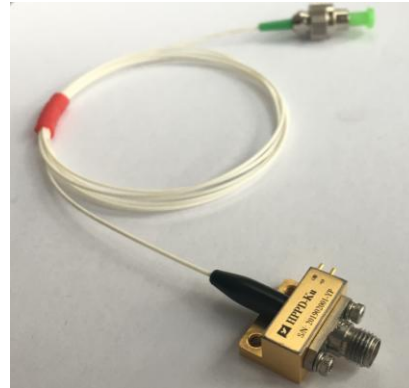


## HPPD-Ku High Speed InGaAs Photodetector

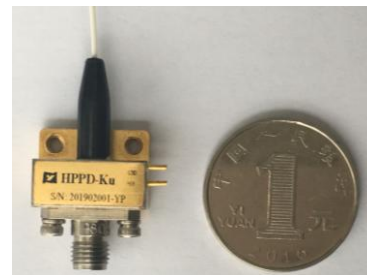
### ✧ Features

- Wide Bandwidth
- Incorporated Bias-T
- DC Coupled
- Hermetically Sealed, SMA Connector



### ✧ Applications

- High-speed Optical-fiber Communication
- Radar Information Processing
- Electronic Warfare
- High-speed Signal Test and Measurement



### ✧ Introduce of HPPD-Ku

The HPPD-Ku high-speed detector module is designed for both digital and analog applications. The module contains an InGaAs PIN photodiode which response wavelength covers 1250 to 1650 nm and necessary matching electronics.

HPPD-Ku can provide the bandwidth of 18 GHz. The module operates on +5V. It complies with a standard single-mode 9/125 $\mu$ m fiber input. The RF output port is an SMA compatible connector matched by 50 ohm impedance .

HPPD-Ku is hermetically sealed, and weighs less than 15 grams.

ROHS 2.0 certificated .

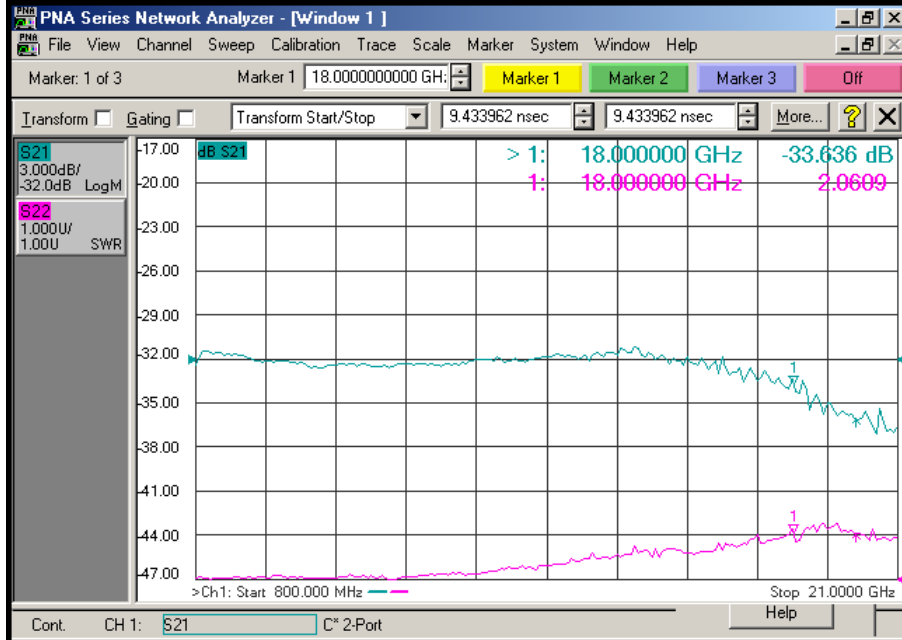
## ✧ Product Selection

| Typical & Absolute Maximum Rating |                  |           |            |      |
|-----------------------------------|------------------|-----------|------------|------|
| Parameter                         | Sym.             | Typ       | Rating     | Unit |
| Storage temperature range         | T <sub>STG</sub> | -45 ~ +85 | -55 ~ +100 | °C   |
| Operating case temperature range  | T <sub>C</sub>   | 25        | -40 ~ +85  | °C   |
| Bias Voltage                      | V <sub>R</sub>   | 5         | +5 ~ +9    | V    |
| Optical Input Power               | P <sub>in</sub>  | +10       | +17        | dBm  |
| Burn-out Optical Power            | P <sub>B</sub>   | -         | +20        | dBm  |
| Lead soldering temperature        | T <sub>p</sub>   | 280 (10s) | 330 (10s)  | °C   |

| Electrical / Optical Characteristics ( TC = 22 ± 3 °C ) |                  |   |                  |        |     |
|---|------------------|---|------------------|--------|-----|
| Parameter   | Sym              | Test Condition                              | Parameter Values | Unit   |     |
| Wavelength Range  | λ                | —   | 1000~1650        | nm     |     |
| Frequency Range   | —                | —   | Ku-Band          | —      |     |
| Small Signal Bandwidth                                  | f-3dB            | TC = 22 ± 3°C                               | 0.8~18           | GHz    |     |
| Responsivity  | Re               | V <sub>R</sub> ,<br>P <sub>in</sub> =1mW    | λ = 1310nm       | ≥ 0.85 | A/W |
|   |                  |   | λ = 1550nm       | ≥ 0.8  |     |
| Amplitude Flatness                                      | A                | TC = -40~+85 °C                             | ≤ ±1.5           | dB     |     |
| Output VSWR   | VSWR             | —   | ≤ 2.2            | —      |     |
| Bias Voltage  | V <sub>R</sub>   | —   | +5               | V      |     |
| RF Connector  | —                | —   | SMA              | —      |     |
| Saturation Optical Power                                | P <sub>s</sub>   | V <sub>R</sub> , λ = 1550nm<br>AC Modulated | +17              | dBm    |     |
| Dark Current  | I <sub>d</sub>   | V <sub>R</sub>                              | ≤ 10             | nA     |     |
| Saturation RF Output Power                              | P <sub>out</sub> | —   | -10              | dBm    |     |
| Output Impedance  | R <sub>L</sub>   | —   | 50               | Ω      |     |

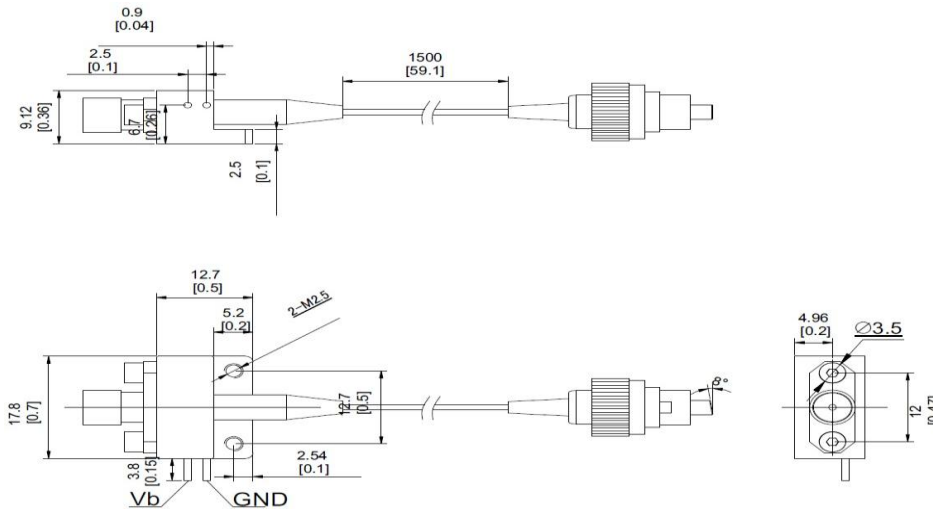
✧ Typical Response Curves

( $V_R$ ,  $\lambda=1550nm$ ,  $TC =25\text{ }^\circ C$ ,  $Pin=0dBm$ )



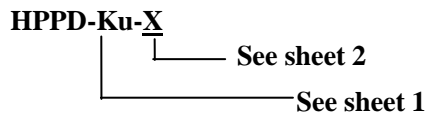
(Fig.1 Ku-Band Photodetector Frequency Response)

✧ Dimension and Pins (Unit: inch)



RF Connector: SMA

## ✧ Ordering Information



Sheet 1:

| Code | Analog Bandwidth |
|------|------------------|
| Ku   | 0.8 ~ 18 GHz     |

Sheet 2:

| Code | Connector Type | Remark                             |
|------|----------------|------------------------------------|
| N    | No Connector   | Single-mode 9/125 μm fiber pigtail |
| A    | FC/APC         |                                    |
| P    | FC/PC          |                                    |

## ✧ Precautions

The fiber bending radius no less than 20mm for avoiding fiber damaged .

Be sure the fiber coupling facet is clean before connecting it to opto-circuit .

The suitable ESD protection is required in storage, transportation and using .