

# PNZ331CL

## PIN Photodiode

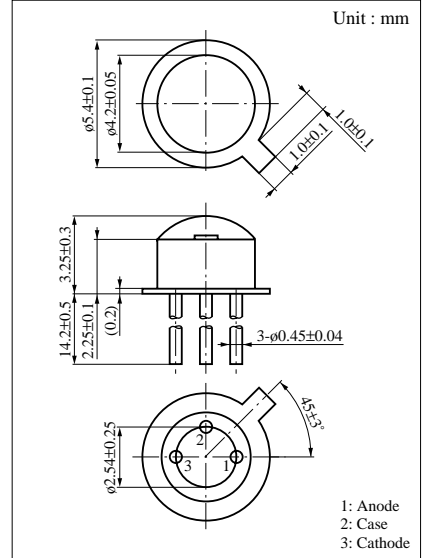
For optical fiber communication systems

### ■ Features

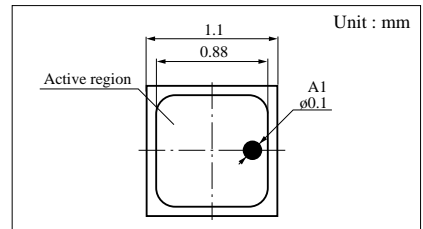
- TO-18 standard type package
- High coupling capability suitable for plastic fiber
- High quantum efficiency
- High-speed response

### ■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Reverse voltage (DC)	$V_R$	30	V
Power dissipation	$P_D$	50	mW
Operating ambient temperature	$T_{opr}$	-25 to +85	°C
Storage temperature	$T_{stg}$	-30 to +100	°C



### ■ Dimensions of detection area



### ■ Electro-Optical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Dark current	$I_D$	$V_R = 10V$		0.1	10	nA
Photo current	$I_L$	$V_R = 10V, L = 1000 \text{ lx}^*1$	7	14		$\mu\text{A}$
Peak sensitivity wavelength	$\lambda_p$	$V_R = 10V$		900		nm
Response time	$t_r, t_f^{*2}$	$V_R = 10V, R_L = 50\Omega$		2		ns
Capacitance between pins	$C_i$	$V_R = 10V$		3		pF
Photodetection sensitivity	$R$	$V_R = 10V, \lambda = 800\text{nm}$		0.55		A/W
Acceptance half angle	$\theta$	Measured from the optical axis to the half power point		70		deg.
Photodetection surface shape	$D$	Effective detection area		$\square 0.88$		mm

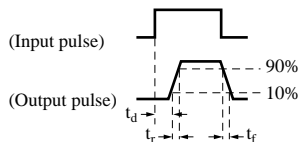
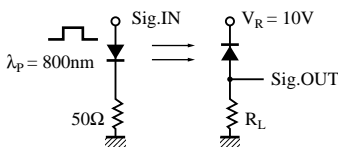
Note 1) Spectral sensitivity: Sensitivity at wavelengths exceeding 400 nm as a percentage of maximum sensitivity is 100%

Note 2) This product is not designed to withstand electromagnetic radiation or heavy-charge particles.

Note 3) Difficult to guarantee compliance with moisture resistance standard (MIL-STD-202D)

\*1 Measurements were made using a tungsten lamp (color temperature  $T = 2856K$ ) as a light source.

\*2 Switching time measurement circuit (see figure below)

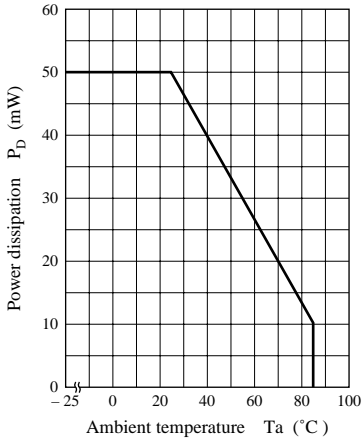


$t_d$ : Delay time

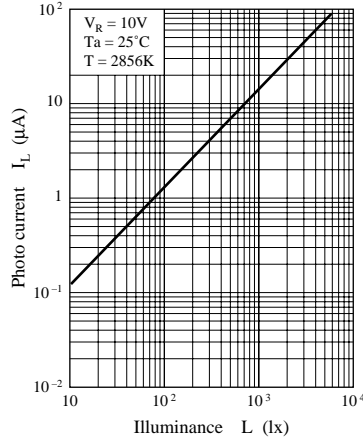
$t_r$ : Rise time (Time required for the collector photo current to increase from 10% to 90% of its final value)

$t_f$ : Fall time (Time required for the collector photo current to decrease from 90% to 10% of its initial value)

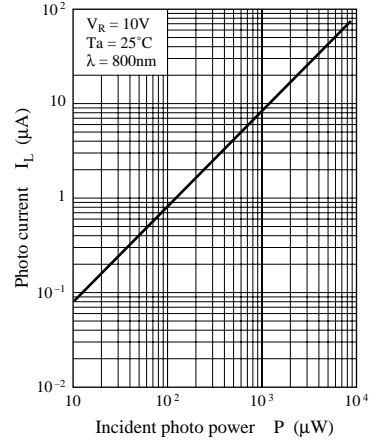
$P_D - T_a$



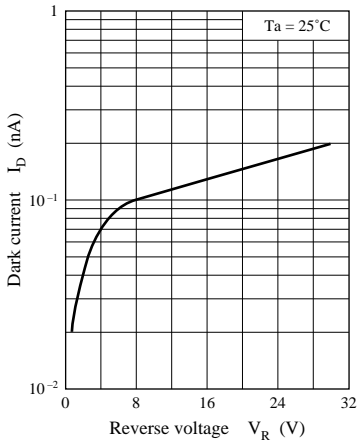
$I_L - L$



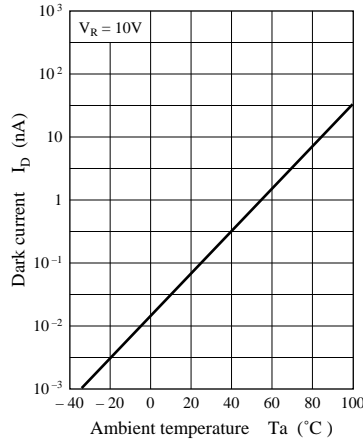
$I_L - P$



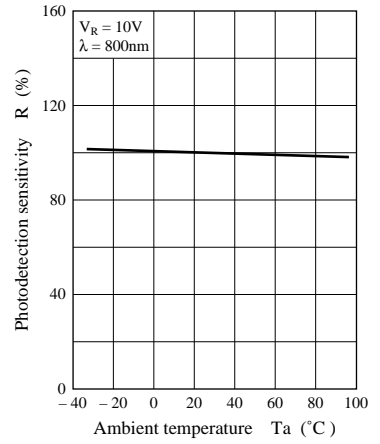
$I_D - V_R$



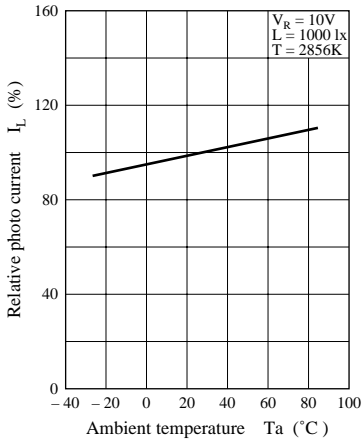
$I_D - T_a$



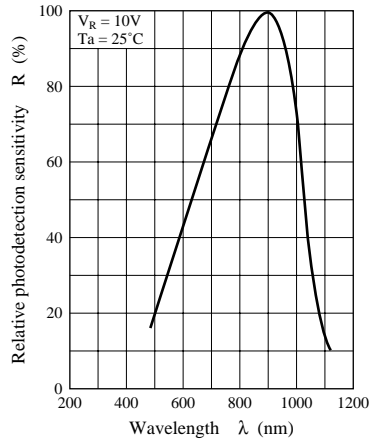
$R - T_a$



$I_L - T_a$



Spectral sensitivity characteristics



Frequency characteristics

