

# PNZ323B (PN323B)

## Silicon planar type

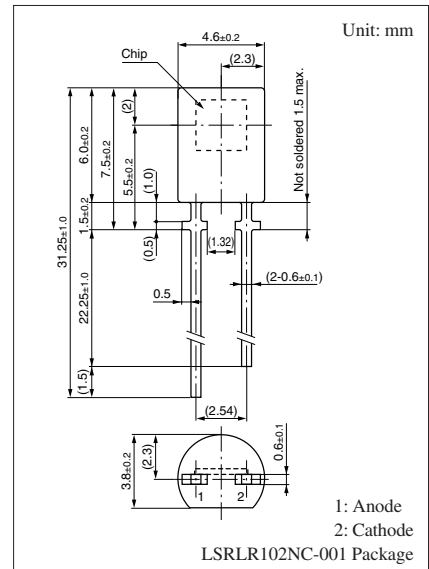
For optical control systems

### ■ 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 emission wavelength matched with infrared light emitting diodes:  $\lambda_p = 970$  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	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 to +100	$^\circ\text{C}$



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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Dark current	$I_D$	$V_R = 10$ V		5	50	nA
Photocurrent *1	$I_L$	$V_R = 10$ V, $L = 1000$ lx		31		$\mu\text{A}$
Sensitivity to infrared radiation *2	$S_{IR}$	$V_R = 5$ V, $H = 0.1$ mW/cm <sup>2</sup>	3.2	4.0		$\mu\text{A}$
Peak emission wavelength	$\lambda_p$	$V_R = 10$ V		970		nm
Rise time *3	$t_r$	$V_R = 10$ V, $R_L = 1$ k $\Omega$		50		ns
Fall time *3	$t_f$			50		ns
Rise time *3	$t_r$	$V_R = 10$ V, $R_L = 100$ k $\Omega$		5		$\mu\text{s}$
Fall time *3	$t_f$			5		$\mu\text{s}$
Terminal capacitance	$C_t$	$V_R = 0$ V, $f = 1$ MHz		70		pF
Half-power angle	$\theta$	The angle from which photocurrent becomes 50%		70		$^\circ$

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

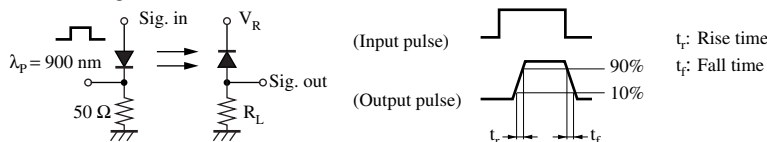
2. Spectral sensitivity characteristics: Sensitivity for wave length over 400 nm maximum sensitivity ratio is 100%.

3. This device is designed be disregarded radiation.

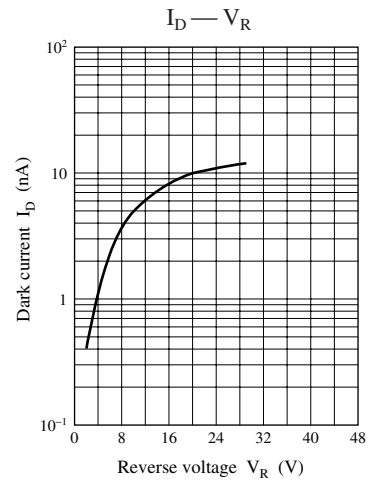
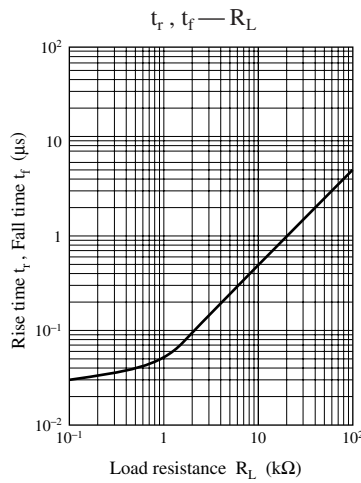
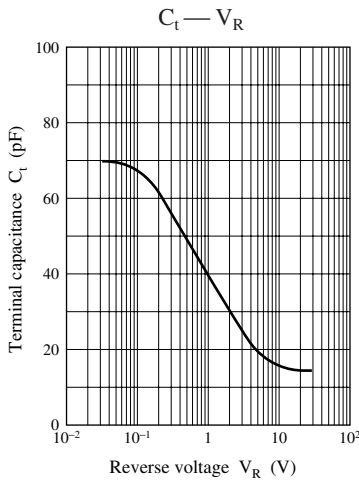
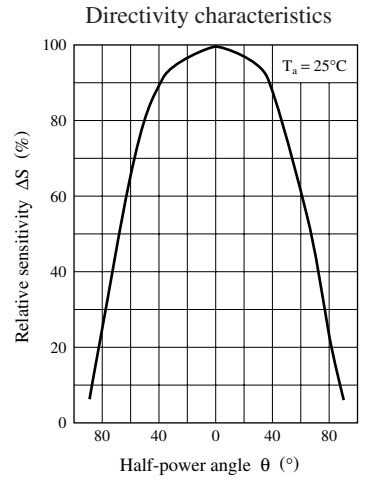
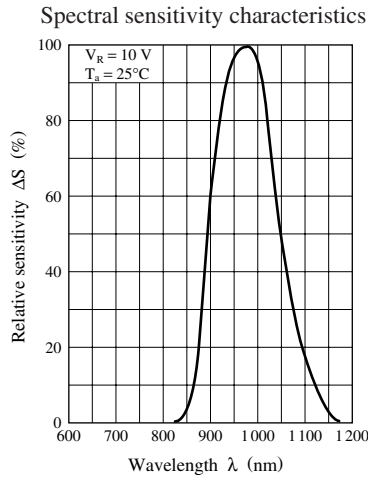
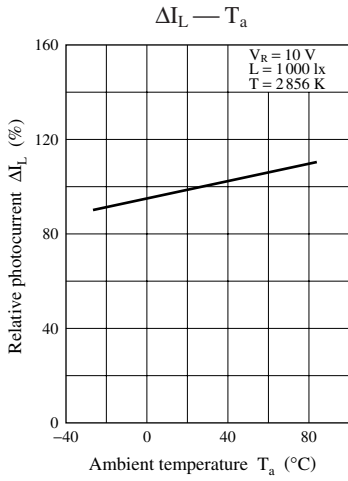
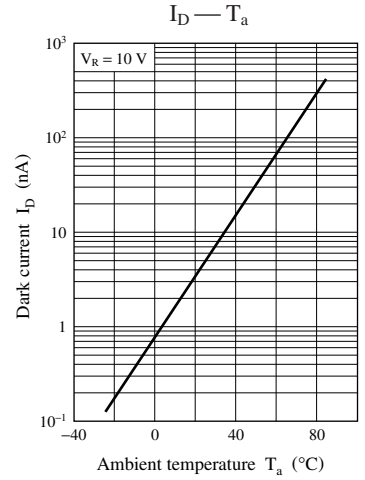
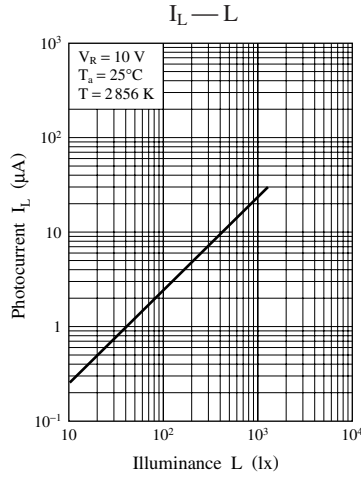
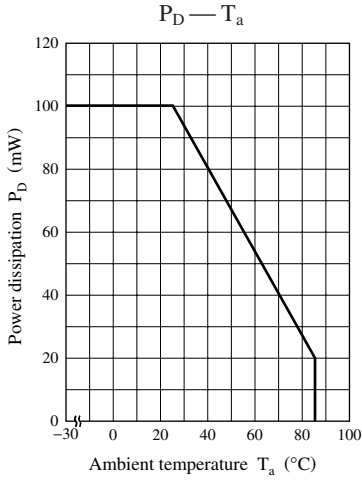
4. \*1: Source: Tungsten (color temperature 2856 K)

\*2: Source: Infrared radiation ( $\lambda = 940$  nm)

\*3: Switching time measurement circuit



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



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