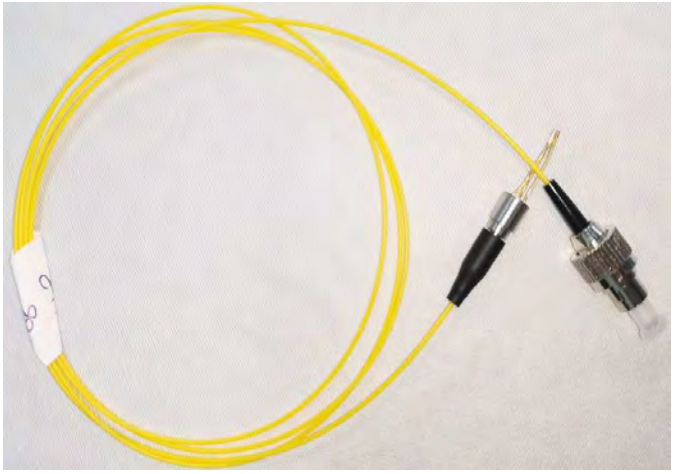
InGaAs Single-Photon Avalanche Diodes (SPADs)



Description:

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

Features:

- Spectral response range: 0.9 ~ 1.7 μ m
- High detection efficiency and low dark counting rate
- 3 pin TO46

Optional:

- Weak light detection
- Quantum secure communication
- Biomedicine

Linear mode parameters:

Product model				IGA-APD-GM104-R		
parameters	Symbol	unit	Test conditions	min	typical	max
Reverse breakdown voltage	VBR	V	22°C±3°C ID =10μA	60	80	90
Reponsivity	Re	A/W	22°C±3°C, λ=1550nm, M=1	0.8	0.85	
Dark current	ID	nA	22°C±3°C, M=10		0.1	0.3
Capacitance	C	PF	22°C±3°C, M=10, f=1MHz			0.25
Breakdown voltage temperature coefficient	η	V/K	-40°C~80°C ID=10μA			0.15

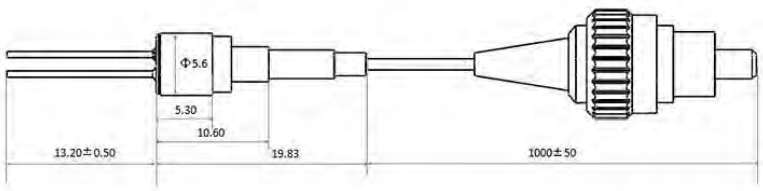
Geiger mode parameters:

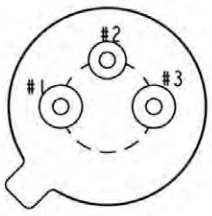
parameters	unit	Test conditions	min	typical	max
Single Photon Detection Efficiency (PDE)	%	-45°C, λ =1550nm,0.1ph/pulse			
		Poisson distribution single photon source	20		
Dack count rate (DCR)	kHz	-45°C, 1ns gate width, 2MHz Gated repetition frequency,			20*
After pulse probability (APP)		1MHz Optical repetition frequency, PDE=20%			
Time jitter (Tj)	ps	-45°C, 1ns gate width, 2MHz Gated repetition frequency,			1×10^{-3}
		1MHz Optical repetition frequency, PDE=20% -45°C, 1ns gate width, 2MHz Gated repetition frequency, PDE=20%			100

Dimensions and Pin definitions:

TO46 (pigtail package)

Unit: mm





PIN #	Definition
1	P(anode)
2	Ground
3	N(cathode)