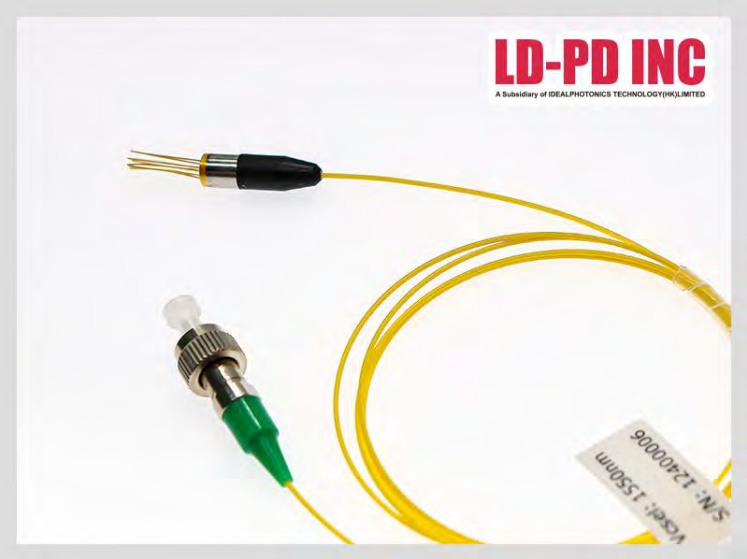
50um InGaAs APD Pigtailed Photodiodes



Description

The PL-1700-IGA-AR0050 -FSA is a 50um InGaAs APD housed in a hermetic 3 pin coaxial package. The APD is coupled to a singlemodefiber pigtail. The low noise, overload tolerant LAPD 3050 coax APD makes the devices ideal for OTDRs, line receivers and any other light level detection/ signal transmission application.Devices can be pigtailed with any size optical fiber that is compatible with its active area size. Pigtails range in core size from 3um to 100 micron. One meter is the standard length, but any length or connector termination may be specified. Pigtails may be terminated with ST, FC, SC and LC connectors with either PC or APC polish.

Features

- Top illumination planar APD
- Low Dark Current
- High Responsivity
- High Reliability

Application

- 2.5Gbps testing module
- Optical testing system

E/O Characteristics

Electrical/Optical Characteristics(Tsub=25°C, CW bias unless stated otherwise)

Parameters	Sym.	Test conditions	Min	Typ	Unit
Response Spectrum	λ	-	900~1700		nm
Active diameter	ϕ	-		50	um
Reponsivity		λ=1.55μm,M=10,ϕe=1μw	8.5		A/W
Maximum multiplication gain		λ=1.55μm,ϕe=1μw	20		
Reverse breakdown voltage		D=100mA，ϕe=0	40	50	V
Punch-through voltage[1]	Vpt	λ=1.55μm,ϕe=1μw,M=1.1	20		V
Range of operation voltage[2]	Vop	λ=1.55μm,ϕe=1μw	18	20	V
Dark current	ID	M=10，ϕe=0		2	nA
Capacitance[3]	C	M=10，ϕe=0	0.5		PF
-3dB bandwidth	BW	VR=5V,f0=100MHz，RL=50D	1.8		GHZ
Operating voltage temperature coefficient	δ	Tc=-40～+85°C		0.15	V/°C
Operating Voltage	VR	-			V

Note: 1 .operation voltage (Vop)＞Punch-through voltage（VPt）;

2 Range of operation voltage: VBR- VP;

3 Capacitance for TO package is 0.4PF,for pigtail package is0.5Pf.

The typical characteristical curve

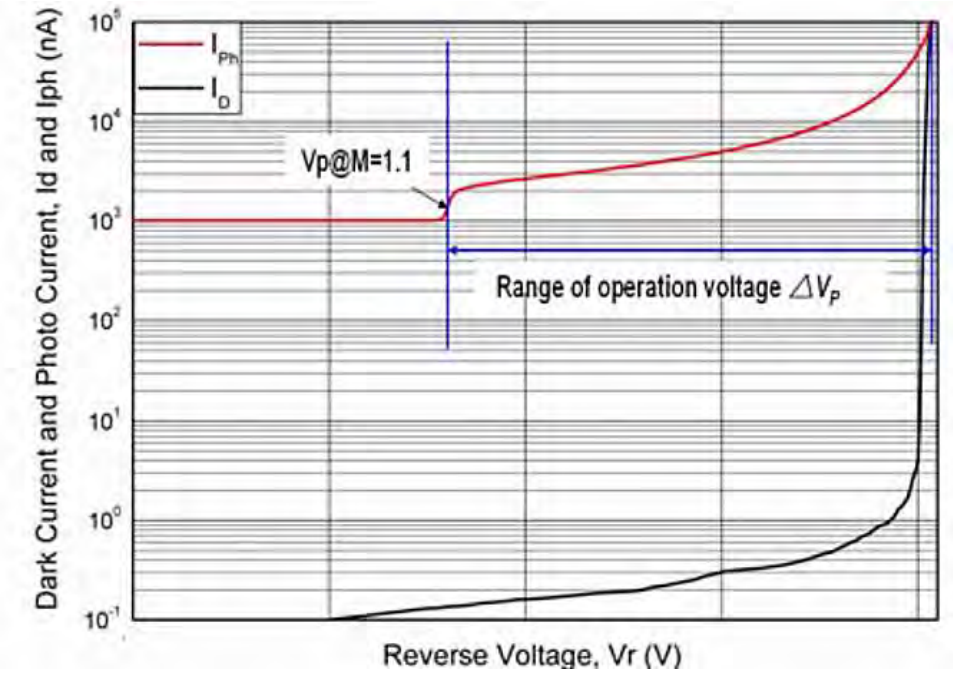


Figure1 Photo Current and Dark Current vs. Reverse Voltage

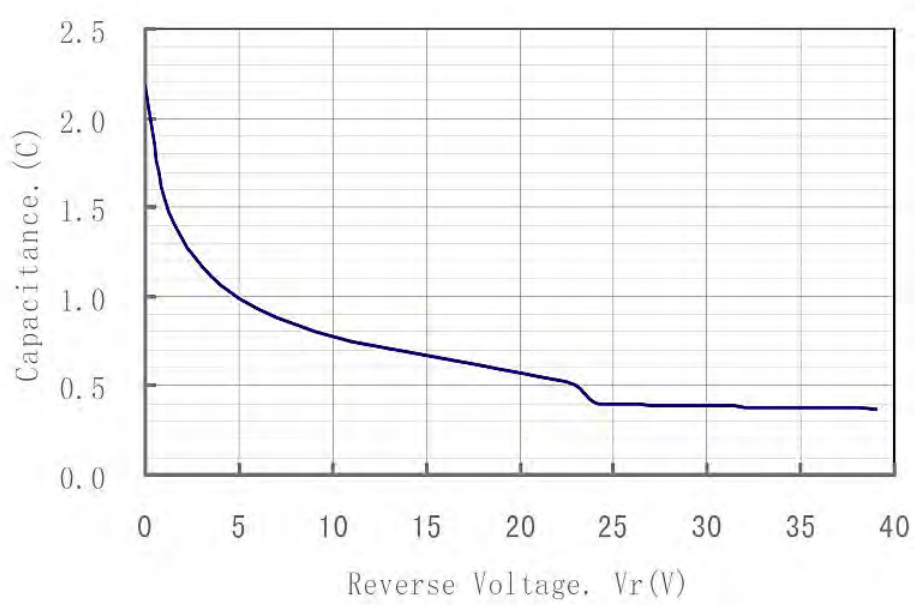


Figure2 Capacitance vs. Reverse Voltage

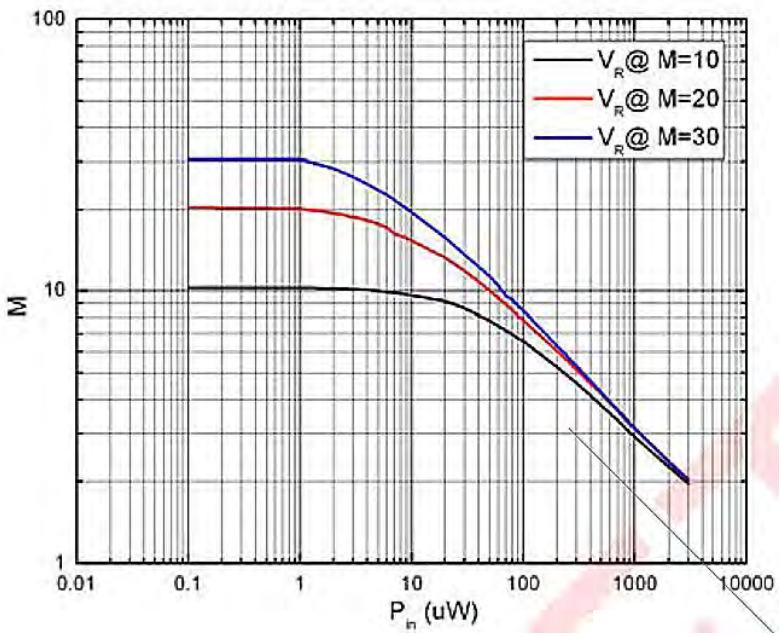


Figure3 Multiplication Factor vs. Input Optical Power

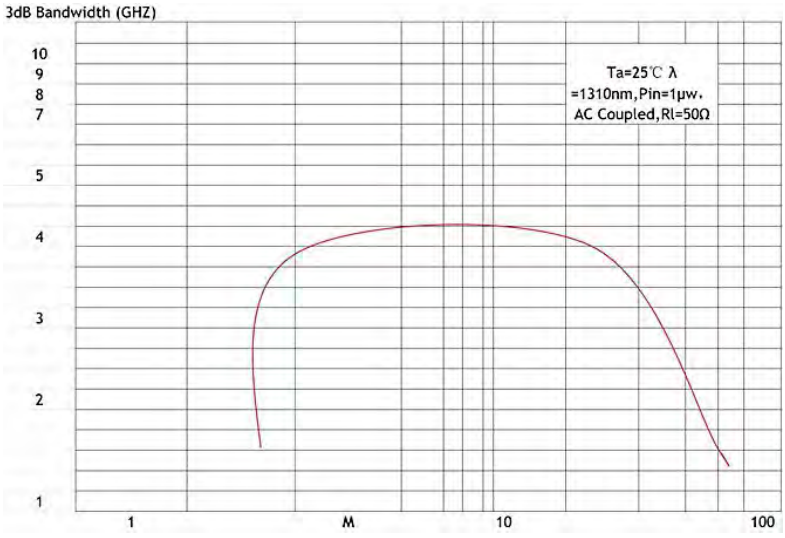
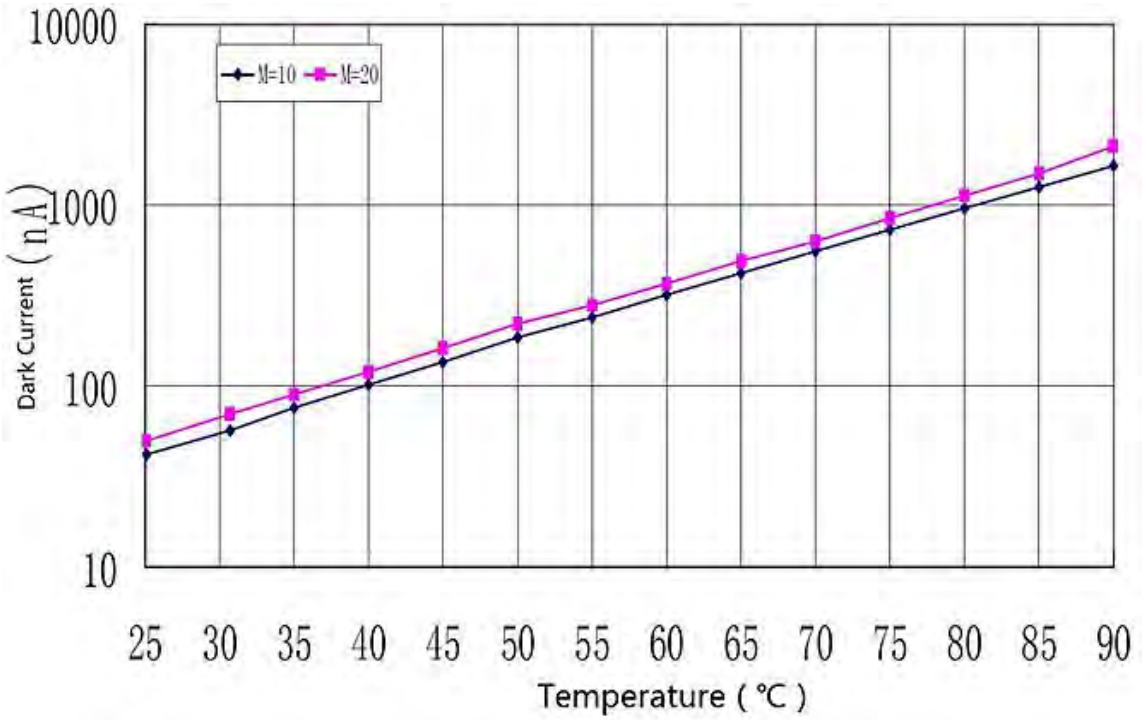


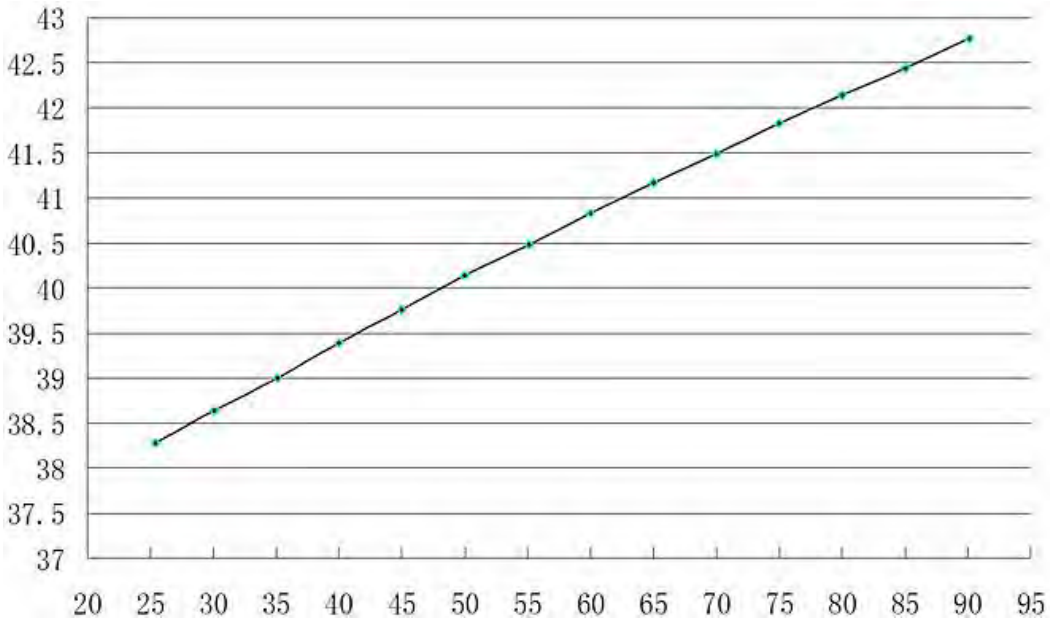
Figure 4 Bandwidth vs. Multiplication Factor

Temperature vs Dark Current Curve

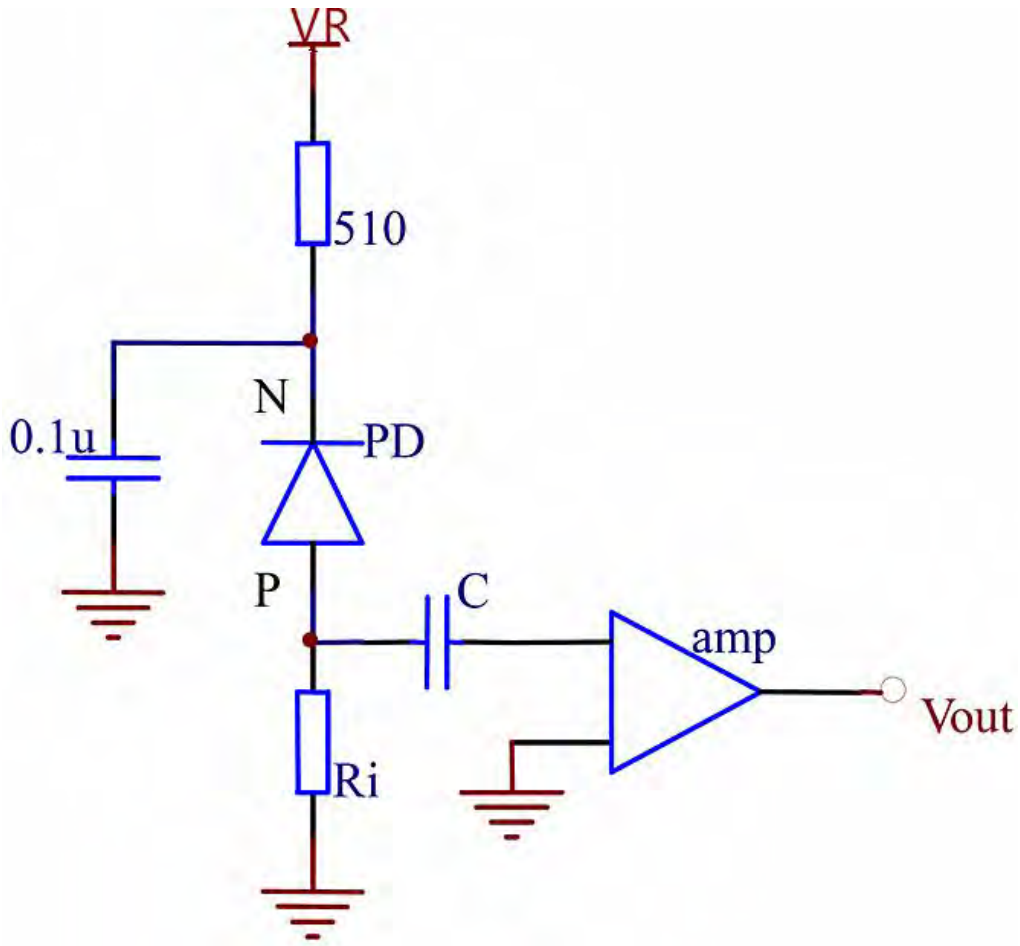


Temperature vs Breakdown voltage Curve

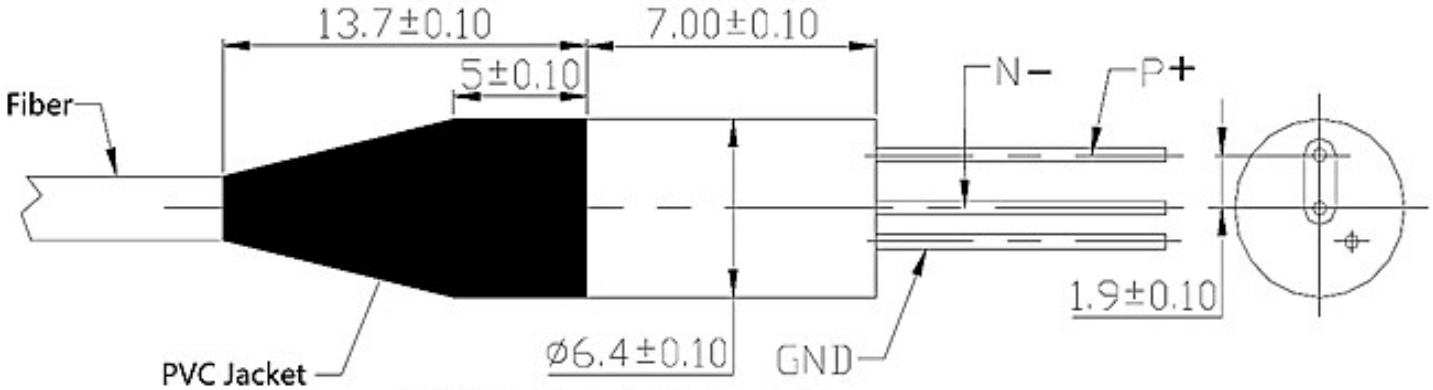
Break down Voltage (V)



Application electric circuit



Dimensions and Pin definitions



LD-PD'S "Bullet" Design Package



Bottom View

1	P +
2	N-
3	GND

SMF-28E Fiber Nominal Characteristics and Tolerances

Parameters	Specification
Cut off wavelength	920nm
Max Attenuation	2.1dB/km
Cladding Diameter	125um
Coating Diameter	250um
Core Cladding Concentricity	⩽0.5um
Mode Field diameter	9.5um

Absolute Maximum Ratings

Item	Symbol	Unit	Min	Typ	Max	Testing Condition
Case Temperature	TOP	℃	-5	25	70	
Operating Voltage	VR	V	39.6	40	59.04	0.99 Vbr
Power Consumption	Pc	mw	40	50	80	
Forward Current	If	mA		10		
Lead Soldering time		S		-	10s	260℃
Store Temperature	TSTG	℃	-40	-	+85	2000hr
Operating Temperature	TOP	℃	-55	-	+100	
Relative Humidity	RH		5%	-	95%	Noncondensing

Ordering Info

PL-□□□□-☆-AR▽-XX

□□□□：Cut off Wavelength
400:400nm
900:900nm
1700:1700nm
2100:2100nm
2400:2400nm
2700:2700nm

☆ ：Material
IG：InGaAs
Si：Si

▽：Active Area
0050：50um
1：1mm
2：2mm
….
5:5mm

XX: Package/Fiber and Connector Type
TO:TO46 Package
FPG:FC/PC Plugged
FSA=SMF-28E Fiber coupled+ FC/APC
FSP=SMF-28E Fiber coupled + FC/PC
FPP=PM Fiber Fiber coupled + FC/PC
FPA=PM Fiber Fiber coupled + FC/APC

User Safety

Safety and Operating Considerations

This device operates under reverse bias voltage, and the polarity of the device can’ t be reversed. Operating the Photodiode outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with this component cannot exceed maximum peak optical power. ESD PROTECTION—Electrostatic discharge (ESD) is the primary cause of unexpected laser diode failure. Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces, and rigorous antistatic techniques when handling Photodiodes.