

PNZ323B

PIN Photodiode

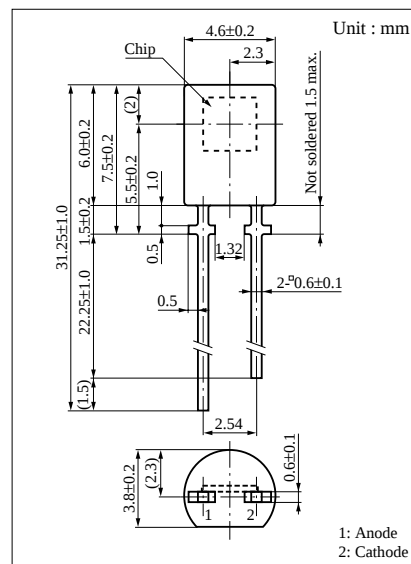
For optical control systems

Features

- Fast response which is well suited to high speed modulated light detection : $t_r, t_f = 50$ ns (typ.)
- High sensitivity, high reliability
- Peak sensitivity wavelength matched with infrared light emitting diodes : $\lambda_p = 970$ nm (typ.)
- Wide detection area, wide acceptance half angle : $\theta = 70$ deg. (typ.)
- 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	100	mW
Operating ambient temperature	T_{opr}	-30 to +85	°C
Storage temperature	T_{stg}	-40 to +100	°C



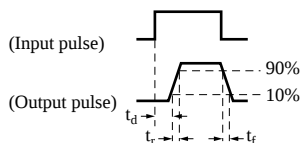
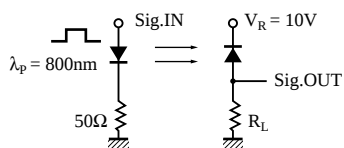
Electro-Optical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Dark current	I_D	$V_R = 10V$		5	50	nA
Photo current	I_L	$V_R = 10V, L = 1000 \text{ lx}^{*1}$		31		μA
Sensitivity to infrared emitters	S_{IR}^{*2}	$V_R = 5V, H = 0.1 \text{ mW/cm}^2$	3.2	4		μA
Peak sensitivity wavelength	λ_p	$V_R = 10V$		970		nm
Response time	t_r, t_f^{*3}	$V_R = 10V, R_L = 1 \text{ k}\Omega$		50		ns
Response time	t_r, t_f^{*3}	$V_R = 10V, R_L = 100 \text{ k}\Omega$		5		μs
Capacitance between pins	C_t	$V_R = 0V, f = 1 \text{ MHz}$		70		pF
Acceptance half angle	θ	Measured from the optical axis to the half power point		70		deg.

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

^{*2} Light source : $\lambda = 940$ nm

^{*3} Switching time measurement circuit



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)

