

ROF InGaAs free-running single-photon detector

Key Advantage

- High detection efficiency
- Low dark count rate
- Low ask jitter
- Free-running operation
- TDC function (Optional)

Typical Application

- Laser ranging/LiDAR
- Fluorescence lifetime detection
- Quantum Key Distribution/Quantum optics
- Single photon source calibration
- Photoexcitation detection



This product is a compact near infrared free running single photon detector. The core device adopts InGaAs/InP with domestic independent intellectual property rights. Compared with similar products, APD has advanced technical indicators, reliability and integration, and can be used for asynchronous low light detection such as LiDAR and fluorescence lifetime detection. Applications provide cost-effective solutions.

This product uses a negative feedback APD to achieve fast avalanche quenching and low electronic noise, high detection efficiency and low dark count by optimizing the electronics and thermal design. Among them, the maximum detector efficiency of 1550nm single photon is > 35%; At this time, the time jitter can be as low as 80ps; Detector efficiency. At 15%, the minimum dark count is 500 CPS, and the minimum post pulse is 1% @ dead time 5 μ m; Saturation counting rate up to 4MCps @ dead time 250ns. In addition, for specific application scenarios, support bias, screening threshold, dead time and other parameters of the user configuration function to strengthen the detection efficiency, saturation count rate and other specific indicators; Support time digital conversion (TDC) function can be determined. To obtain time counting data, support free running or external trigger gating. Two operating modes are available.

Technical Parameters	Technical index	
	High-end version	Standard edition
Product Model	QCD600B-H	QCD600B-S
Spectrum Response	900m~1700m	
Detection Efficiency	35%	25%
Dark Count Rate (Typical Value)	4Kcps	2Kcps
Post-pulse Probability@ Dead Time 5PS	10%	5%
Time Jitter	100ps	150ps
Dead Time Regulation Cluster	0.1Ms~60us	
Output Signal Level	LVTTTL	
Output Signal Pulse Width	15ns	
Output Interface	SMA	
The Optical Fiber is Synchronized	MMF62.5	
Fiber Interface	FC/UPC	
Start-up Cooling Time	<3min	
TDC Accuracy (Customizable)	10ns,0.1ns	
Input Voltage	15V	
Size	116mmX107.5mm X80mm	