

# PNZ3108

## PIN Photodiode

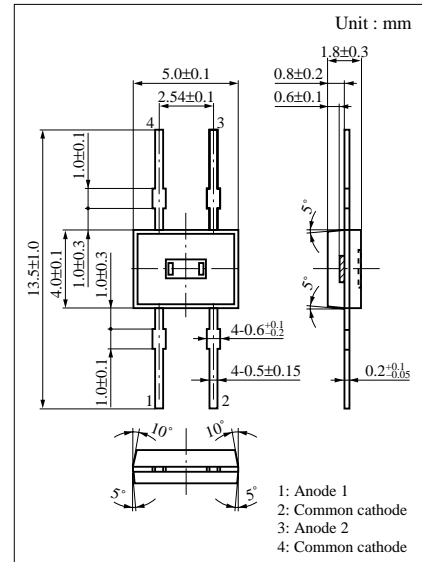
For optical control systems

### ■ Features

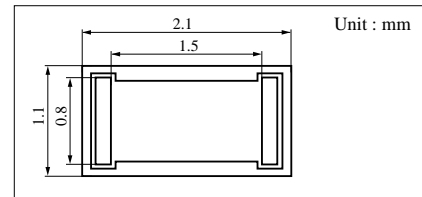
- High sensitivity and low dark current
- For one-dimensional light-point position detection
- Good positional linearity
- Small plastic package

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

Parameter	Symbol	Ratings	Unit
Reverse voltage (DC)	$V_R$	30	V
Power dissipation	$P_D$	30	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	$I_D$	$V_R = 1V$			2	nA
Photo current	$I_L^{*1}$	$V_R = 1V, L = 1000 \text{ lx}$	7	12		$\mu A$
		$V_R = 1V, \lambda = 900\text{nm}, E = 1\text{mW/cm}^2$		8		$\mu A$
Peak sensitivity wavelength	$\lambda_P$	$V_R = 1V$		940		nm
Response time	$t_r, t_f^{*2}$	$V_R = 1V, R_L = 1k\Omega$		5		$\mu s$
Capacitance between pins	$C_t$	$V_R = 1V, f = 1\text{MHz}$		8		pF
Resistance between electrodes	$R_S^{*3}$	$V_R = 1V, V_a = 0.5V$		250		k $\Omega$
Gradient of position signal	$a^{*4}$	$V_R = 1V$		0.133		

\*1  $I_L = I_1 + I_2$

Note:  $I_1$  and  $I_2$  are the photoelectric currents of anodes A1 and A2.

White tungsten lamp light source (color temperature  $T = 2856K$ )

\*2 GaAs light emitting diode light source ( $\lambda = 800\text{nm}$ )

\*3  $V_a$  is the potential difference between anodes A1 and A2.

\*4  $a = |(I_1 - I_2) / (I_1 + I_2)|$

Note : Incident light is at the position 100  $\mu m$  from the reference position.

The reference position is the position where  $I_1 = I_2$ .

