

# PNZ323 (PN323)

## Silicon planar type

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:  $\lambda_{PD} = 900$  nm (typ.)
- Wide detection area, wide half-power angle:  $\theta = 70^\circ$  (typ.)
- Adoption of visible light cutoff resin

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

Parameter	Symbol	Rating	Unit
Reverse voltage	$V_R$	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

■ Electrical-Optical Characteristics  $T_a = 25^{\circ}\text{C} \pm 3^{\circ}\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Sensitivity to infrared radiation * <sup>1</sup>	S <sub>IR</sub>	V <sub>R</sub> = 5 V, H = 0.1 mW/cm <sup>2</sup>	4.5	6.0		μA
Photocurrent * <sup>2</sup>	I <sub>L</sub>	V <sub>R</sub> = 10 V, L = 1000 lx		55		μA
Drain current	I <sub>D</sub>	V <sub>R</sub> = 10 V		5	50	nA
Terminal capacitance	C <sub>t</sub>	V <sub>R</sub> = 0 V, f = 1 MHz		70		pF
Peak sensitivity wavelength	λ <sub>PD</sub>	V <sub>R</sub> = 10 V		900		nm
Half-power angle	θ	The angle when the sensitivity to infrared radiation is halved		70		°
Rise time * <sup>3</sup>	t <sub>r</sub>	V <sub>R</sub> = 10 V, R <sub>L</sub> = 1 kΩ		50		ns
Fall time * <sup>3</sup>	t <sub>f</sub>			50		ns
Rise time * <sup>3</sup>	t <sub>r</sub>	V <sub>R</sub> = 10 V, R <sub>L</sub> = 100 kΩ		5		μs
Fall time * <sup>3</sup>	t <sub>f</sub>			5		μs

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7031 measuring methods for diodes.

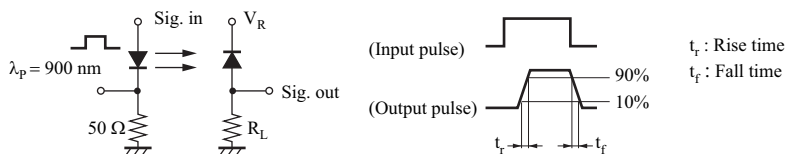
2. Spectral sensitivity characteristics: Sensitivity for wave length over 400 nm maximum sensitivity ratio is 100%.

3. This device is designed by disregarding radiation.

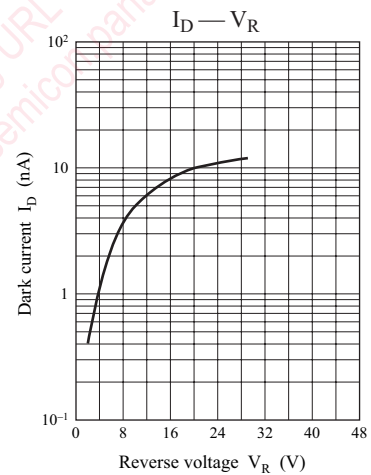
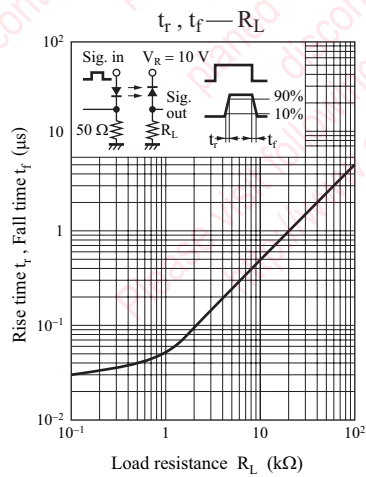
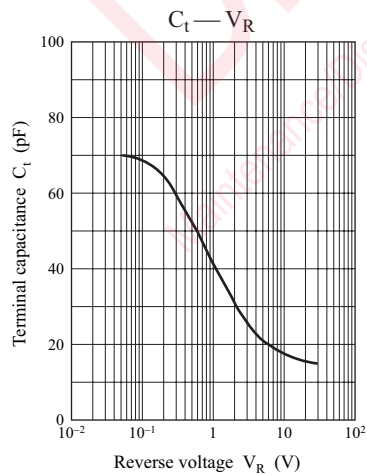
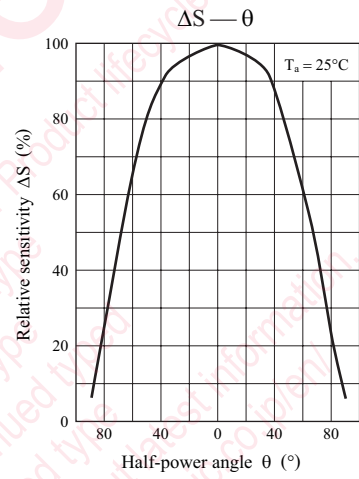
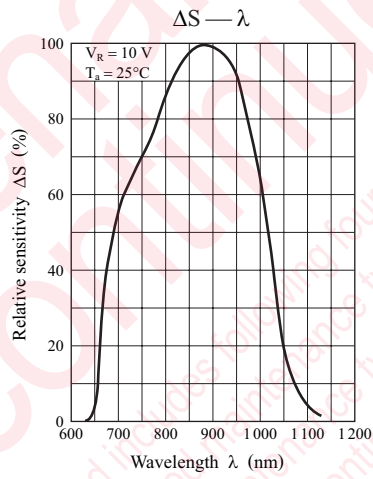
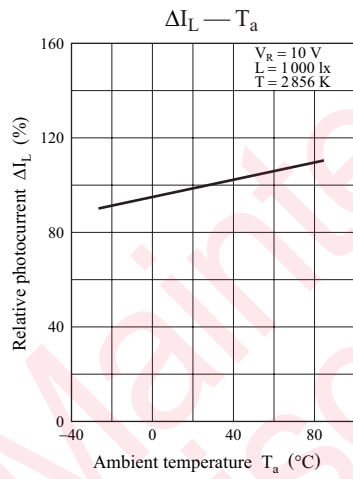
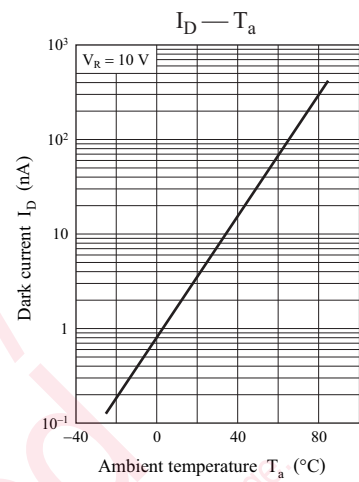
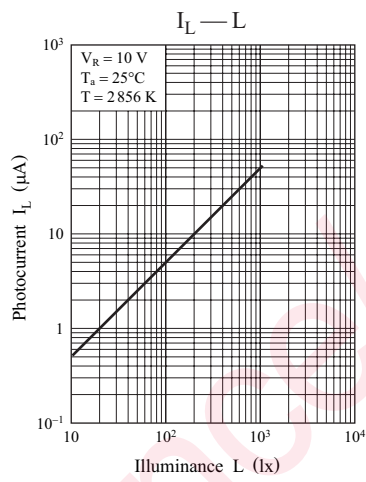
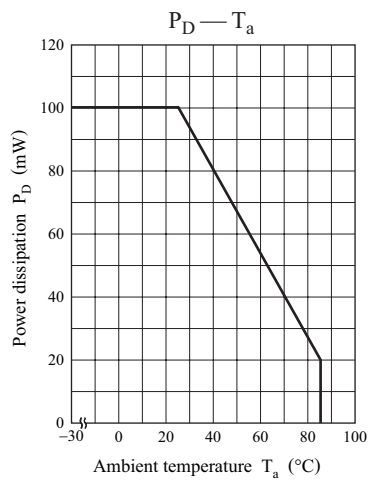
4. \*1:Source: Infrared emitters ( $\lambda = 940$  nm)

\*2: Source: Tungsten lamp (color temperature 2 856K)

\*3: Switching time measurement circuit

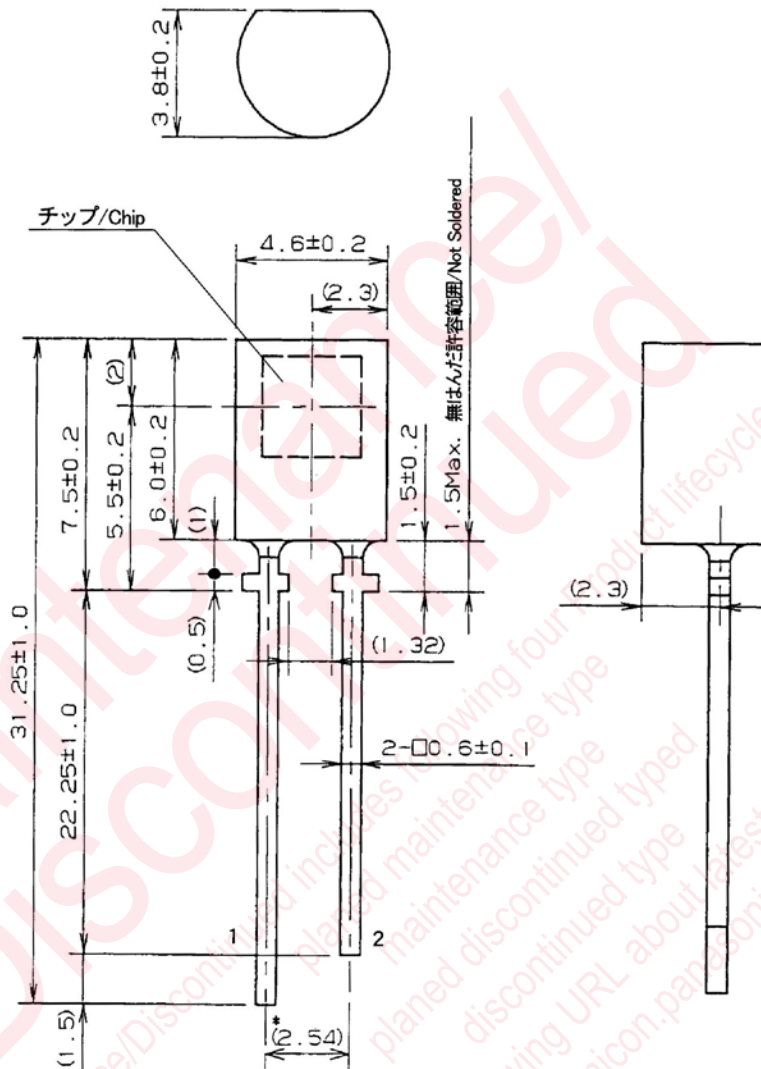


Note) The part number in the parenthesis shows conventional part number.



■ Package (Unit: mm)

LPXFSN2S0001



• Pin name

- 1: Anode
- 2: Cathode

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