

## Low Noise Amplifier

**WR-10/75-110GHz /4.2dB NF/35dB Gain****Model: TMLA-075110-3542-10**

TMLA-075110-3542-10 is a W-Band low noise amplifier with a typical small signal gain of 35 dB and a nominal noise figure of 4.2 dB across the frequency range of 75 to 110 GHz. The DC power requirement for the amplifier is +12 VDC /90 mA. The input and output port configuration offers an inline structure with WR-10 waveguides and UG-387/U-M anti-cocking flanges.

### Features:

- Frequency range:75-110 GHz
- Gain: 35dB Typ
- Noise Figure: 4.2 dB Typ
- Unconditional stability

### Applications:

- Passive Imaging
- 5G Systems

### Electrical Characteristics:

| Parameter       | Min | Typ | Max | Units |
|-----------------|-----|-----|-----|-------|
| Frequency range | 75  |     | 110 | GHz   |
| Gain            |     | 35  |     | dB    |
| Gain Flatness   |     | ±3  |     | dB    |
| Noise Figure    |     | 4.2 |     | dB    |
| Output P1dB     |     | 9   |     | dBm   |
| Input VSWR      |     | 2   |     | :1    |
| Output VSWR     |     | 2.5 |     | :1    |
| DC Voltage      |     | 12  |     | V DC  |
| DC power supply |     | 90  |     | mA    |

### Mechanical Specifications:

| Parameter        | Value           | Units |
|------------------|-----------------|-------|
| Input Connector  | WR-10/ UG-387/U |       |
| Output Connector | WR-10/ UG-387/U |       |
| Power Supply Pin | Solder Pin      |       |
| Size             | 39*30*23        | mm    |

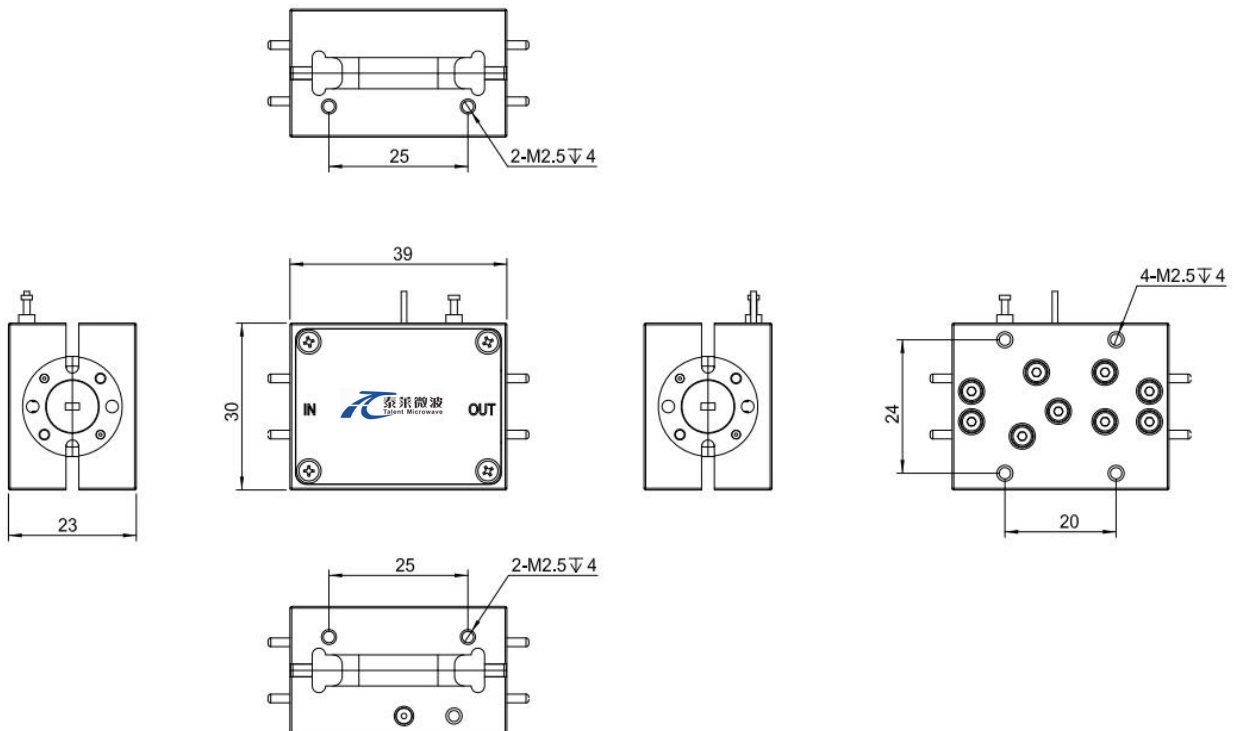
## Absolute Maximum Ratings:

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

## Outline Drawing:

Unit:mm

## Regulatory Compliance:



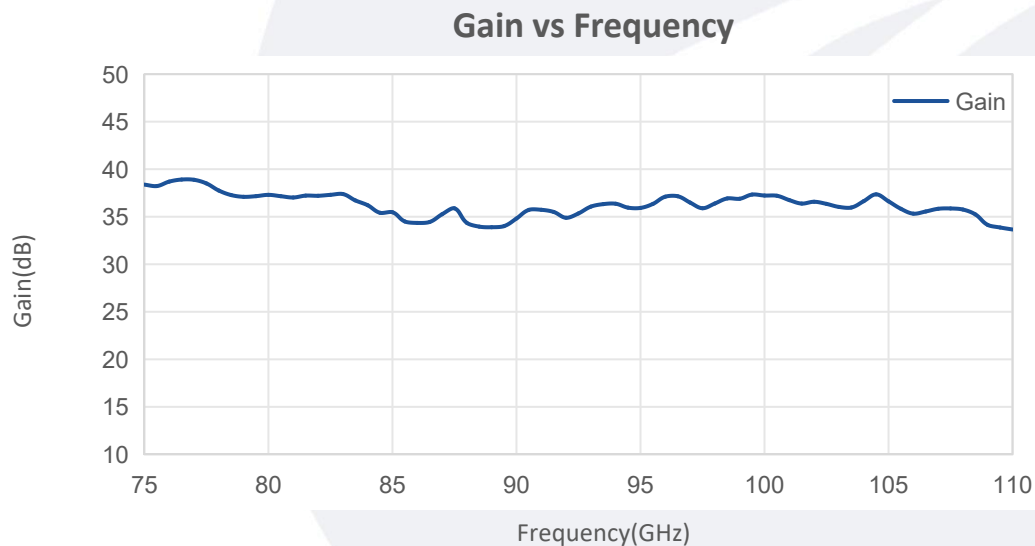
### Environmental Conditions:

| Parameter                       | Min                                                 | Typ | Max | Units |
|---------------------------------|-----------------------------------------------------|-----|-----|-------|
| Operating Temperature           | -10                                                 |     | +65 | °C    |
| Non-operating Temperature       | -45                                                 |     | +85 | °C    |
| Relative humidity               |                                                     | 95  |     | %     |
| Altitude                        | 10,000                                              |     |     | feet  |
| Shock / Vibration(MIL-STD-810F) | 25g rms (15 degree 2KHz) endurance, 1 hour per axis |     |     |       |
| hock(non operating)             | 20G for 11msc half sin wave,3 axis both directions  |     |     |       |

### Ordering Information:

| Base Number         | Desciption                                                                 | Revision |
|---------------------|----------------------------------------------------------------------------|----------|
| TMLA-075110-3542-10 | Low Noise Amplifier,75-110GHz, Noise Figure:4.2dB, Gain:35dB,+12V DC,WR-10 | Rev.1.1  |

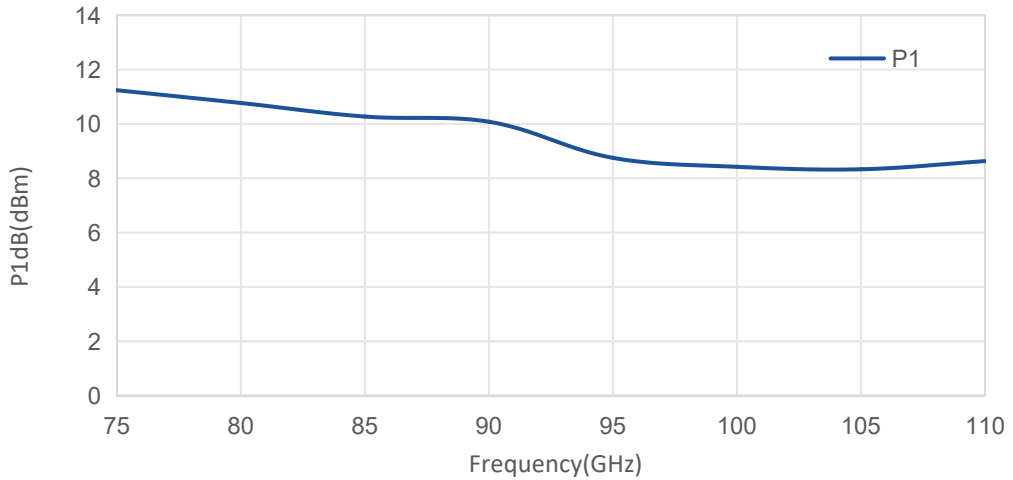
### Typical Performance Data:



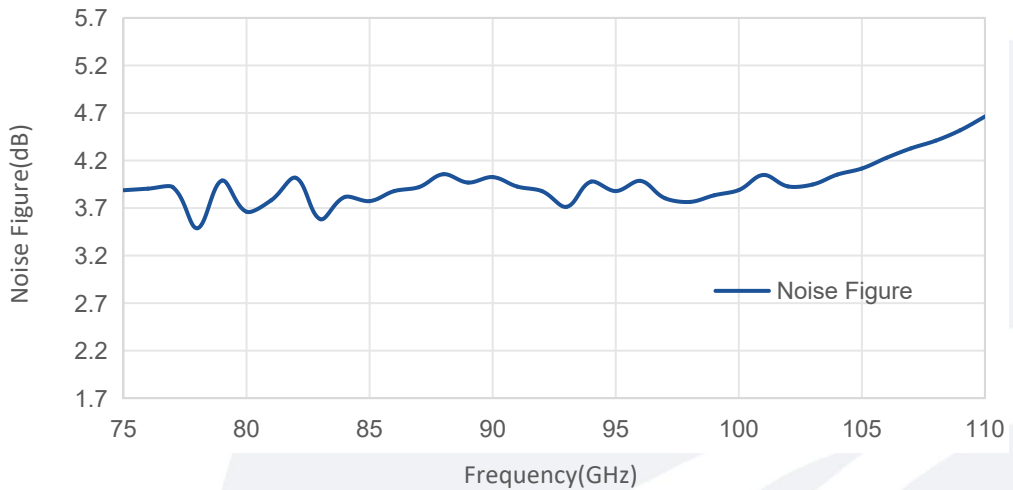
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

## Typical Performance Data:

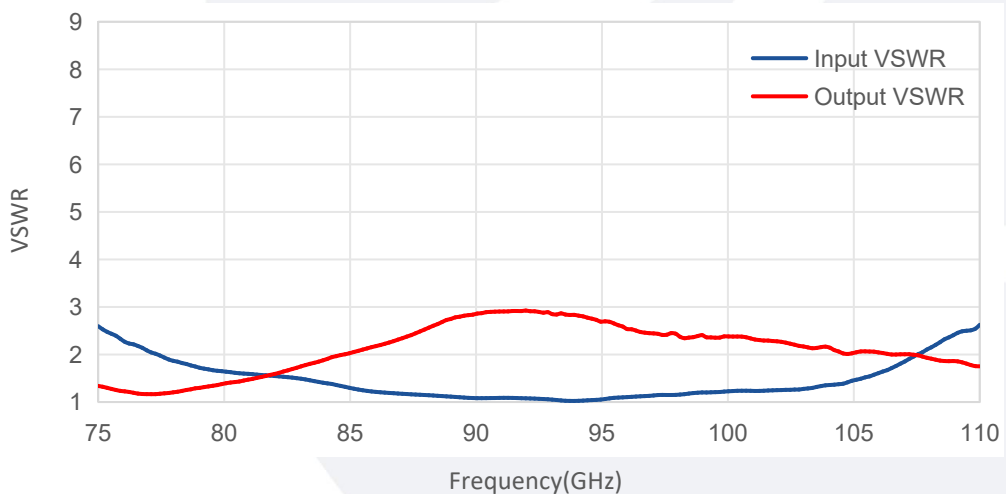
### P1dB vs Frequency



### Noise Figure vs Frequency



### 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.