Pigtailed PD for analog application
TAP4NN3 series



■ Long wavelength InGaAs PIN-PD

■ Detection wavelength range of 1.1μm to 1.6μm

■ SMF or MMF Pigtailed

■ SC, FC, ST, or LC Connector

Family Model

TAP4NN3 **TZP4NN3** **TBP4NN3**

Features

- InGaAs long wavelength PIN photodiode
- Operation at 1310nm & 1550nm
- High responsivity, low dark current and low capacitance
- Operating temperature ; -40℃ to +85℃
- Single-mode fiber or multimode fiber pigtailed with SC or FC connector

Description

The TxP4NN3 series is a reliable InGaAs PIN photodiode module pigtailed with SMF or MMF. The parts of pigtailed PD module – single-mode fiber, lens and photodiode - are actively aligned by high power YAG laser welding method. This packaging guarantees high detector responsivity and low deviation over a wide temperature range(0℃ to +70℃/-40℃ to +85℃), and provides high optical performance for ITU-T G.651 and G.652 standard optical fiber..

Applications

Used in telecommunication and data communication systems, from medium to high speed for intra-office, short-haul inter-office and long-haul inter-office applications.

- Analog application(for CATV Return Path-TAP4NN3, for CATV Forward Path-TZP4NN3, for Wireless fiber optic Repeater-TBP4NN3)
- SCM(Sub-Carrier Multiplexing) Transmission
- Subscriber loops
- Private optical networks

Absolute Maximum Ratings

Parameters	Symbol	Unit	Min.	Max.	Remarks
Ambient Operating Temperature	T_{op}	℃	-40	85	Outdoor use
Storage Temperature	T_{stg}	℃	-40	85	
Reverse Voltage	V_{RP}	V	-	15/20/	
Reverse Current	I_{RP}	mA	-	3/1 /	
Forward Current	I_{FL}	mA	-	50/2/	
Lead Soldering Temp./Time		℃/sec		260/10	

Electrical & Optical Characteristics

(T_{op} = 25℃)

Parameters	Symbol	Condition	Unit	Min.	Typ.	Max.	Remark
Detection range	λ	V_R=5V, R>0.75 R > 0.65	μm	1.1		1.6	
Responsivity	R	V_R=5V,λ=1.3μm V_R=5V, λ=1.5μm	A/W	0.80 0.85	0.85 0.90		
Dark Current	I_D	V_R=5V	nA			1.0	
Cut-off Frequency	f_c	-3dB, V_R=5V	GHz	2/3			R_L=50Ω
Reverse Breakdown Voltage	V_{BD}	V_R=5V, I_{RD}=1μA	V	25/0			
Capacitance	C	V_R=5V, f=1MHz	pF			0.6	
Second-Order Distortion	IMD2	V_R=12V, P_{AVG}=0dBm, OMI=0.4, Note1	dBc			-70	TAP4NN3[1)] TZP4NN3[2)] TBP4NN3[3)]
Third-Order Distortion	IMD3	Note 1	dBc			-75	TZP4NN3[2)] TBP4NN3[3)]
Back Reflection	IL		dB			-45	
Active Area Diameter	∅		μm		75/**70** 45		for 2GHz for 5GHz

Note1-1) TAP4NN3 : Two-tone test condition : f1=13MHz, f2=19MHz, f1±f2

Note1-2) TZP4NN3 : Two-tone test condition : f1=320MHz, f2=450MHz, f1±f2, λ=1550nm per channel

Note1-3) TBP4NN3 : same as the Note1-2

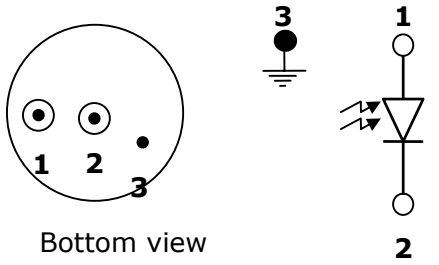
! Handling Caution

The Photo-diode can be damaged by overvoltage and current surges. Precautions should be taken for transient power supply.

This device is susceptible to damage as a result of electrostatic discharge(ESD). Take proper precautions during both handling and testing

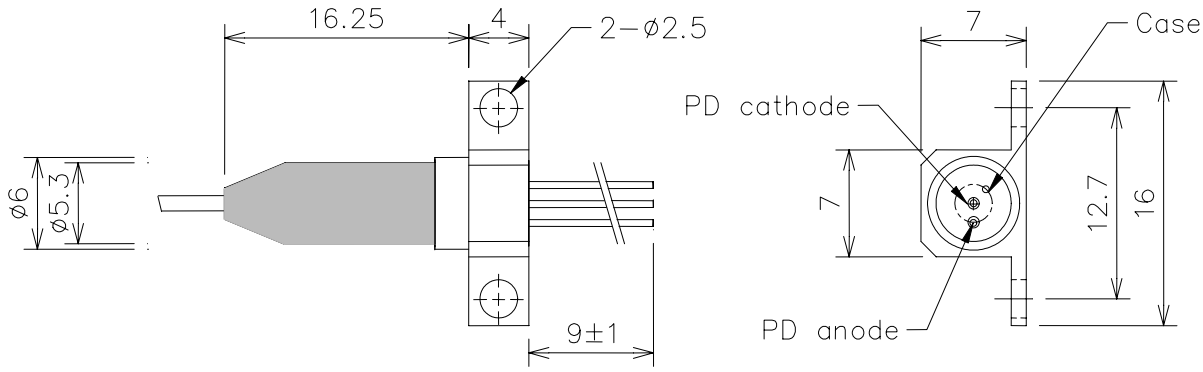
Pin Description

Pin No.	Symbol	Description
1	A_{PD}	PD anode
2	K_{PD}	PD cathode
3	GND	Case ground

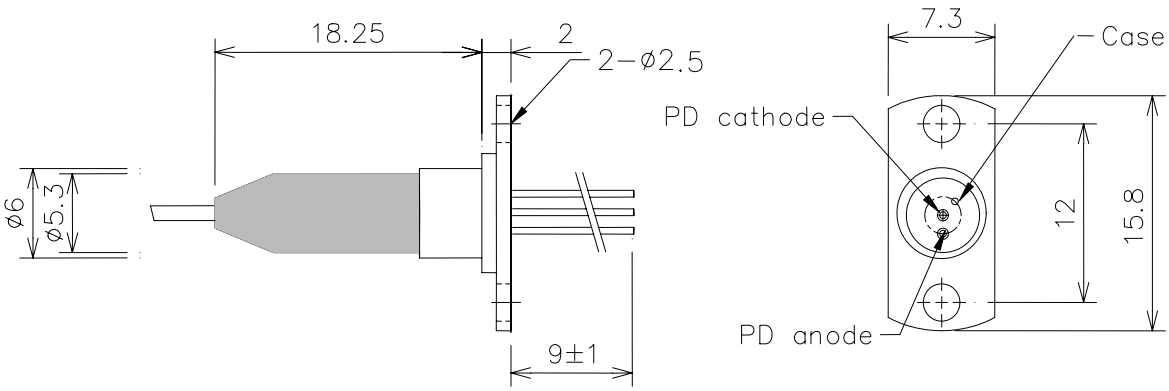


Outline Diagram

- **TAP4xx3-xxxH**



- **TAP4xx3-xxxV**



- **TAP4xx3-xxxN**

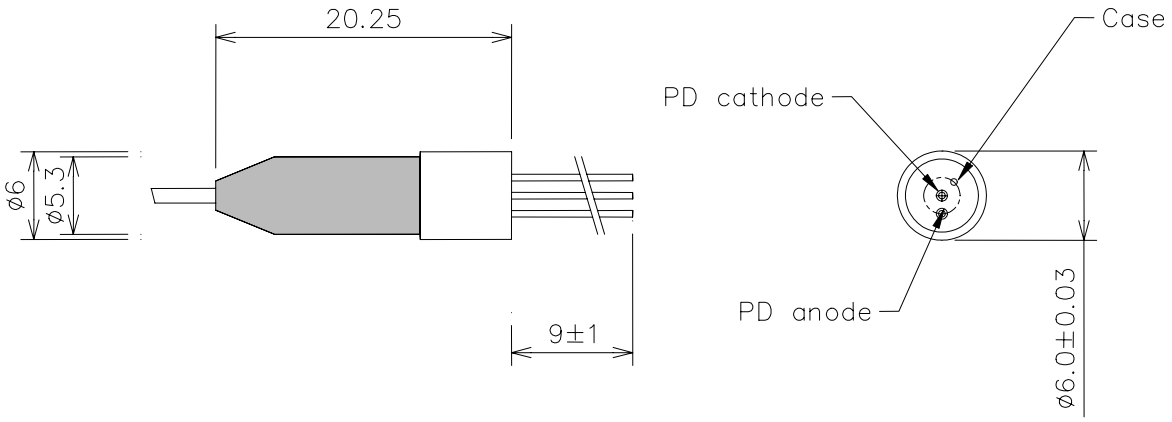


Fig.4 Pigtailed PD Package Dimensions [unit: mm]

Ordering Information

Company	Device Type		Wave-length	Data rate (PIN-TIA)	Volt. (TIA)	Pin		Temp. Range	Fiber	Connector	Flange
T	**A**	**P**	**4**	**N**	**N**	**3**	**-**	**I**	**S**	**N**	**H**
Teradian	**A**;PD for CATV Return path **Z**;PD for CATV Forward Path **B**;PD for wireless repeater	**P**;PIN **T**;PIN-TIA **A**;APD	**4**; 1.3/1.5 **8**; 850nm	**N**; None **0**; 51Mbps **1**;155Mbps **4**;622Mbps **8**;1.25Gbps **G**;2.5Gbps	**N**; None **3**;3.3V **5**;5V	**3**;3pin **4**;4pin (differential) **5**;5pin **6**;4pin (single ended)		**I**;Indoor Use (0~70℃) **O**;Outdoor Use (-40~85℃)	**S**;SMF **M**;MMF	**N**;None **S**;SC **F**;FC **T**;ST **L**;LC	**N**; None **V**; Vertical **H**; Horizontal

*Note 1 ;
- 220m with 62.5/125μm MMF @1.25Gbps
- 500m with 50/125μm MMF @1.25Gbps
- 200m with 62.5/125μm MMF @2.125Gbps

*Note 2 ; additional order information
- Connector type default is SC/PC and the default length of fiber is 1m

More Information

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