

PNZ3112

PIN Photodiode

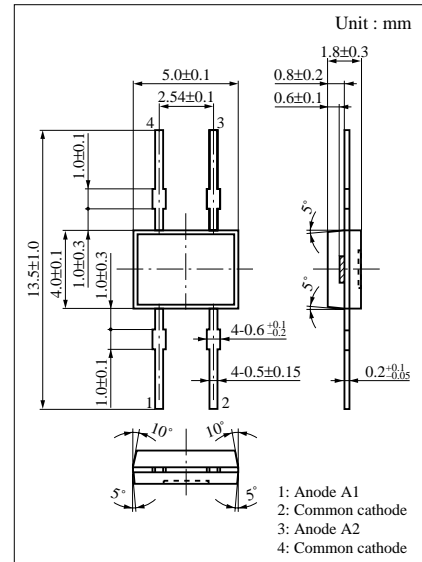
For optical control systems

■ Features

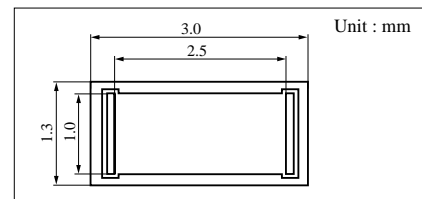
- High sensitivity and low dark current
- For one-dimensional light-point position detection
- Good positional linearity
- Small plastic package
- Adoption of visible light cutoff resin

■ 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	$V_R = 1V, L = 1000 \text{ lx}^{*1}$	16	20		μA
Peak sensitivity wavelength	λ_P	$V_R = 1V$		940		nm
Response time	t_r, t_f^{*2}	$V_R = 1V, R_L = 1k\Omega$		10		μs
Capacitance between pins	C_t	$V_R = 1V, f = 1\text{MHz}$		10		pF
Resistance between electrodes	R_S^{*3}	$V_R = 1V, V_a = 0.5V$		120		k Ω
Gradient of position signal	a^{*4}	$V_R = 1V$		0.08		

$$^{*1} I_L = I_1 + I_2$$

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 μm from the reference position.

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

