

# PNZ107 (PN107)

## Silicon planar type

For optical control systems

### ■ Features

- High sensitivity:  $I_L = 5 \text{ mA}$  (min.)
- Narrow directivity characteristics for effective use of light input
- Fast response:  $t_r = 5 \text{ }\mu\text{s}$  (typ.)
- TO-18 standard type package

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

Parameter	Symbol	Rating	Unit
Collector-emitter voltage (Base open)	$V_{CEO}$	20	V
Emitter-collector voltage (Base open)	$V_{ECO}$	3	V
Collector current	$I_C$	30	mA
Collector power dissipation *	$P_C$	150	mW
Operating ambient temperature	$T_{opr}$	-25 to +85	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-30 to +100	$^\circ\text{C}$

Note) \*: The rate of electric power reduction is  $1.5 \text{ mW}/^\circ\text{C}$  above  $T_a = 25^\circ\text{C}$ .

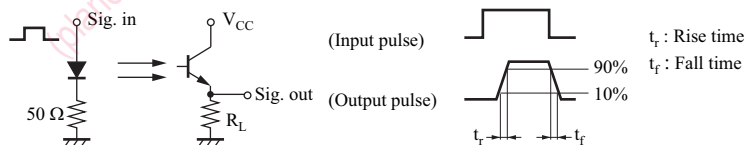
### ■ Electrical-Optical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Photocurrent *1	$I_L$	$V_{CE} = 10 \text{ V}, L = 100 \text{ lx}$	5		15	mA
Collector-emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = 10 \text{ V}$		0.05	2.0	$\mu\text{A}$
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_L = 1 \text{ mA}, L = 500 \text{ lx}$		0.3	0.6	V
Peak sensitivity wavelength	$\lambda_{PD}$	$V_{CE} = 10 \text{ V}$		900		nm
Half-power angle	$\theta$	The angle when the photocurrent is halved		10		$^\circ$
Rise time *2	$t_r$	$V_{CC} = 10 \text{ V}, I_L = 5 \text{ mA}, R_L = 100 \text{ }\Omega$		5		$\mu\text{s}$
Fall time *2	$t_f$			6		$\mu\text{s}$

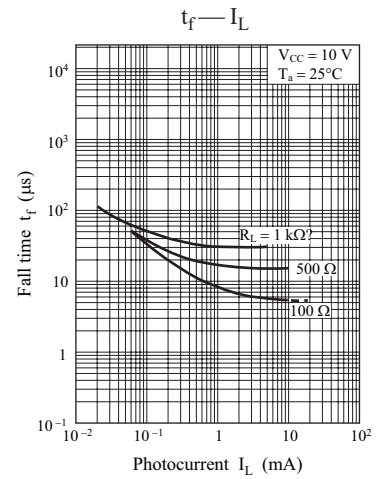
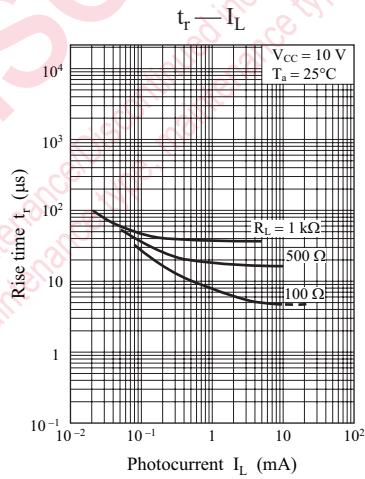
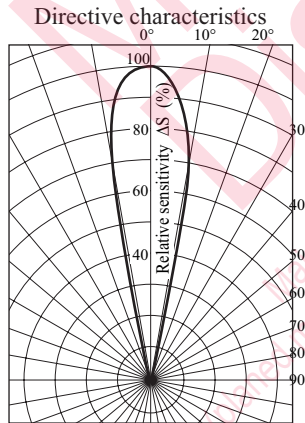
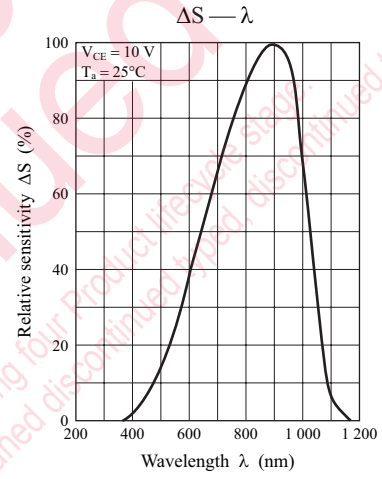
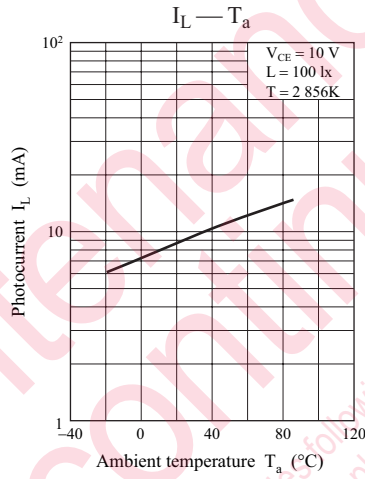
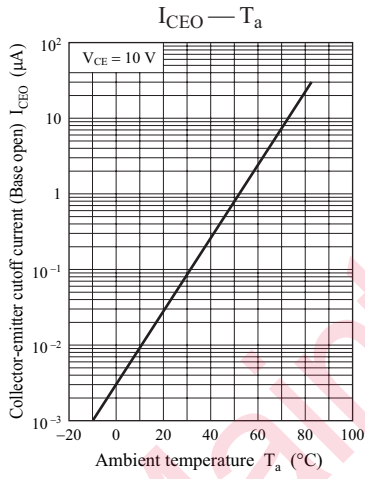
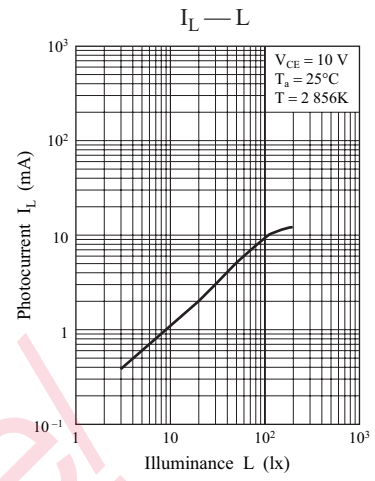
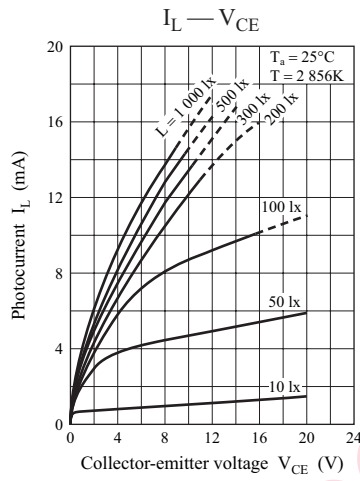
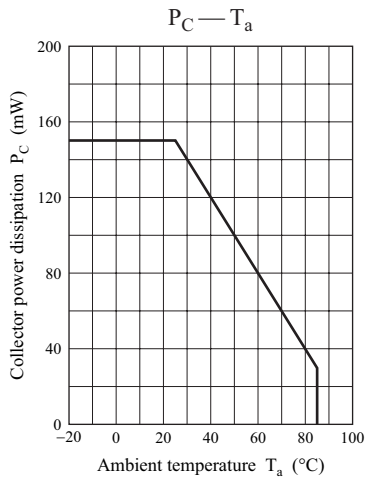
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

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: Tungsten lamp (color temperature 2 856K)

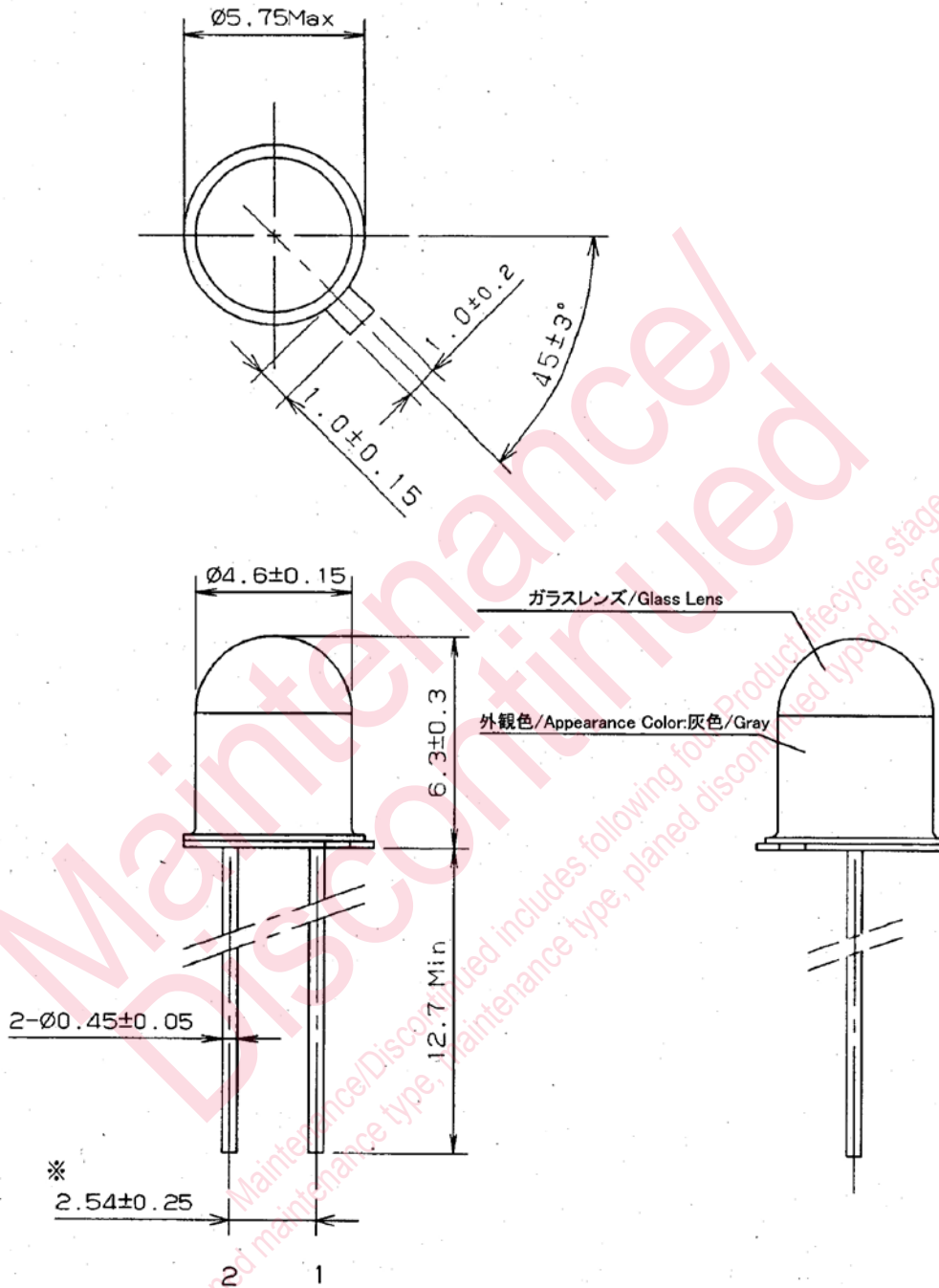
\*2: Switching time measurement circuit



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



■ Package (Unit: mm)



(注 1)※リード根元寸法とする。/(Note1)※Indicates root dimensions of lead.

- Pin name
- 1: Emitter
- 2: Collector

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