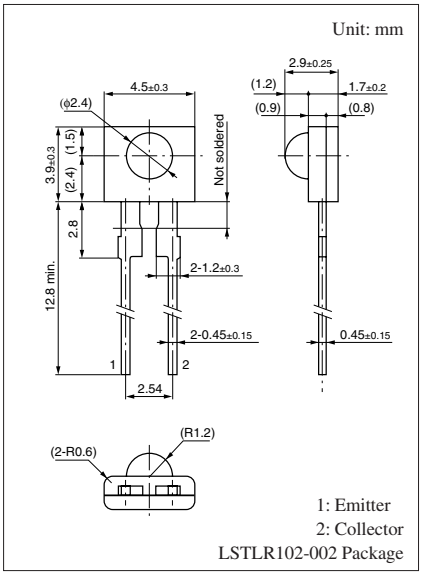
PNZ158 (PN158)

Silicon planar type

For optical control systems



■ Features

- High sensitivity
- Fast response: t_r = 4 µs (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°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	°C
Storage temperature	T_{stg}	−30 to +100	°C

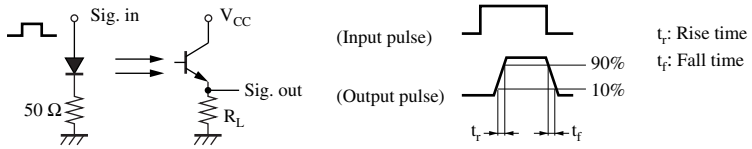
■ Electrical-Optical Characteristics T_a = 25°C ± 3°C

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Photocurrent *1	$I_{CE(L)}$	V_{CE} = 10 V, L = 500 lx	1.0	4.0		µA
Dark current	I_{CEO}	V_{CE} = 10 V		0.01	1.00	µA
Peak sensitivity wavelength	λ_p	V_{CE} = 10 V		800		nm
Half-power angle	θ	The angle from which photocurrent becomes 50%		40		°
Rise time *2	t_r	V_{CC} = 10 V, $I_{CE(L)}$ = 5 mA, R_L = 100 Ω		4	10	µs
Fall time *2	t_f			4	10	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.

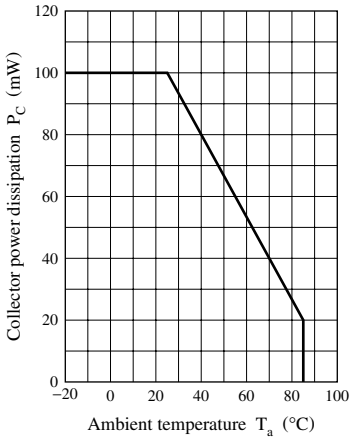
2. ∗1: Source: Tungsten (color temperature 2 856 K)

∗2: Switching time measurement circuit

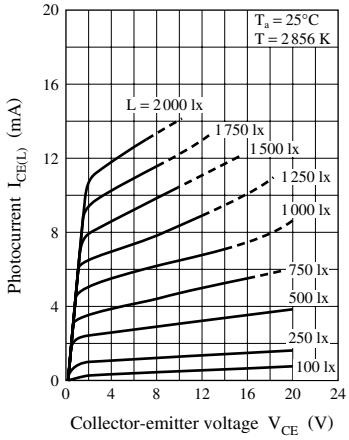


Note) The part number in the parenthesis shows conventional part number.

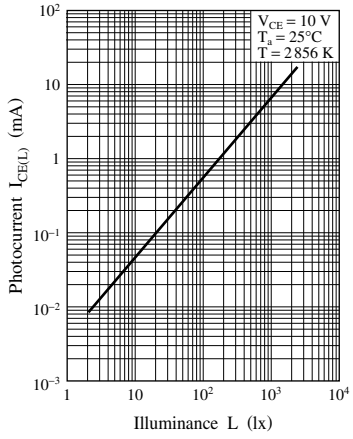
P_C — T_a



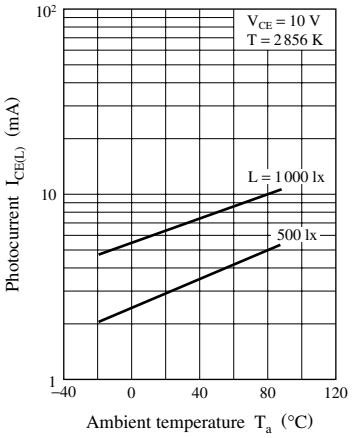
$I_{CE(L)}$ — V_{CE}



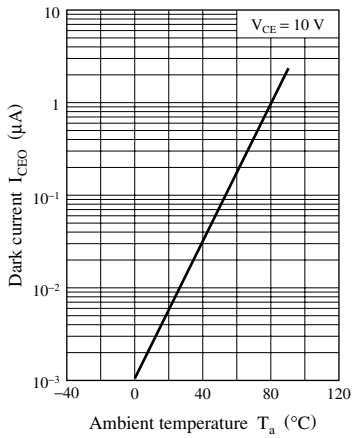
$I_{CE(L)}$ — L



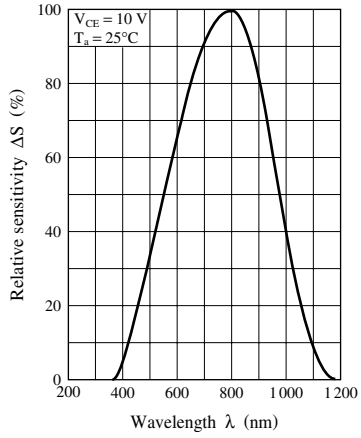
$I_{CE(L)}$ — T_a



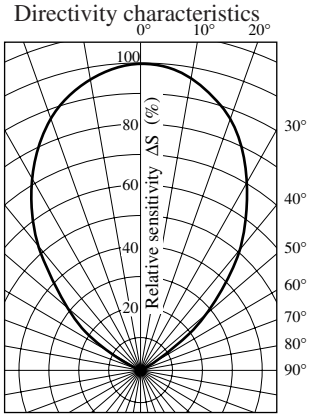
I_{CEO} — T_a



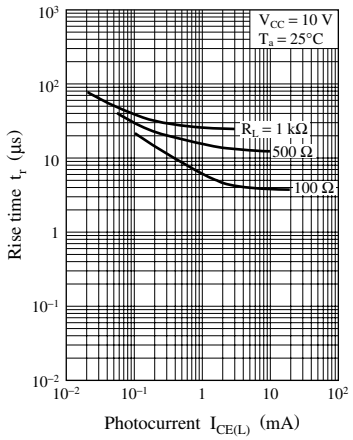
Spectral sensitivity characteristics



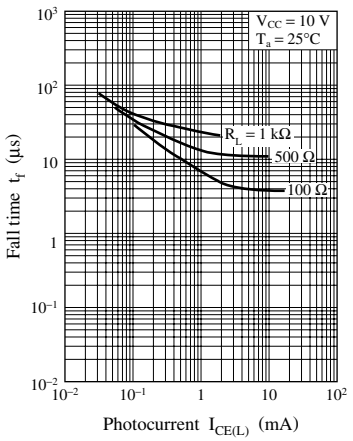
Directivity characteristics



t_r — $I_{CE(L)}$



t_f — $I_{CE(L)}$



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