

# PNZ158 (PN158)

## Silicon planar type

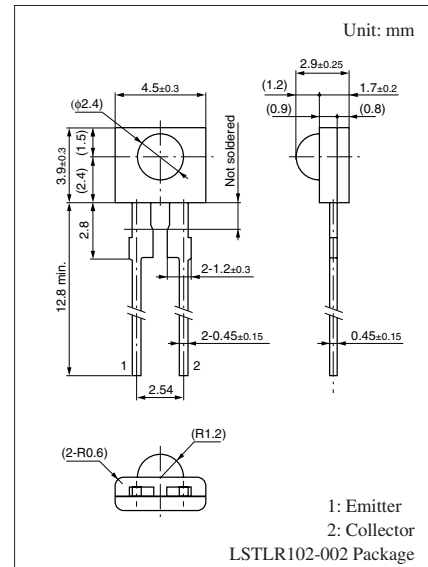
For optical control systems

### ■ Features

- High sensitivity
- Fast response:  $t_r = 4 \mu\text{s}$  (typ.)
- Wide spectral sensitivity characteristics, suited for detecting various kinds of LEDs
- Small size, thin side-view 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)	$V_{ECO}$	5	V
Collector current	$I_C$	20	mA
Collector power dissipation	$P_C$	100	mW
Operating ambient temperature	$T_{opr}$	-25 to +85	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-30 to +100	$^\circ\text{C}$



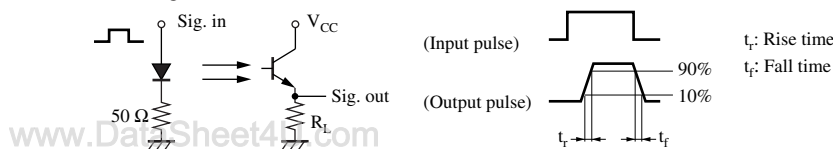
### ■ Electrical-Optical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Photocurrent *1	$I_{CE(L)}$	$V_{CE} = 10 \text{ V}$ , $L = 500 \text{ lx}$	1.0	4.0		$\mu\text{A}$
Dark current	$I_{CEO}$	$V_{CE} = 10 \text{ V}$		0.01	1.00	$\mu\text{A}$
Peak sensitivity wavelength	$\lambda_p$	$V_{CE} = 10 \text{ V}$		800		nm
Half-power angle	$\theta$	The angle from which photocurrent becomes 50%		40		$^\circ$
Rise time *2	$t_r$	$V_{CC} = 10 \text{ V}$ , $I_{CE(L)} = 5 \text{ mA}$ , $R_L = 100 \Omega$		4	10	$\mu\text{s}$
Fall time *2	$t_f$			4	10	$\mu\text{s}$
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_{CE(L)} = 1 \text{ mA}$ , $L = 1000 \text{ lx}$		0.2	0.5	V

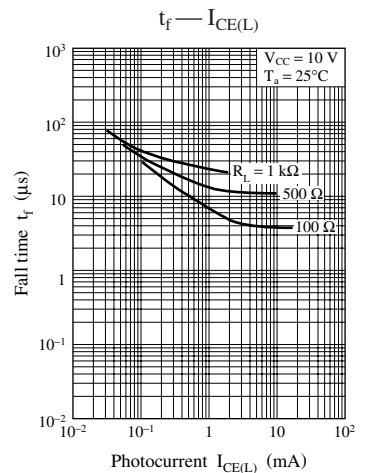
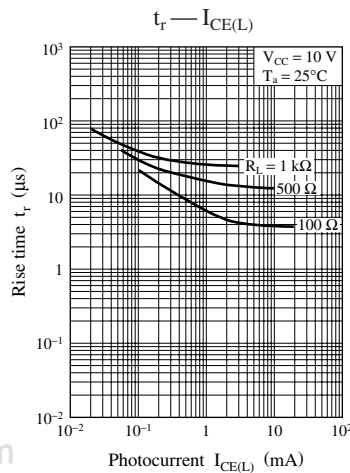
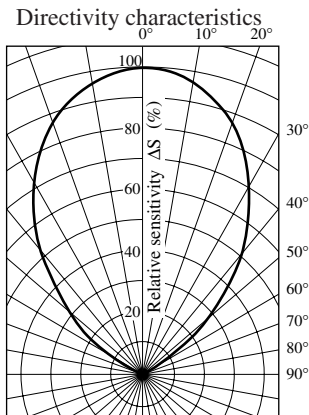
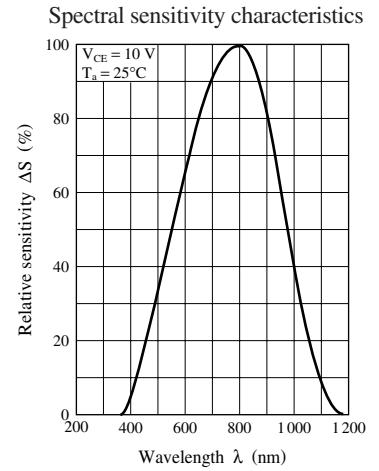
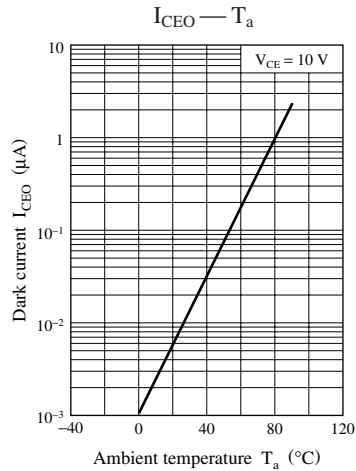
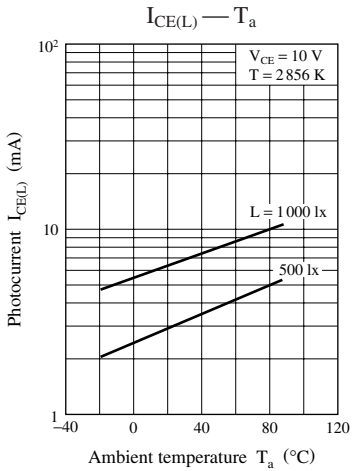
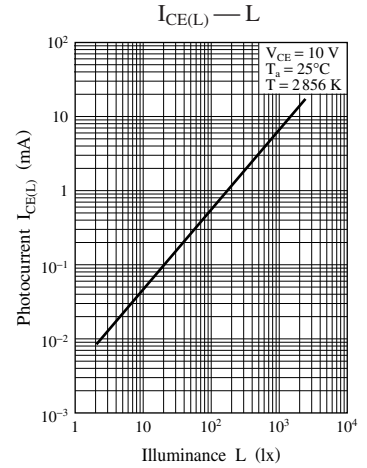
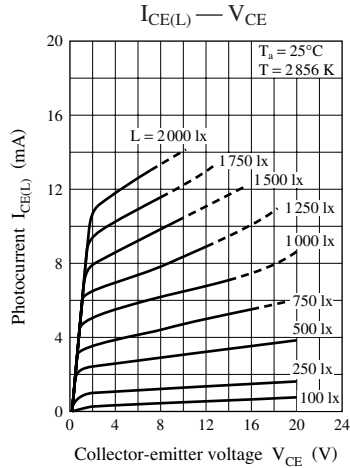
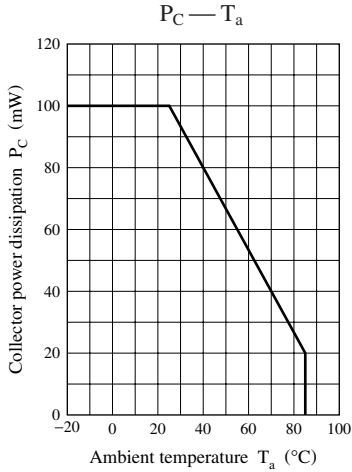
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

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

\*2: Switching time measurement circuit



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



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