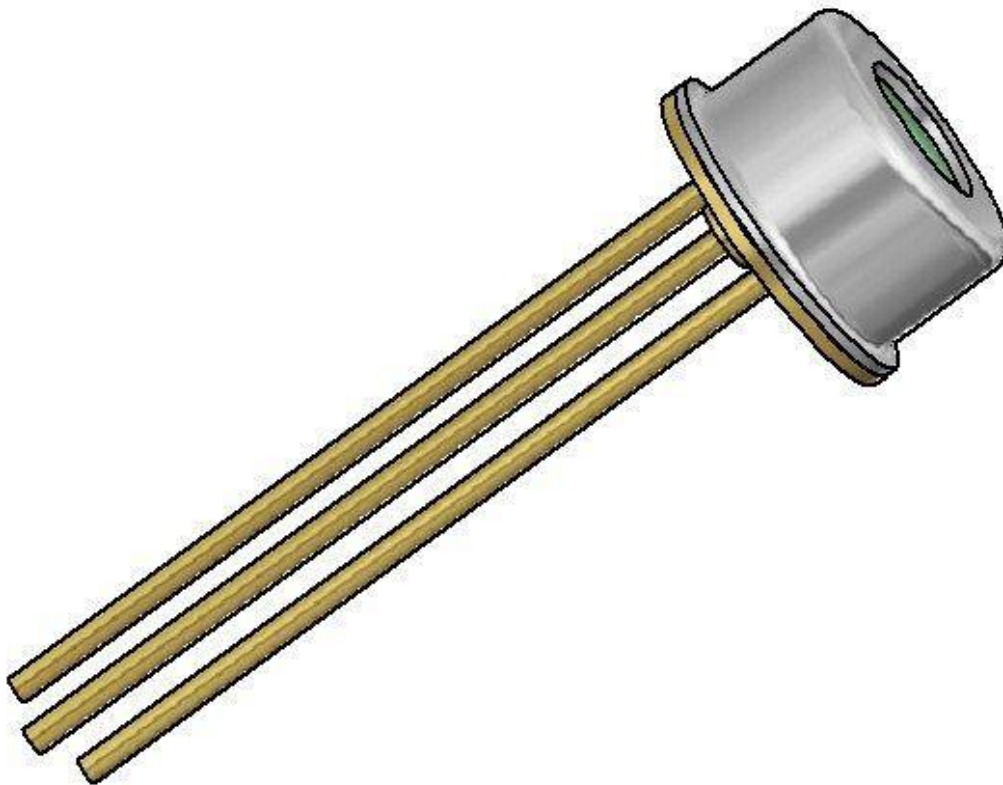


Wooriro Photo Diode Series

Avalanche Photodiode TO CAN

w / InGaAs APD To

SPECIFICATION



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General Description

This APD TO without TIA's are packaged hermetically sealed cans with AR coated flat window lens caps. The APD TO has sensitive area of 200µm diameter and it will be easily coupled with a single -mode and multi-mode fiber

Features

- Bandwidth up to 500MHz
- Operation at 1000 nm and 1650 nm
- 3-pin TO package
- High responsivity
- Low dark current

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Reverse Current	I_R	2	mA
Forward Current	I_F	10	mA
Operating Temperature	T_{OP}	-40 to +85	°C
Storage Temperature	T_{STR}	-40 to +85	°C

Table 1. Absolute Maximum Ratings

Electro-Optical Characteristics

Inspection sheet shall be an appended to products when they are delivered. It shall contain the following items.

Optical Characteristics (Tc=25°C)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Wavelength Range	λ		1000		1650	nm

Table 2. Optical Characteristics

Electrical Characteristics (Tc=25°C)

Parameter	Symbol	Test Condition	Min	Typ.	Max	Unit
Breakdown Voltage	V_{BR}	$I_D=10\mu A$	50	60	70	V
Dark current	I_D	$V_R = 0.9V_{BR}$		5	20	nA
Total capacitance ¹⁾	C_{PD}	$f = 1MHz, V_{PD} = 0.9V_B$		2.4	2.7	pF
Responsivity	R	$\lambda = 1550nm, 0.95V_B$	6			A/W
Excess noise factor ²⁾	F(M)	M=10		4.5		
Temperature coefficient of V_{BR}	γ	$\Delta V_{BR}/\Delta T$	0.08	0.1	0.12	V/ °C

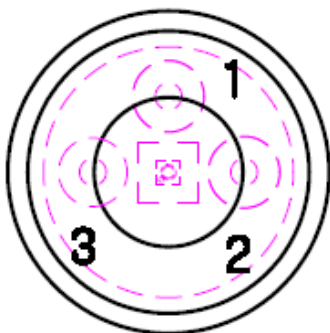
1) Total capacitance is the sum of APD chip and TO package

2) The excess noise factor is calculated from the estimated ionization coefficient ratio(k)

Table 3. Electrical Characteristics

Structure

Dimensional Parameter



- 1: Anode
- 2: Cathode
- 3: Case

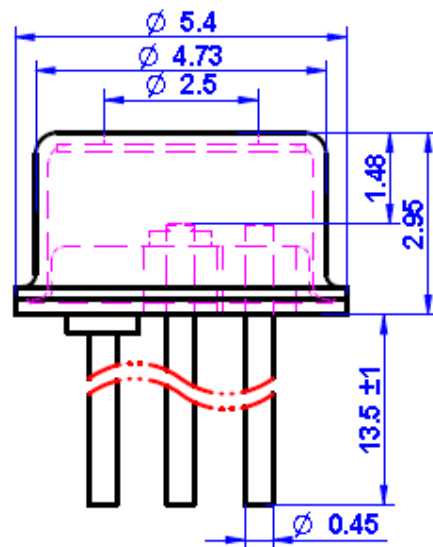


Table 4. PIN Configuration

Other Requirements

Precautions for use

- 1) 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.
- 2) During the optical alignment for fixing to the case or othe bonding, the APD chip would respond to input optical signal under the condition of high applied voltage lager than 60% of VB. Thus, 80% of VB is recommended for optical alignment and photocurrent monitoring.
- 3) Any kinds of high input optical power can cause damage on APD chip.