

PNZ154 (PN154)

Silicon NPN type

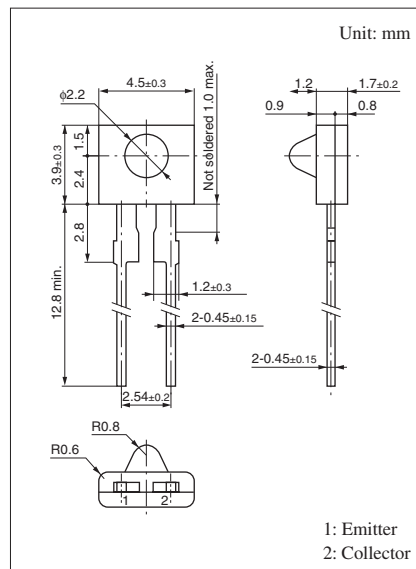
For optical control systems

■ 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			μA
Dark current	I_{CEO}	$V_{CE} = 10 \text{ V}$		0.01	0.2	μA
Peak emission wavelength	λ_p	$V_{CE} = 10 \text{ V}$		800		nm
Half-power angle	θ	The angle from which photocurrent becomes 50%		27		$^\circ$
Rise time *2	t_r	$V_{CC} = 10 \text{ V}$, $I_{CE(L)} = 5 \text{ mA}$, $R_L = 100 \Omega$		4	10	μs
Fall time *2	t_f			4	10	μs
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_{CE(L)} = 1 \text{ mA}$, $L = 1000 \text{ lx}$		0.2	0.5	V

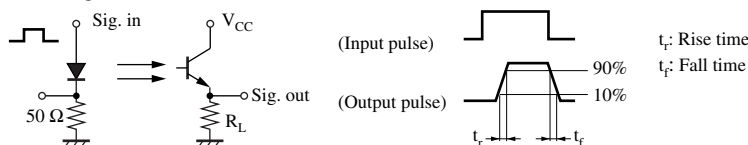
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

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

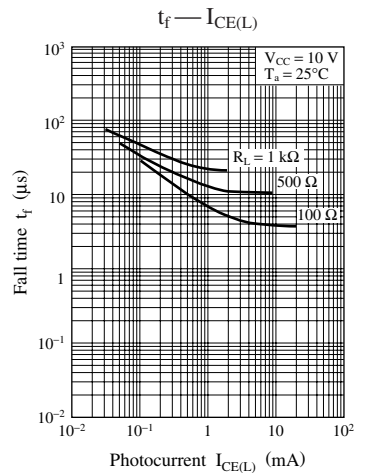
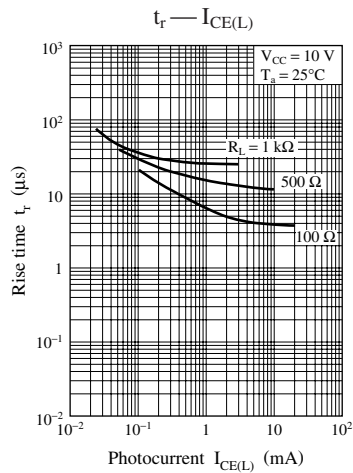
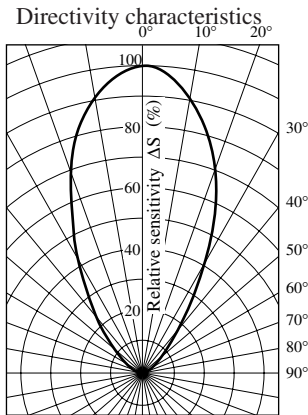
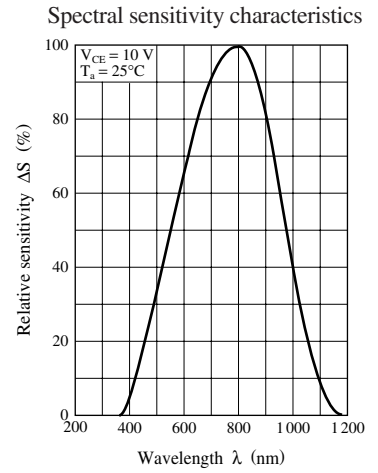
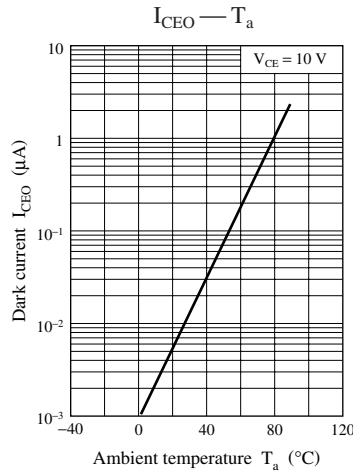
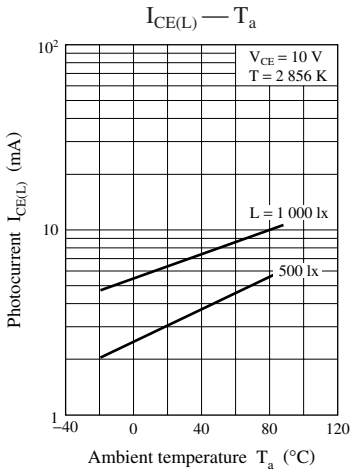
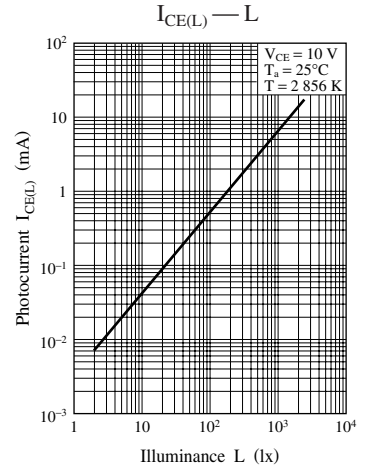
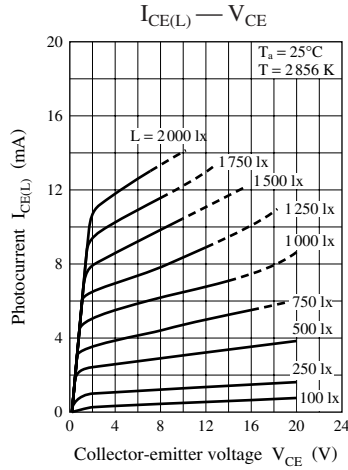
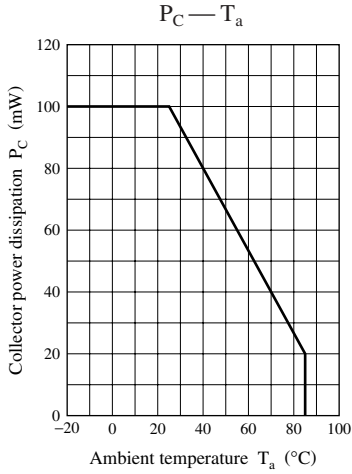
3. This device is designed be dis regarded radiation.

4. *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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