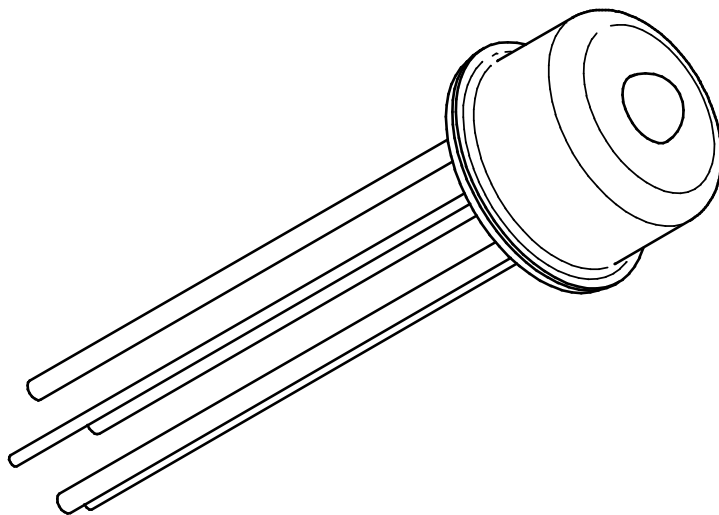


Wooriro Photo Diode

***WOORIRO 10Gbps APD TIA TO
SPECIFICATIONS***



Contents

General Description	3
Absolute Maximum Ratings	3
Electro-Optical Characteristics	4
Mechanical Dimension & Pin Layout	5
Other Requirements	6

General Description

The 10Gbps APD TIA TO is a low cost receiver module with a miniaturized size for using in the XFP/300pin MSA optical transceiver. It guarantees high sensitivity and its low deviation over an operating temperature range.

Features

- InGaAs APD chip for 10Gbps
- High gain $4k\Omega$ transimpedance pre-amplifier for 10Gbps
- Operation at 1270nm and 1620nm
- Differential data output
- High sensitivity: typ. -27dBm

Applications

- Digital fiber optic receiver in short, medium and long haul optical telecommunications transmission systems and in high speed optical data networks
- SONET
- Ethernet
- Fiber Channel

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
TIA supply voltage	V_{CC}	-0.5 to +4	V
APD supply voltage	V_{APD}	0 to V_{BR}	V
APD reverse current	I_{APD}	3	mA
Operating case temperature range	T_C	-40 to +85	°C
Storage temperature range	T_{STG}	-40 to +85	°C

Table 1. Absolute Maximum Ratings

Electro-Optical Characteristics

Inspection sheet shall be appended to products when they are delivered. Test report shall be submitted in papers and in electronic media. It shall contain the major in following items.

Optical Characteristics(Tc=25°C)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Responsivity	R	$\lambda = 1550\text{nm}$, M=1	0.65	0.75		A/W
Optical wavelength range	λ	-	1270		1620	nm
Sensitivity	P_S	9.95Gbps NRZ, PRBS= $2^{31}-1$, BER= 1×10^{-12} , M_{opt} ER=11.3dB, $\lambda = 1550\text{nm}$		-27	-26	dBm
Maximum overload	P_{MAX}	9.95Gbps NRZ, PRBS= $2^{31}-1$, BER= 1×10^{-12} , M_{opt} ER=11.3dB, $\lambda = 1550\text{nm}$	-5			dBm

Table 2. Optical Characteristics

Electrical Characteristics(Tc=25°C)

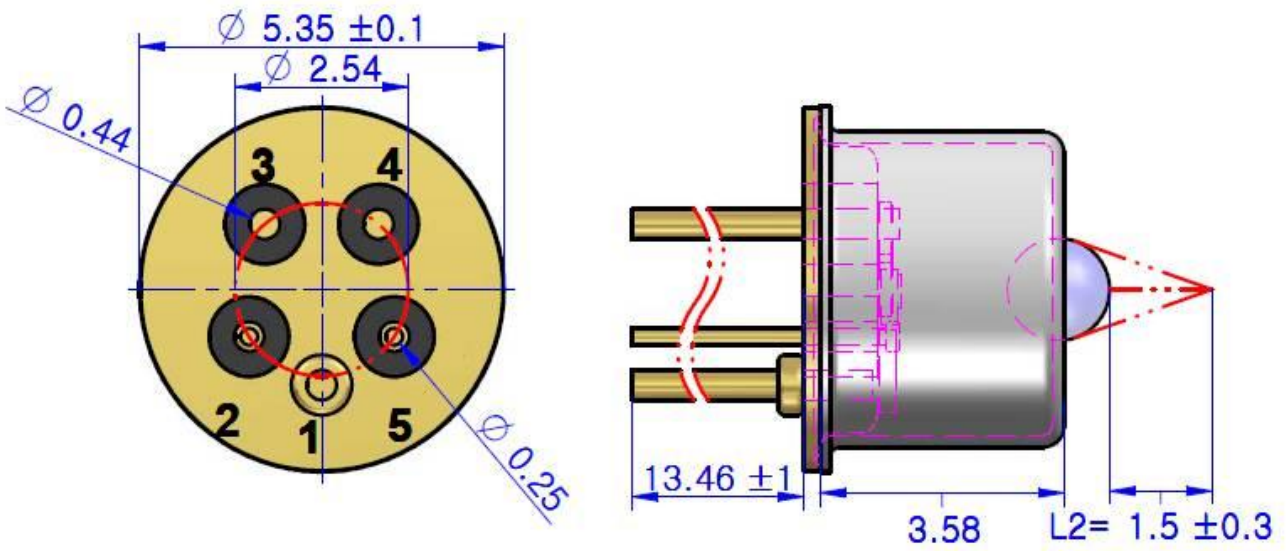
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
TIA supply voltage	V_{CC}	-	2.97		3.63	V
TIA supply current	I_{CC}	-	44	58	72	mA
Breakdown voltage	V_{BR}	Dark current, $I_d = 10\mu\text{A}$	25	30	40	V
Transimpedance	Z_T	Differential(50Ω on each output), $f = 100\text{MHz}$	2.4	4.0	6.0	KΩ
O/E bandwidth	F_{CH}	-3dB, M=9, Pin=-20dBm	7	8		GHz
Low cut-off frequency	F_{CL}	-		42	80	KHz
Maximum output voltage	V_{OUT}	Single-ended	-	-	500	mV _{p-p}
Output impedance	Z_O	Single-ended		50		Ω
Temperature coefficient of V_{BR}	δ	-	-	70	90	mV/°C

Table 3. Electrical Characteristics

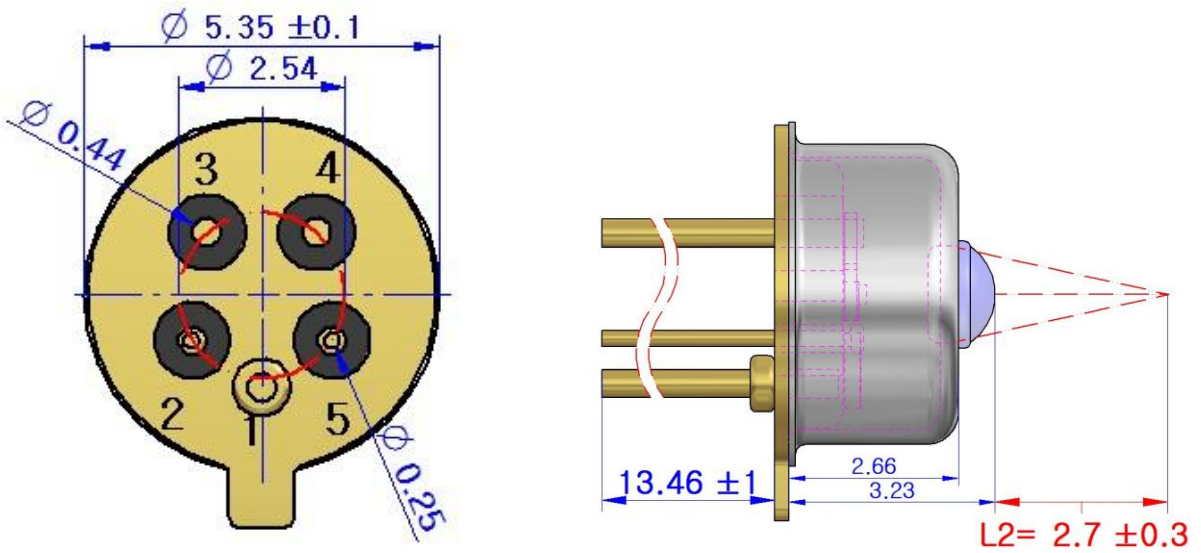
Mechanical Dimension & Pin Layout

Mechanical Dimension

(unit : mm)



Long Cap



Short Cap

Figure 1. Mechanical Dimension

Pin Configuration

No.	Symbol	I/O	Description
1	GND	I/O	Signal ground
2	Data P	O	Positive data output
3	V _{CC}	I	TIA Supply voltage
4	V _{APD}	I	APD bias voltage
5	Data N	O	Negative data output

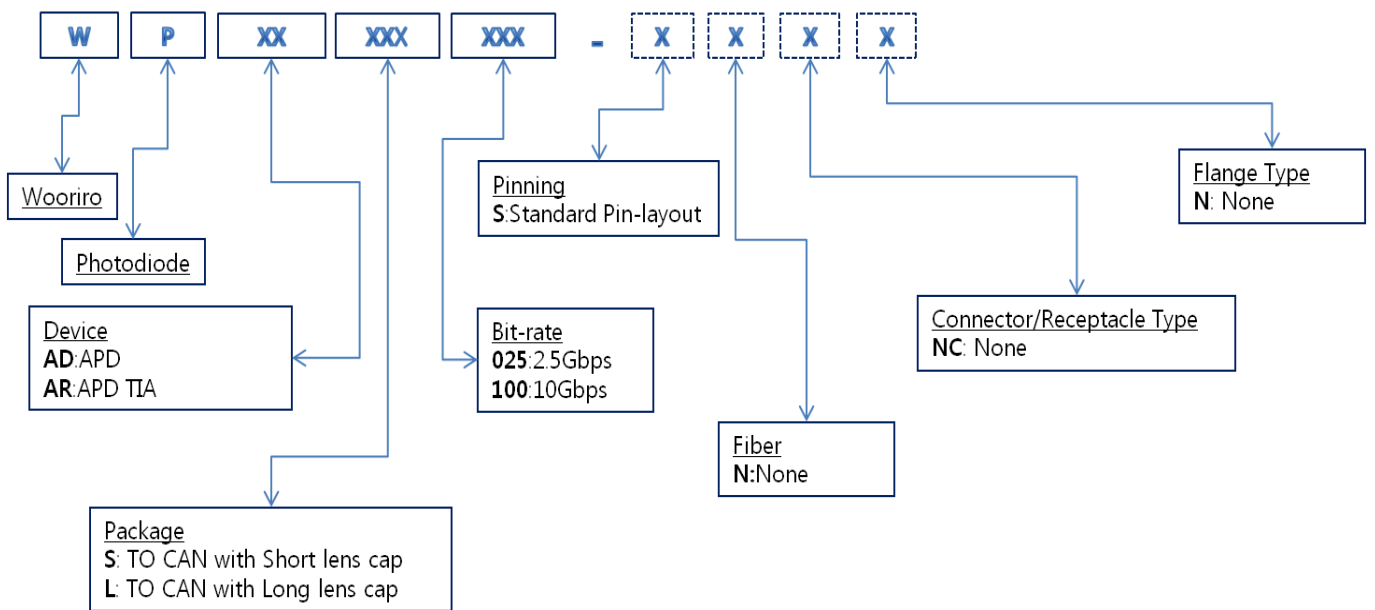
Table 4. PIN Configuration

Other Requirements

Precautions for use

This device is susceptible to damage as a result of ESD(electrostatic discharge). Use of ground straps, anti static mats, and other standard ESD protective equipment is recommended when handling or testing an InGaAs PIN/APD or any other junction photodiode. Soldering temperature of the leads should not exceed 350 °C for more than 10 seconds.

Ordering Information



Ex) WPARS100-SNNCN: 10G APD TIA TO CAN (Short Lens Cap) standard Pin-layout