

PNZ313 (PN313)

Silicon planar type

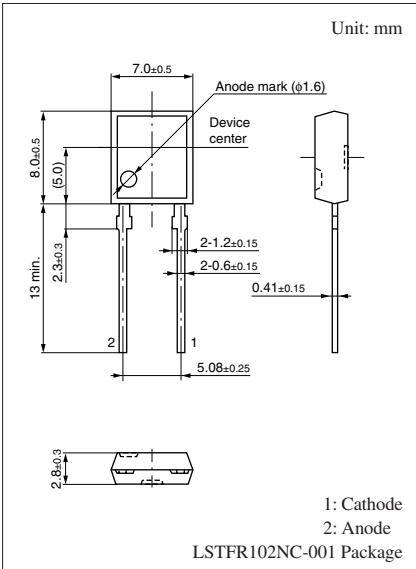
For optical control systems

■ 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: $\lambda_p = 940$ nm (typ.)
- Wide detection area, wide half-power angle: $\theta = 65^\circ$ (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 +80	$^\circ\text{C}$
Storage temperature	T_{stg}	-40 to +80	$^\circ\text{C}$



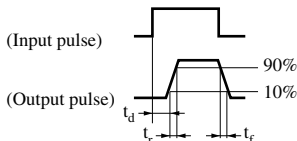
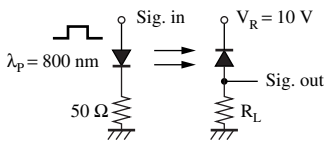
■ Electrical-Optical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

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	35	50		μA
Peak emission wavelength	λ_p	$V_R = 10$ V		940		nm
Rise time *2	t_r	$V_R = 10$ V, $R_L = 1$ k Ω		50		ns
Fall time *2	t_f			50		ns
Rise time *2	t_r	$V_R = 10$ V, $R_L = 100$ k Ω		5		μs
Fall time *2	t_f			5		μs
Terminal capacitance	C_t	$V_R = 0$ V, $f = 1$ MHz		70		pF
Half-power angle	θ	The angle from which photocurrent becomes 50%		65		$^\circ$

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

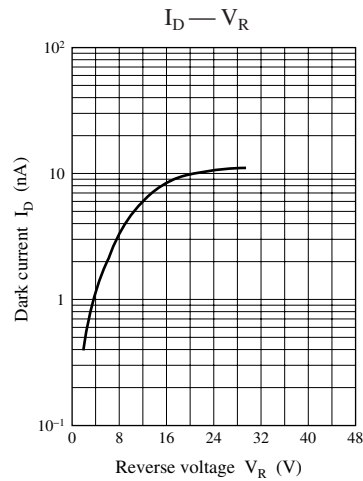
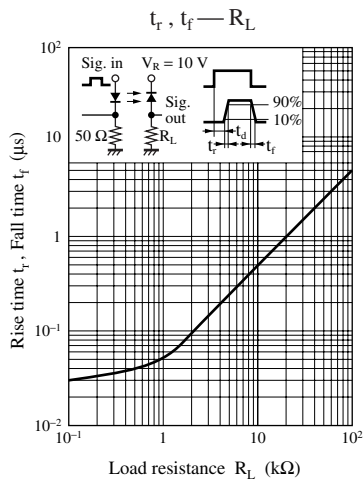
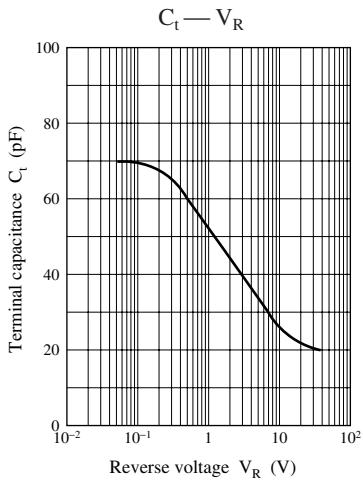
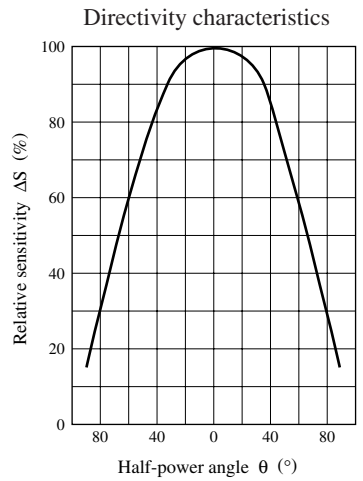
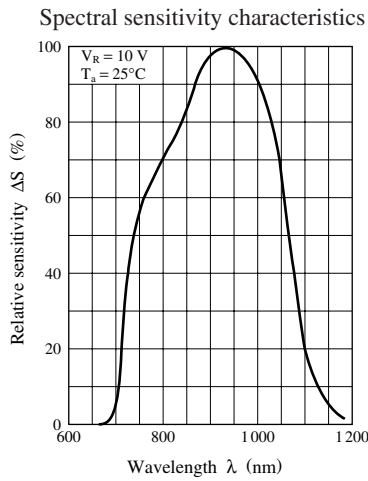
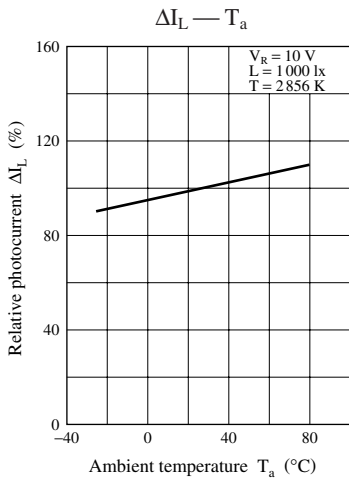
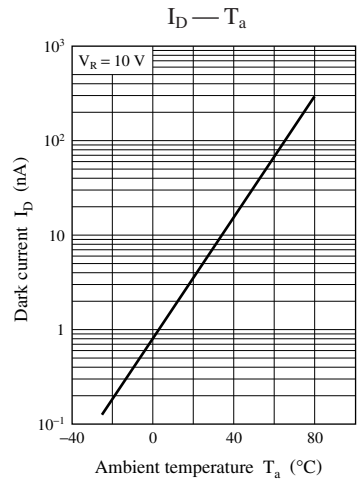
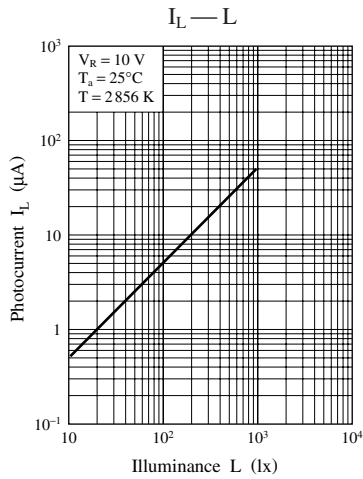
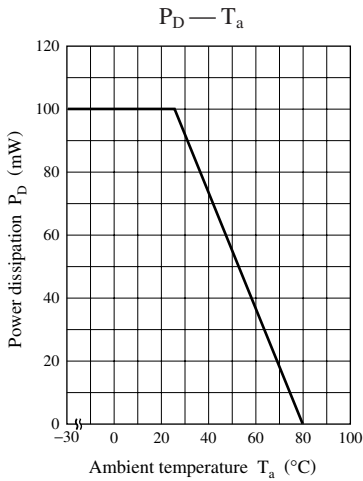
2. *1: Source: Tungsten (color temperature 2856 K)

*2: Switching time measurement circuit



- t_d : Delay time
- t_r : Rise time (Time required for the collector photocurrent to increase from 10% to 90% of its final value)
- t_f : Fall time (Time required for the collector photocurrent to decrease from 90% to 10% of its initial value)

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



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