

PN328

PIN Photodiode

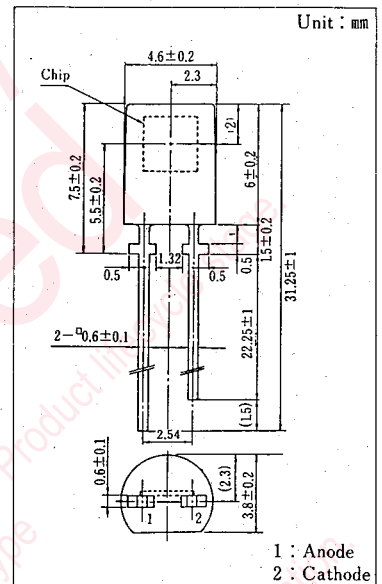
For Optical Control Systems

■ Features

- Fast response, high speed modulation: $t_r, t_f=50\text{ns}$ (typ.)
- High sensitivity, high reliability
- Peak sensitivity wavelength, matched with infrared emitters:
 $\lambda_P=940\text{nm}$ (typ.)
- Wide detection area, wide acceptance half angle $\theta=70$ deg. (typ.)
- Using plastic to cut-off visible light

■ Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Item	Symbol	Value	Unit
Reverse Voltage (DC)	V_R	30	V
Power Dissipation	P_D	100	mW
Operating Ambient Temperature	T_{opr}	-30 ~ +85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-40 ~ +100	$^\circ\text{C}$



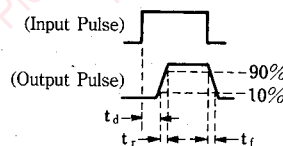
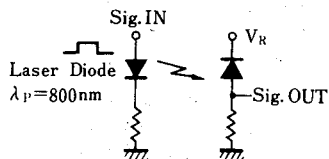
■ Electro-Optical Characteristics ($T_a=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Dark Current	I_D	$V_R=10\text{V}$		5	50	nA
Photo Current	I_L	$V_R=10\text{V}, L=10001_X^{*1}$	30	55		μA
Peak Sensitivity Wavelength	λ_P	$V_R=10\text{V}$		940		nm
Response Time	t_r, t_f^{*3}	$V_R=10\text{V}, R_L=1\text{k}\Omega$		50		ns
Response Time	t_r, t_f^{*3}	$V_R=10\text{V}, R_L=100\text{k}\Omega$		5		μs
Capacitance between Terminals	C_t	$V_R=0\text{V}, f=1\text{MHz}$		70		pF
Acceptance Half Angle	θ	Measured from the optical axis to the half power point		70		deg.
Sensitivity to Infrared Emitters	S_{IR}^{*2}	$V_R=10\text{V}, \lambda=940\text{nm}, H=0.1\text{mW/cm}^2$	4.0	5.2		μA

*1 Source: Tungsten 2856K

*2 Source: Infrared emitter

*3 Switching Time Measuring Circuit



t_d : Delay time

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

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

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