80 mA. The input and output port configuration offers coax adapter structure with SMA female.

### Features:

- Frequency range: 0.01-3GHz
- Gain: 44dB 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   | 0.01 |      | 3   | GHz   |
| Small Signal Gain | 42   | 44   |     | dB    |
| Gain Flatness     |      | ±2.0 |     | dB    |
| Noise Figure      |      | 2.0  |     | dB    |
| Output P1dB       |      | 20   |     | dBm   |
| Input VSWR        |      | 1.8  |     | :1    |
| Output VSWR       |      | 1.8  |     | :1    |
| DC Voltage        |      | +12  |     | V DC  |
| DC Supply Current |      | 80   |     | mA    |
| Impedance         |      | 50   |     | Ohms  |

Note: Performance may degrade below 300 MHz. Please refer to below typical test plots

### Mechanical Specifications:

| Parameter               | Value                 | Units |
|-------------------------|-----------------------|-------|
| Input /Output Connector | SMA Female/SMA Female |       |
| DC Bias                 | Solder Pin            |       |
| Size                    | 44.8*29.2*11          | mm    |
| Weight                  | 55                    | g     |

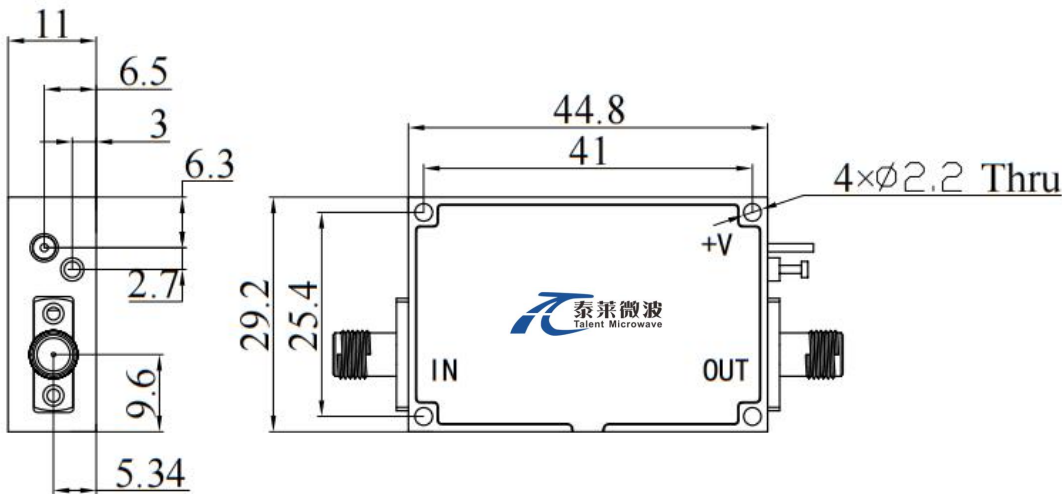
## Absolute Maximum Ratings:

| Parameter             | Value                |
|-----------------------|----------------------|
| Supply Bias Voltage   | +12 V                |
| RF Input Power        | +15 dBm              |
| ESD sensitivity (HBm) | Class 0, passed 150V |



## Outline Drawing:

Unit:mm; Tolerance:±0.1mm



**\*\*\*Heat Sink Required During Operation**



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

## Environmental Conditions:

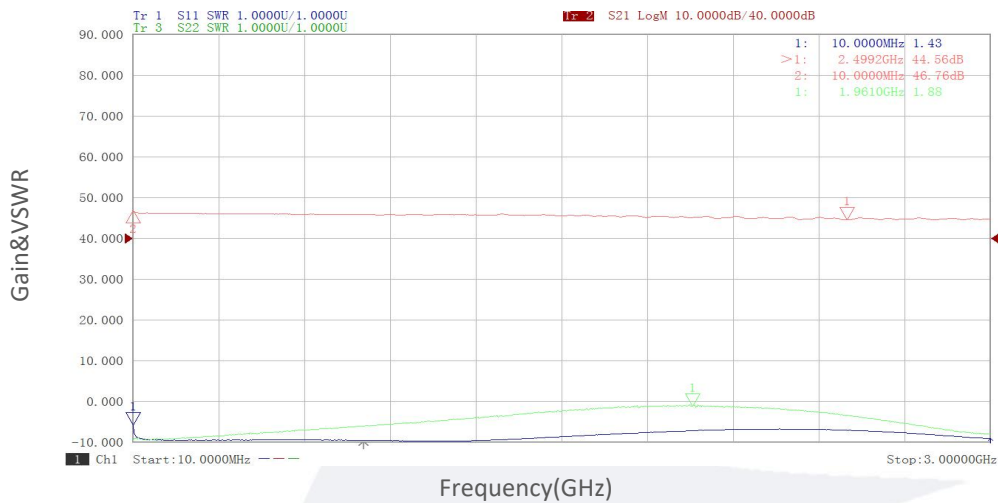
| Parameter                       | Min                                                 | Typ | Max  | Units |
|---------------------------------|-----------------------------------------------------|-----|------|-------|
| Operating Temperature           | -45                                                 |     | +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:

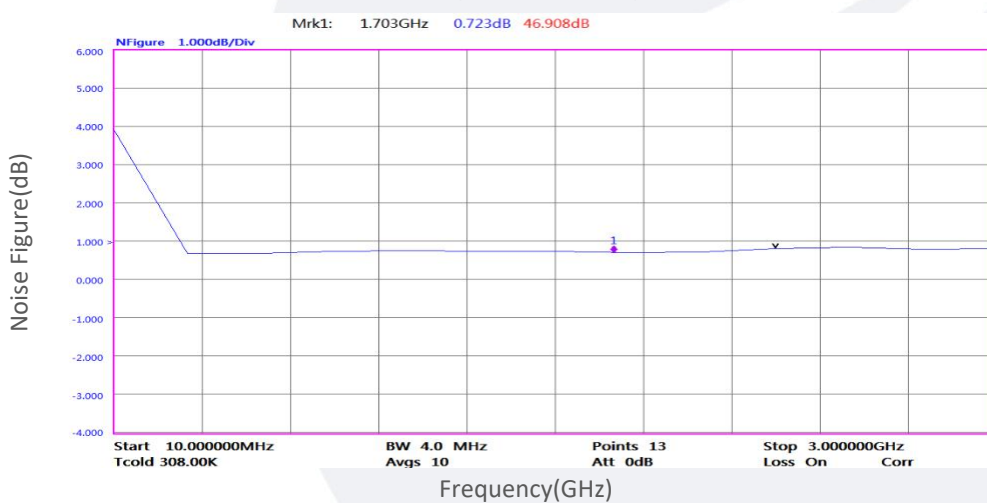
| Base Number        | Description                                                                                        | Revision |
|--------------------|----------------------------------------------------------------------------------------------------|----------|
| TLLA10M3G-44-20    | Low Noise Amplifier, 0.01-3GHz, Noise Figure:2.0dB, Gain:44 dB,P1dB:20dBm,+12V DC,Without Heatsink | Rev.1.1  |
| TLLA10M3G-44-20-HS | Low Noise Amplifier, 0.01-3GHz, Noise Figure:2.0dB, Gain:44 dB,P1dB:20dBm,+12V DC,With Heatsink    | Rev.1.1  |

## Typical Performance Data:

### Gain&VSWR vs Frequency



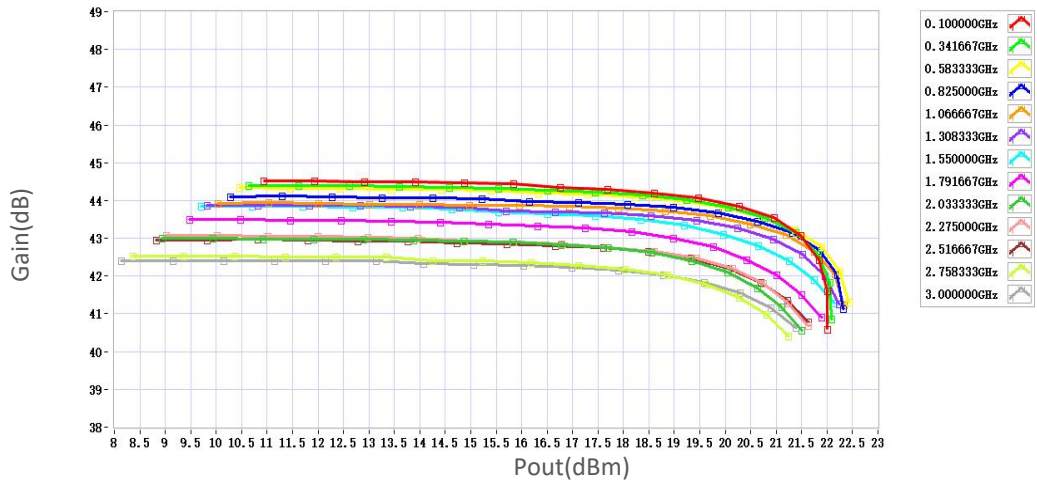
### Noise Figure vs Frequency



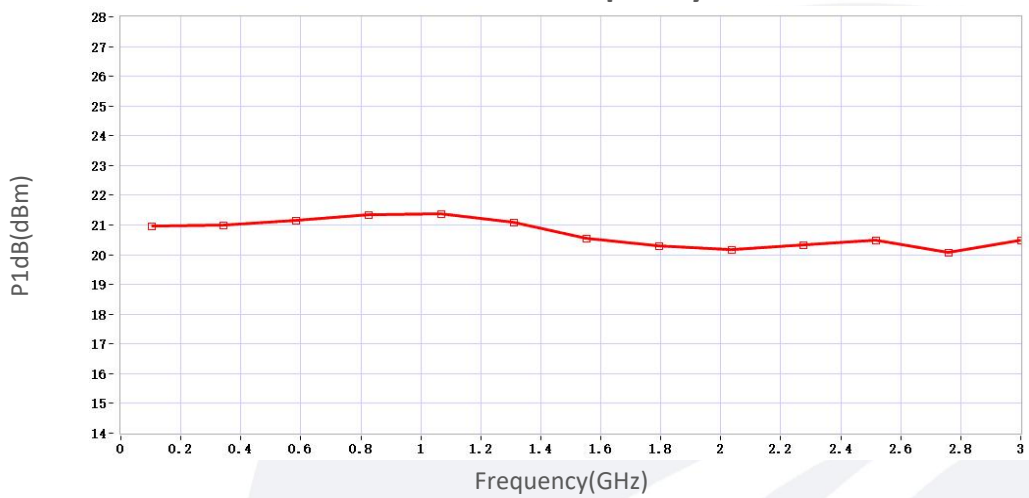
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

## Typical Performance Data:

### Gain vs Output Power



### P1dB 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.