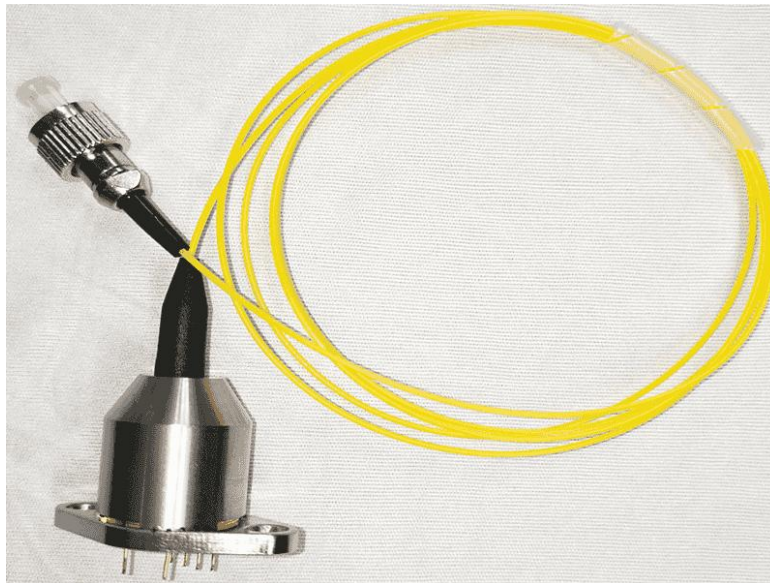


900-1700nm InGaAs Geiger-mode avalanche photodiode with built-in TEC cooling



● Product Description

InGaAs avalanche photodiode (APD) is a dedicated device for short-wave near-infrared single photon detection. It can meet the technical requirements of quantum communication, weak light detection and other fields for high-efficiency and low-noise single photon detection, and realize single photon detection of 0.9 ~ 1.7 μ m wavelength.

● Product features

Spectral response range 0.9~1.7 μ m、 High detection efficiency, low dark count rate、 6 pin TO8

● Part Number

MP-GMD-B-I-9N-1

● Application area

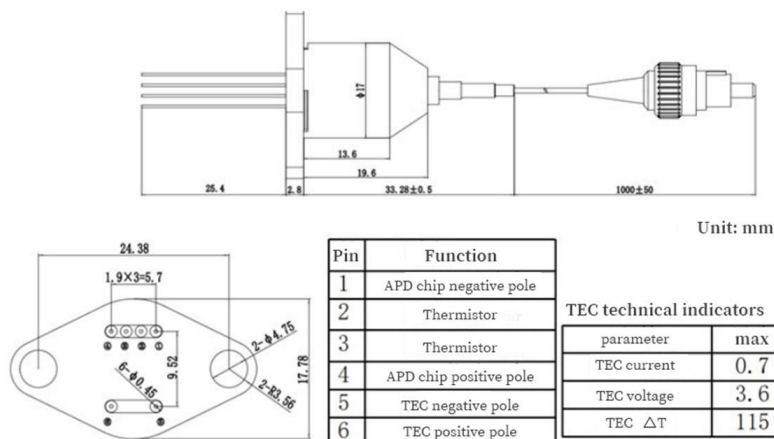
Weak light detection、 Quantum secure communication、 Biomedical

● Core parameters

Wavelength	Responsivity
0.9-1.7 μ m	0.85A/W@1550nm

● Dimension Drawing

Package shape, dimensions and pin definition TO8 (pigtail package)





● General Parameters

Linear mode parameters

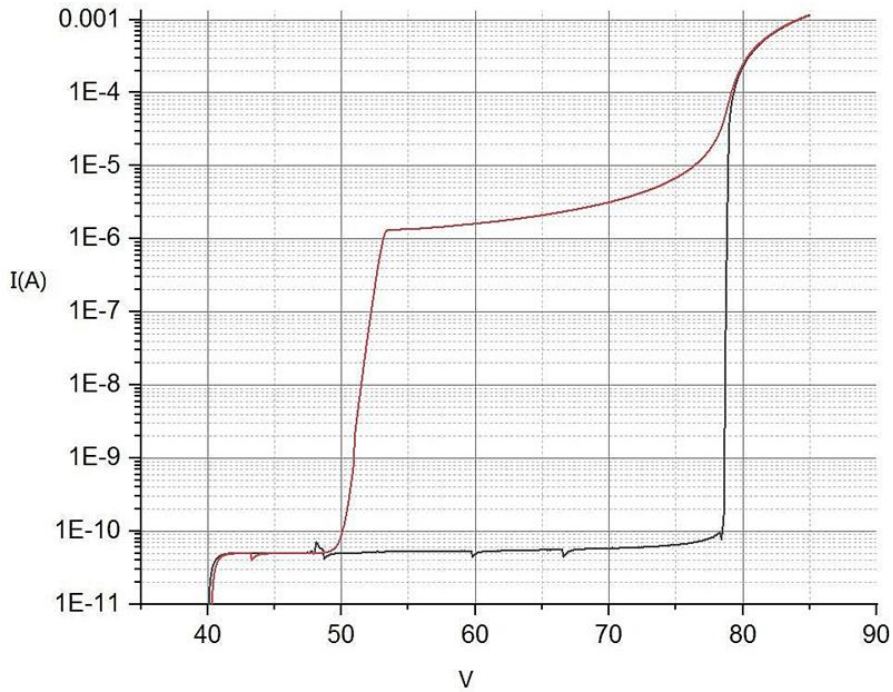
Parameter	Symbol	Unit	Test conditions	Min.	Typical	Max.
Reverse breakdown voltage	V_{BR}	V	$22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, $I_D = 10\mu\text{A}$	60	80	90
Responsivity	R_e	A/W	$22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, $\lambda = 1550\text{nm}$, $M = 1$	0.8	0.85	
Dark current	I_D	nA	$22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, $M = 10$		0.1	0.3
Capacitance	C	pF	$22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, $M = 10$, $f = 1\text{MHz}$			0.25
Breakdown voltage temperature coefficient	η	V/K	$-40^{\circ}\text{C} \sim 80^{\circ}\text{C}$, $I_D = 10\mu\text{A}$			0.15

Geiger mode parameters

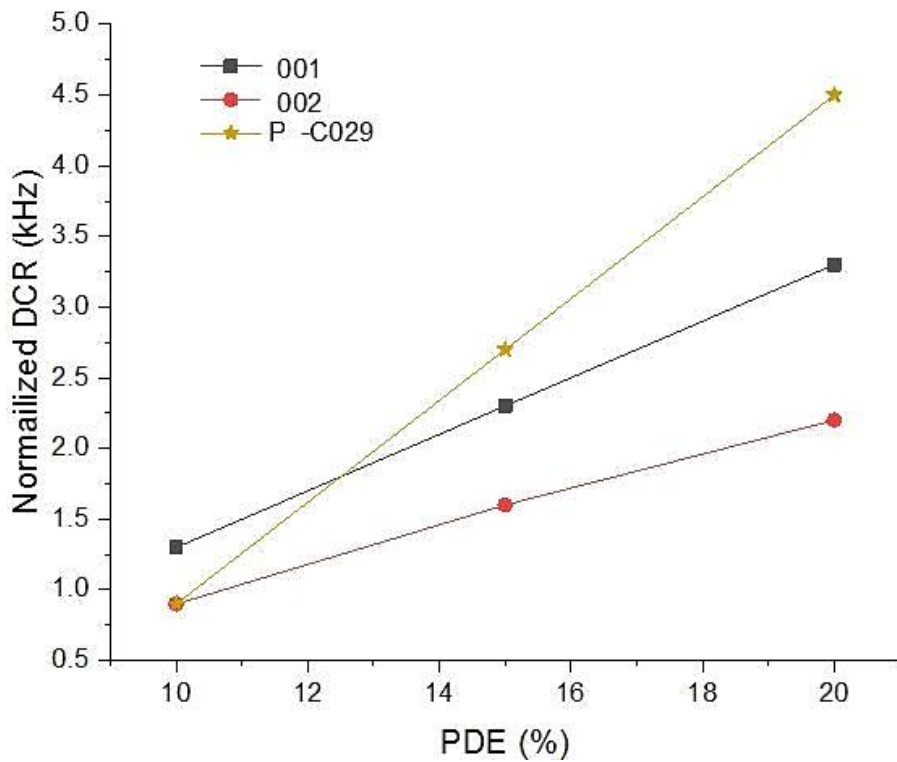
Parameter	Unit	Test conditions	Min.	Typical	Max.
Single photon detection efficiency PDE	%	-45°C , $\lambda = 1550\text{nm}$, 0.1ph/pulse, Poisson distribution single photon source	20	-	
Dark count rate DCR	kHz	-45°C , 1ns gate width, 2MHz gated repetition rate, 1MHz optical repetition rate, PDE=20%	-	-	20*
After pulse probability APP		-45°C , 1ns gate width, 2MHz gated repetition rate, 1MHz optical repetition rate, PDE=20%	-	-	1×10^{-3}
Time jitter T_j	ps	-45°C , 1ns gate width, 2MHz gated repetition rate, PDE=20%	-	-	100

* Different grades and specifications are available

Room temperature IV curve

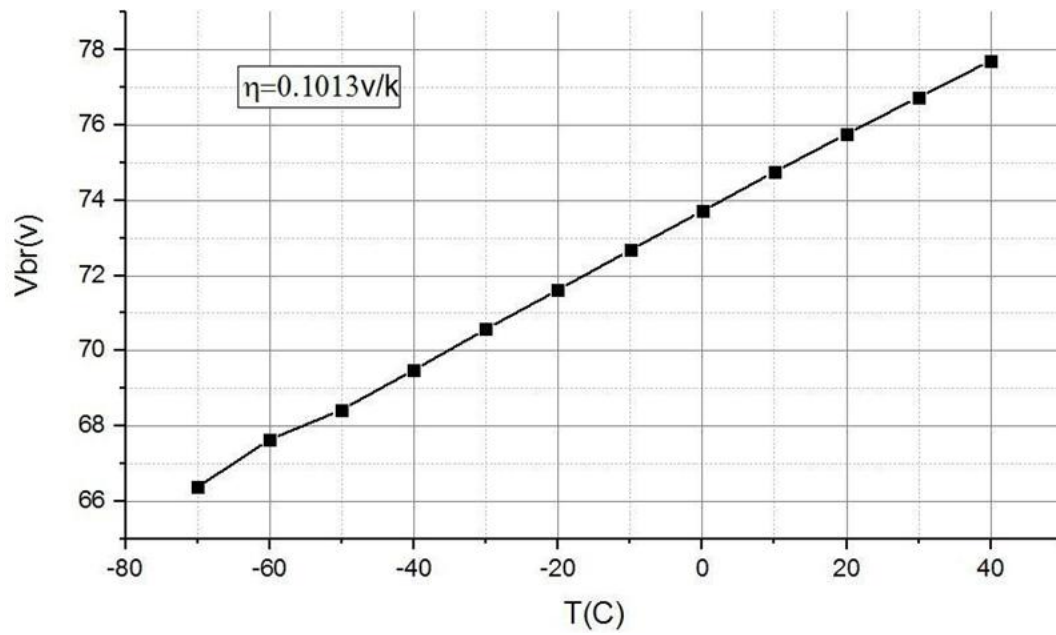


DCR-PDE(-45°C, fg=2MHz)





Temperature coefficient



Capacitor voltage

