

PNZ150L (PN150L)

Silicon NPN Phototransistor

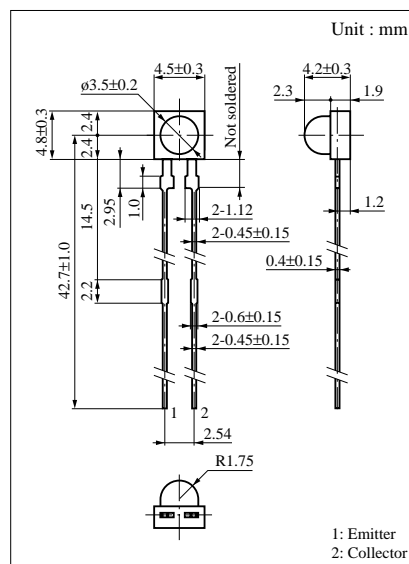
For optical control systems

■ Features

- High sensitivity
- Wide spectral sensitivity, suited for detecting GaAs LEDs
- Low dark current
- Small size, thin side-view type package

■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Collector to emitter voltage	V_{CEO}	20	V
Collector current	I_C	20	mA
Collector power dissipation	P_C	100	mW
Operating ambient temperature	T_{opr}	-25 to +85	°C
Storage temperature	T_{stg}	-30 to +100	°C

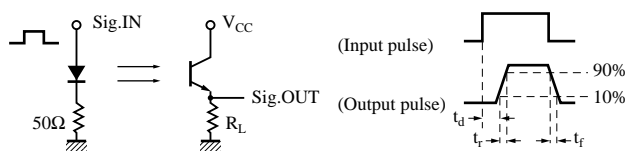


■ Electro-Optical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Dark current	I_{CEO}	$V_{CEO} = 10V$		0.01	0.2	μA
Sensitivity to infrared emitters	S_{IR}^{*1}	$V_{CE} = 10V, H = 15\mu W/cm^2$	16			μA
Collector saturation voltage	$V_{CE(sat)}$	$V_{CE} = 10V, H = 15\mu W/cm^2$		0.2	0.5	V
Peak sensitivity wavelength	λ_P	$V_{CEO} = 10V$		800		nm
Response time	t_r, t_f^{*2}	$V_{CC} = 10V, I_{CE(L)} = 5mA, R_L = 100\Omega$		4		μs
Acceptance half angle	θ	Measured from the optical axis to the half power point		35		deg.

*1 Measurements were made using infrared light ($\lambda = 940$ nm) as a light source.

*2 Response time measurement circuit



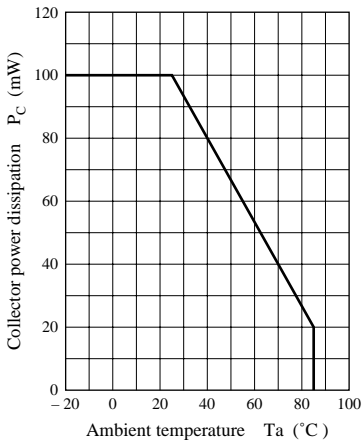
t_d : Delay time

t_r : Rise time (Time required for the collector photo current to increase from 10% to 90% of its final value)

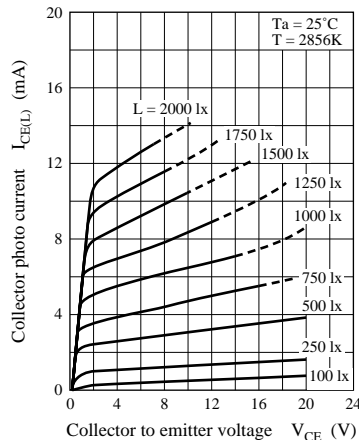
t_f : Fall time (Time required for the collector photo current to decrease from 90% to 10% of its initial value)

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

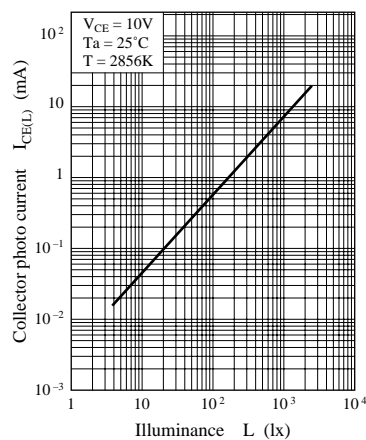
$P_C - T_a$



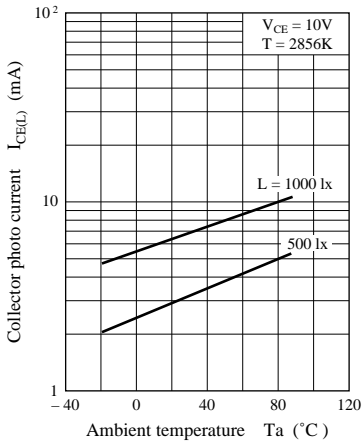
$I_{CE(L)} - V_{CE}$



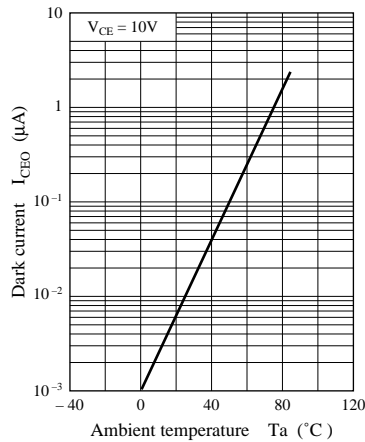
$I_{CE(L)} - L$



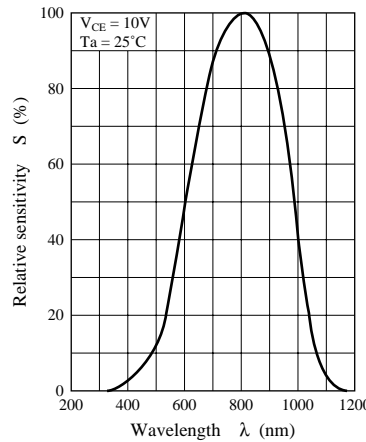
$I_{CE(L)} - T_a$



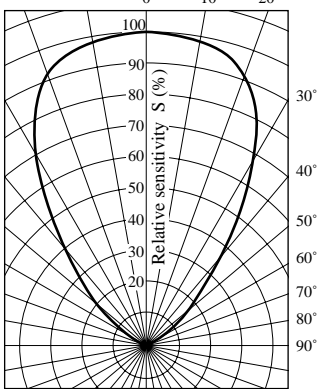
$I_{CEO} - T_a$



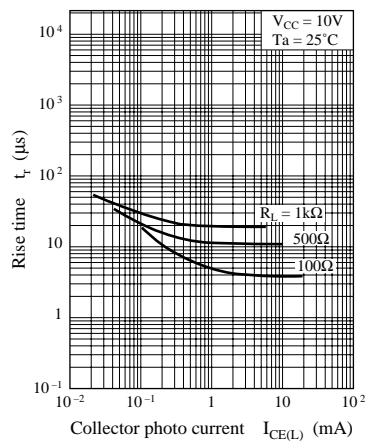
Spectral sensitivity characteristics



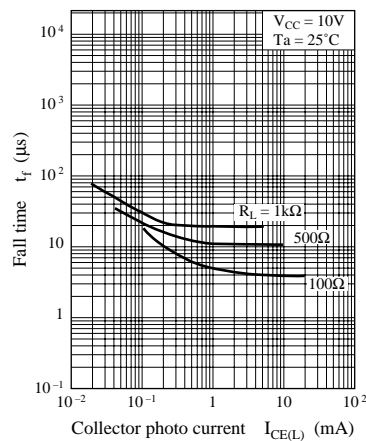
Directivity characteristics



$t_r - I_{CE(L)}$



$t_f - I_{CE(L)}$



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