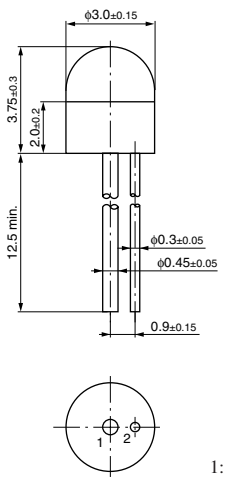
PNZ120S (PN120S)

Silicon planar type

For optical control systems

Unit: mm



1: Collector
2: Emitter
CTRLR102-001 Package

■ Features

- High sensitivity
- Wide directivity characteristics for easy use
- Fast response: t_r , t_f = 3 μs (typ.)
- Signal mixing capability using base pin
- Small size (ϕ3) ceramic package

■ Absolute Maximum Ratings T_a = 25°C

Parameter	Symbol	Rating	Unit
Collector-emitter voltage (Base open)	V_{CEO}	30	V
Emitter-collector voltage (Base open)	V_{ECO}	5	V
Collector current	I_C	20	mA
Collector power dissipation	P_C	50	mW
Operating ambient temperature	T_{opr}	−25 to +85	°C
Storage temperature	T_{stg}	−30 to +100	°C

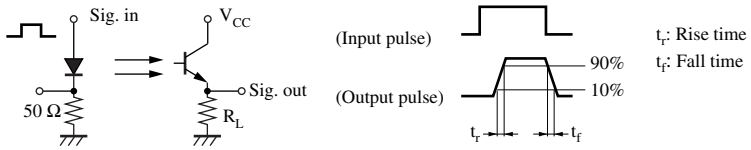
■ Electrical-Optical Characteristics T_a = 25°C ± 3°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Photocurrent *1, *2	$I_{CE(L)1}$	V_{CE} = 10 V, L = 2 lx	3			μA
	$I_{CE(L)2}$	V_{CE} = 10 V, L = 500 lx	1.0			mA
Dark current	I_{CEO}	V_{CE} = 10 V		5	500	nA
Peak emission wavelength	λ_p	V_{CE} = 10 V		800		nm
Half-power angle	θ	The angle from which photocurrent becomes 50%		50		°
Rise time *3	t_r	V_{CC} = 10 V, $I_{CE(L)}$ = 5 mA, R_L = 100 Ω		3		μs
Fall time *3	t_f			3		μs
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_{CE(L)}$ = 1 mA, L = 1 000 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 disregarded radiation.
5. ∗1: Source: Tungsten (color temperature 2 856 K)
∗2: Rank classification

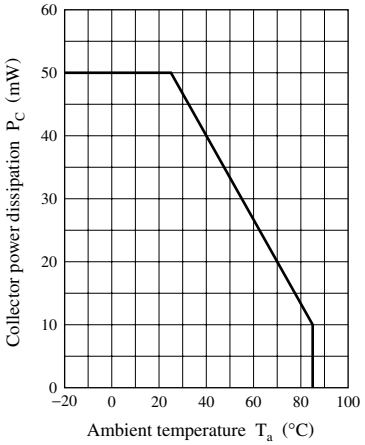
Rank	QL	RL	SL	Q	R	S
$I_{CE(L)1}$	3 to 16	10 to 30	>24	—	—	—
$I_{CE(L)2}$	5 typ.	6 typ.	8 typ.	1.0 to 5.0	4.0 to 9.0	>7.0

∗3: Switching time measurement circuit

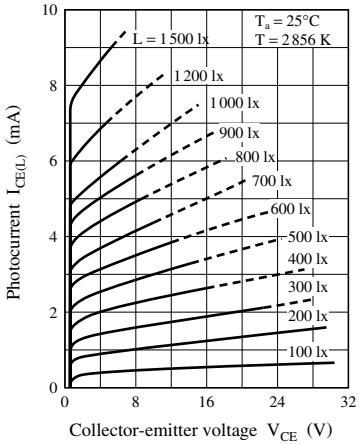


Note) The part number in the parenthesis shows conventional part number.

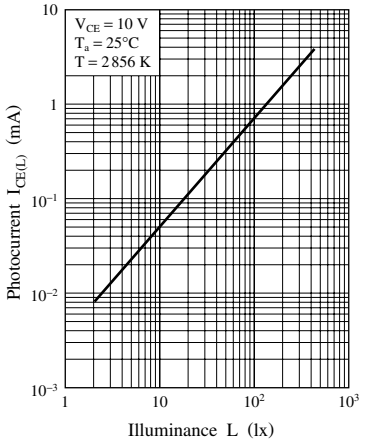
P_C — T_a



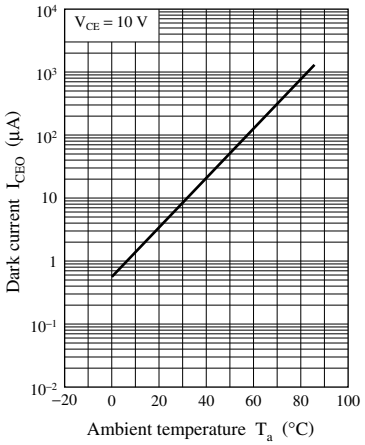
$I_{CE(L)}$ — V_{CE}



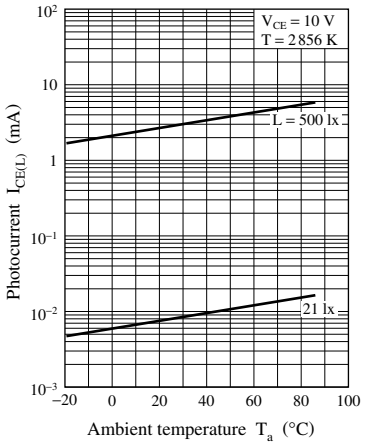
$I_{CE(L)}$ — L



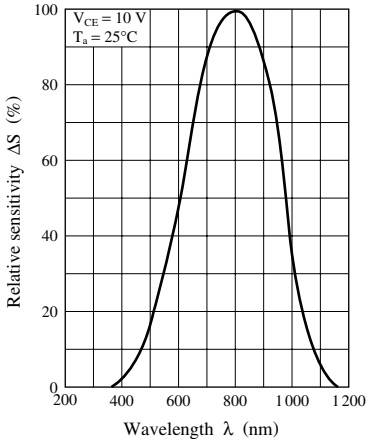
I_{CEO} — T_a



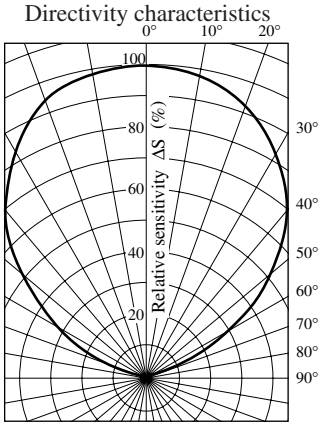
$I_{CE(L)}$ — T_a



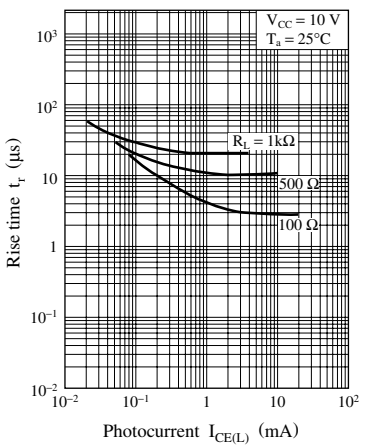
Spectral sensitivity characteristics



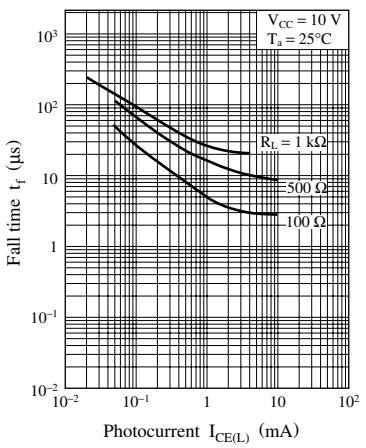
Directivity characteristics



t_r — $I_{CE(L)}$



t_f — $I_{CE(L)}$



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