

High-Speed Detector Series RD4020

Module Introduction and Product Features

To meet the demand of domestic customers for the full localization of high-speed detectors with amplification, Fiberwdm has launched a product with a bandwidth exceeding 20GHz. This series of high-speed detectors comes with built-in amplification and features extremely low noise. It can be used in high-speed communication systems and femtosecond laser system testing, making it a cost-effective, fully localized product. Fiberwdm has independently developed a linear power supply, which can fully meet the needs of high-speed detectors in scientific research applications.

Product Appearance



Figure 2-1: Appearance of the Detector Module (Left)

Performance Parameters

Model	RD4020
Wavelength Range	1000nm-1650nm
3dB Cut-off Bandwidth	20GHz
Conversion Gain	700V/W
Saturation Optical Power	10 mW
Rise time(10%~90%)	<20ps
Typical Max. Responsivity	>0.7A/W @1550nm
Output Reflection Coefficient(S22)	<-11dB

Amplitude Flatness	<±2dB
Maxim Output	0.5V
Incident Power (Max)	1mW
Detector Material/Type	InGaAs/PIN
Operating Temperature	-40℃~85℃
Optical Input	FC/PC or FC/APC
Electrical Output	SMA or 2.92mm
Power Supply Requirement	+12V/100mA

Figure 3-1 Summary of Electrical Performance

Notes:

Do not exceed 1mW for the maximum optical input power of the PD.

If the input is DC light, the optical power measured by the power meter is equal to the maximum optical power.

If the input is other types of light (e.g., pulsed light), the maximum optical power is calculated as the average optical power divided by the duty cycle. For example:

If the average optical power is 1mW and the duty cycle is 0.1%, the maximum optical power is 1W.

If the input is a square wave with a 50% duty cycle, the maximum optical power is 2mW.

If you are unsure whether the optical power will damage the detector, it is recommended to add an attenuator before the laser light enters the PD. First, minimize the light intensity, then observe the oscilloscope waveform, and gradually increase the optical power. The optimal condition is that the signal amplitude displayed on the oscilloscope does not exceed 500mVpp.



Figure 3-2 RD4020 Pulse Response Curve

High-speed detector mechanical dimension drawing

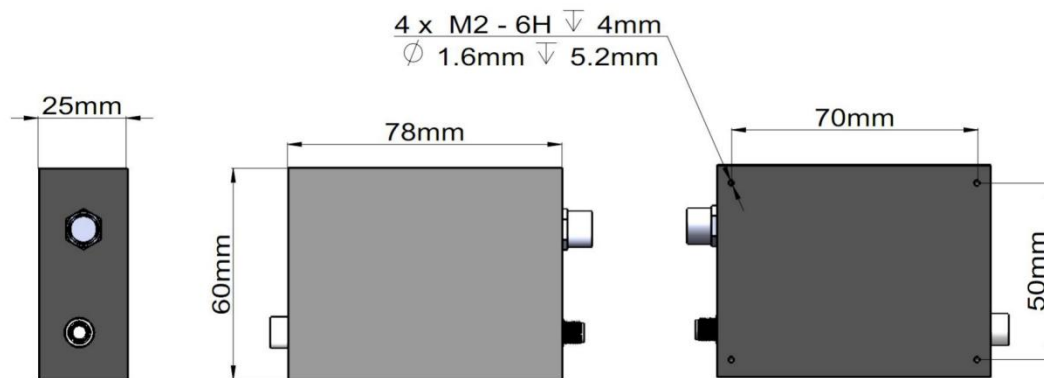


Figure 4-1 Mechanical dimensions diagram of the high-speed detector module

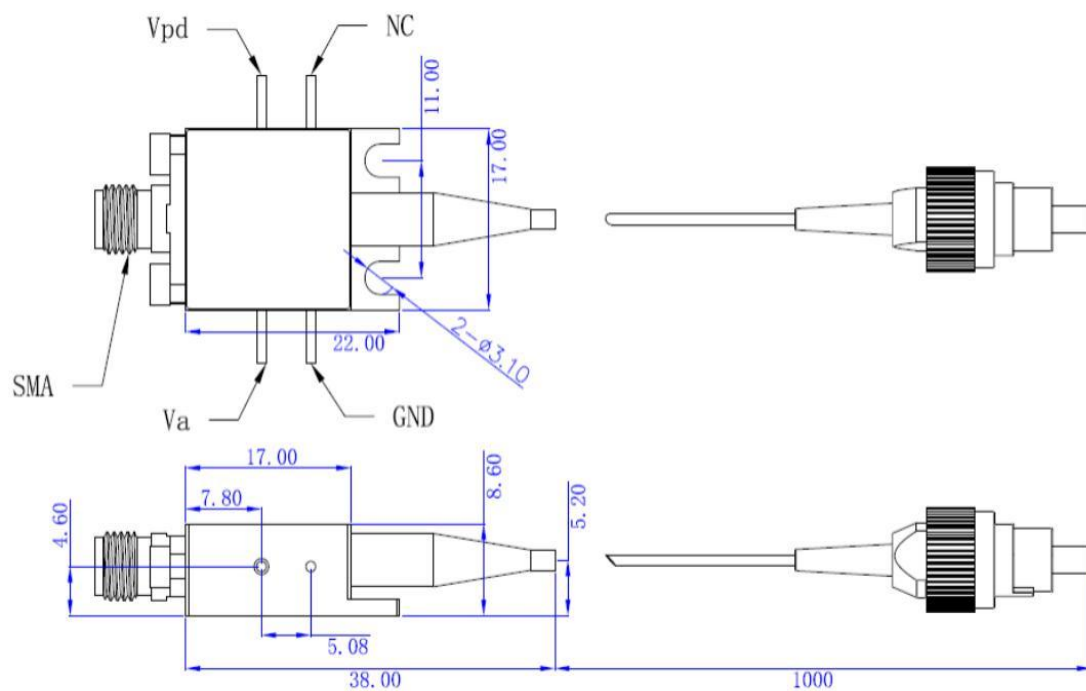


Figure 4-2 Mechanical dimensions of high-speed PD