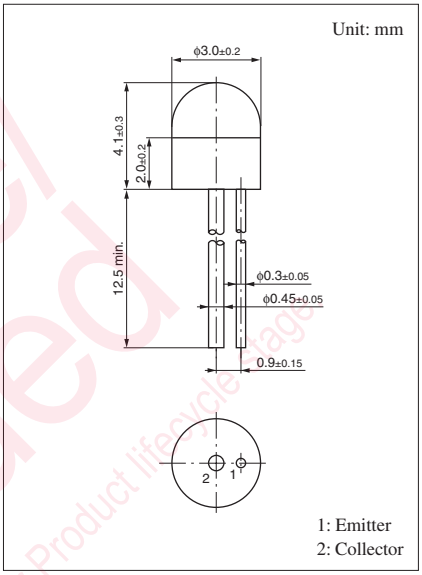
PNZ202S (PN202S)

Silicon planar type

For optical control systems



■ Features

- Darlington output, high sensitivity
- Easy to combine with red and infrared light emitting diodes
- Small size (ϕ3) ceramic package

■ Absolute Maximum Ratings $T_a = 25°C$

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	30	mA
Collector power dissipation	P_C	100	mW
Operating ambient temperature	T_{opr}	−25 to +80	°C
Storage temperature	T_{stg}	−30 to +100	°C

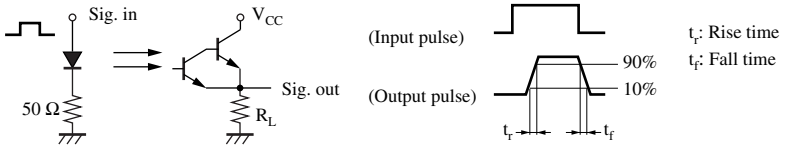
■ Electrical-Optical Characteristics $T_a = 25°C \pm 3°C$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Photocurrent *1, *2	$I_{CE(L)}$	V_{CE} = 10 V, L = 2 lx	0.2		5.0	mA
Dark current	I_{CEO}	V_{CE} = 10 V		0.1	0.5	μA
Peak emission wavelength	λ_p	V_{CE} = 10 V		800		nm
Half-power angle	θ	The angle from which photocurrent becomes 50%		30		°
Rise time *3	t_r	V_{CC} = 10 V, $I_{CE(L)}$ = 5 mA, R_L = 100 Ω		150		μs
Fall time *3	t_f			150		μs
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_{CE(L)}$ = 1 mA, L = 100 lx		0.7	1.5	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

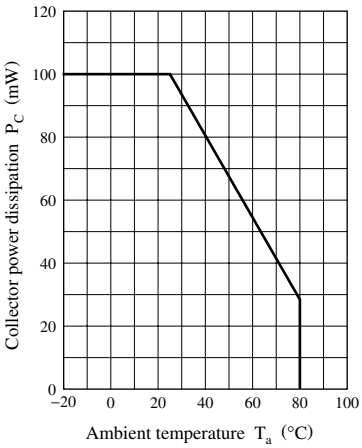
Rank	QL	RL	SL
$I_{CE(L)}$ (mA)	0.2 to 0.8	0.6 to 1.65	1.35 to 5.0
Color	—	Red	—

∗3: Switching time measurement circuit

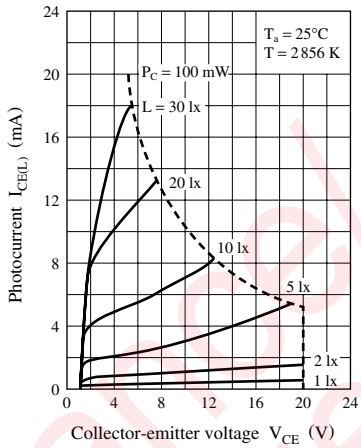


Note) The part number in the parenthesis shows conventional part number.

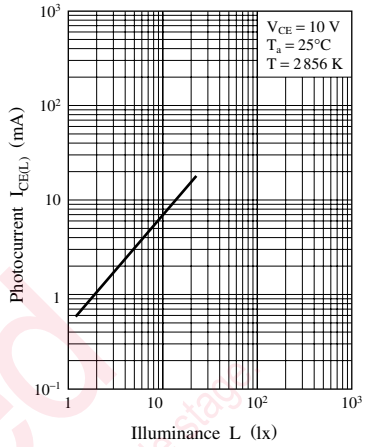
P_C — T_a



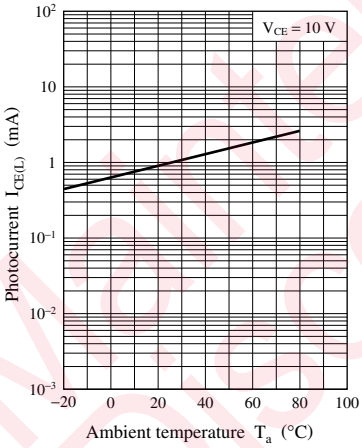
$I_{CE(L)}$ — V_{CE}



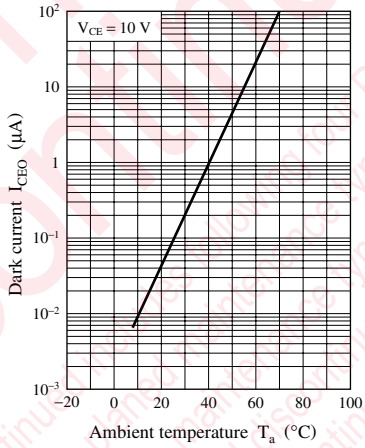
$I_{CE(L)}$ — L



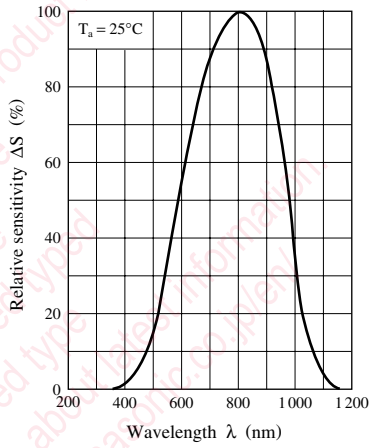
$I_{CE(L)}$ — T_a



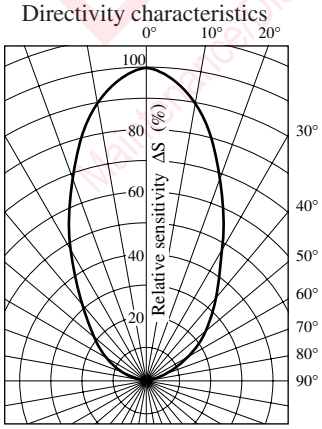
I_{CEO} — T_a



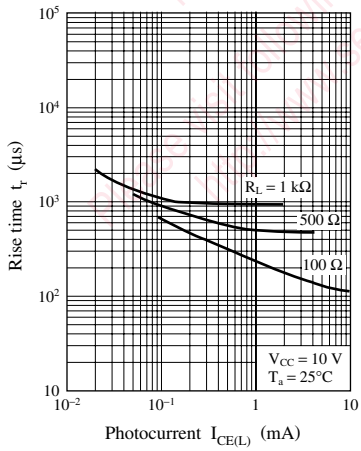
Spectral sensitivity characteristics



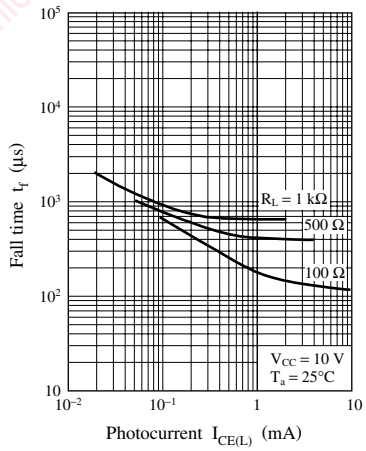
Directivity characteristics



t_r — $I_{CE(L)}$



t_f — $I_{CE(L)}$



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