

PNZ102F (PN102F)

Silicon planar type

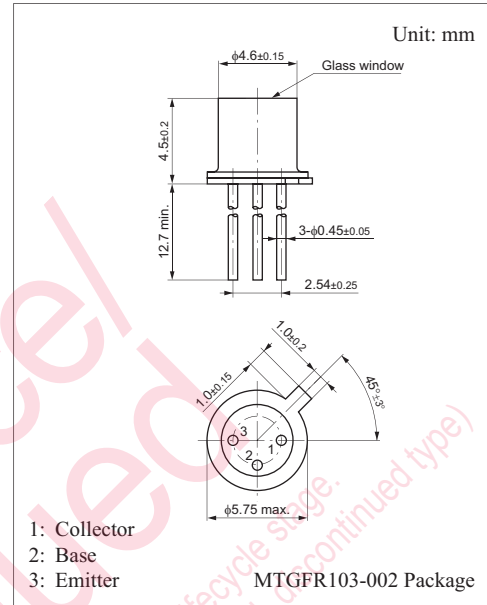
For optical control systems

■ Features

- Low dark current: $I_{CEO} = 5 \text{ nA (typ.)}$
- Fast response: $t_r, t_f = 3 \text{ } \mu\text{s (typ.)}$
- Wide directivity characteristics

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-emitter voltage (Base open)	V_{CEO}	30	V
Collector-base voltage (Emitter open)	V_{CBO}	40	V
Emitter-collector voltage (Base open)	V_{ECO}	5	V
Emitter-base voltage (Collector open)	V_{EBO}	5	V
Collector current	I_C	50	mA
Collector power dissipation	P_C	150	mW
Operating ambient temperature	T_{opr}	-25 to +85	$^\circ\text{C}$
Storage temperature	T_{stg}	-30 to +100	$^\circ\text{C}$

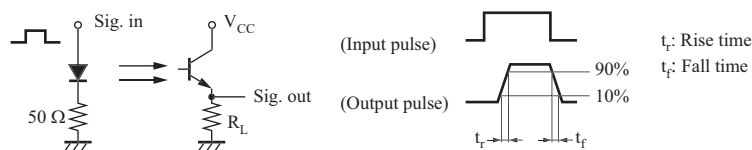


■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

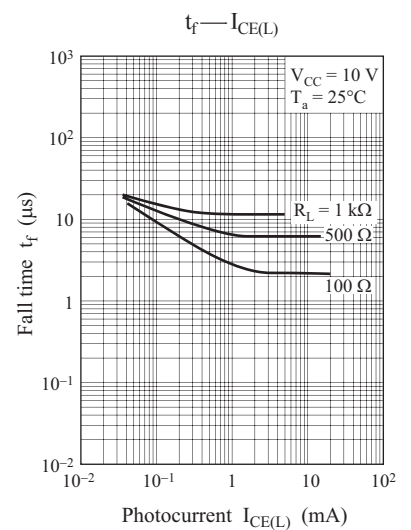
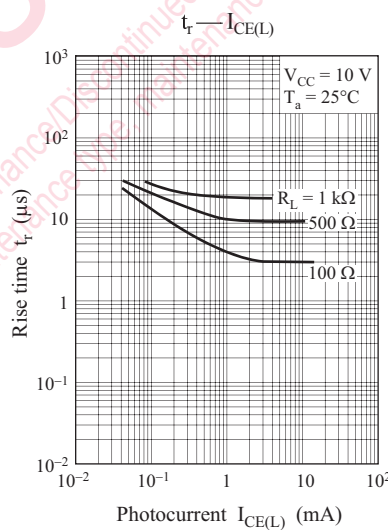
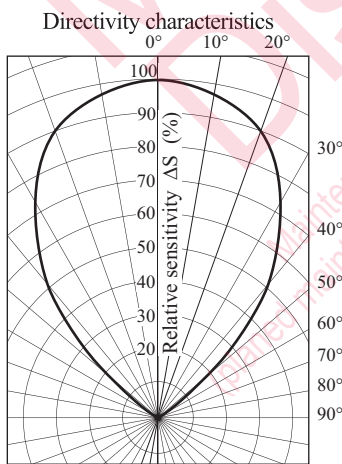
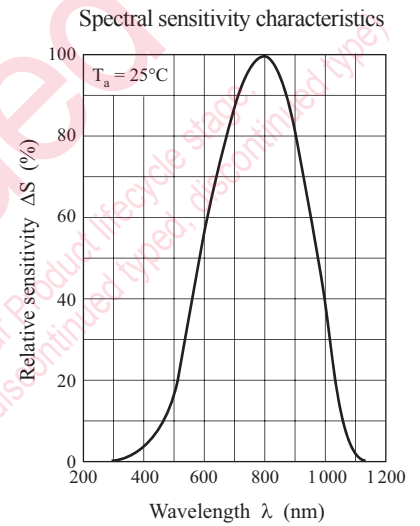
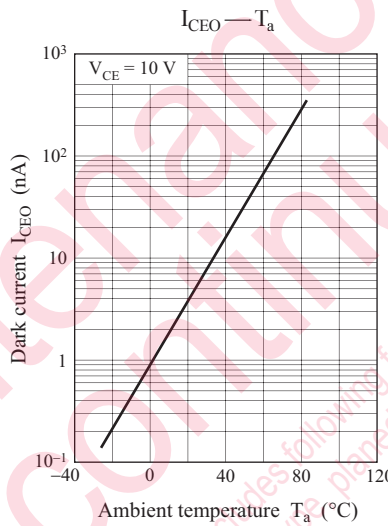
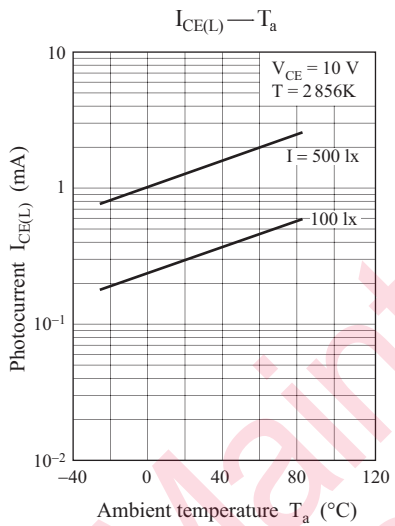
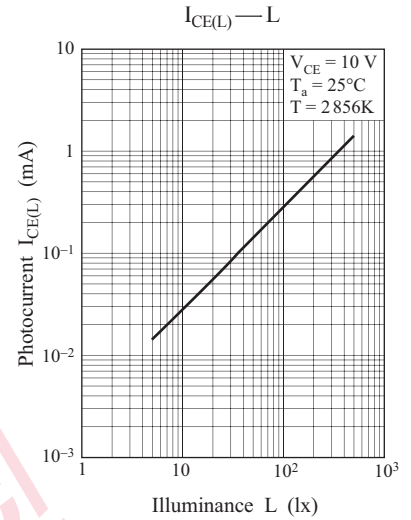
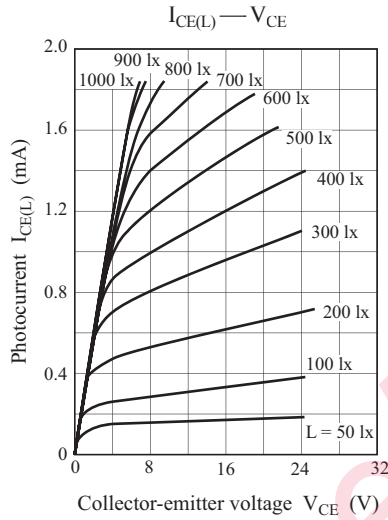
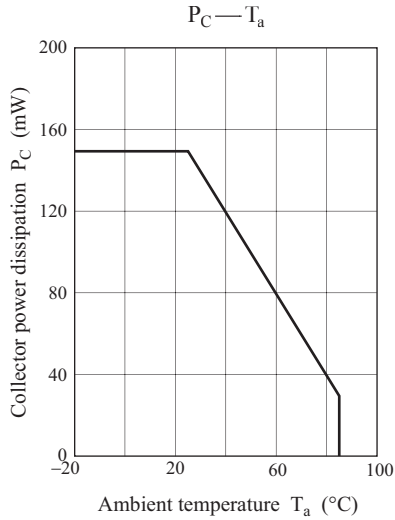
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Photocurrent *1	$I_{CE(L)}$	$V_{CE} = 10 \text{ V}, L = 100 \text{ lx}$	0.1	0.3		mA
Dark current	I_{CEO}	$V_{CE} = 10 \text{ V}$		5	300	nA
Peak sensitivity wavelength	λ_p	$V_{CE} = 10 \text{ V}$		800		nm
Half-power angle	θ	The angle from which photocurrent becomes 50%		40		$^\circ$
Rise time *2	t_r	$V_{CC} = 10 \text{ V}, I_{CE(L)} = 5 \text{ mA}, R_L = 100 \text{ } \Omega$		3		μs
Fall time *2	t_f			3		μs
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_{CE(L)} = 0.1 \text{ mA}, L = 500 \text{ lx}$		0.2	0.4	V

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

- The rate of electric power reduction is $2.0 \text{ mW}/^\circ\text{C}$ above $T_a = 25^\circ\text{C}$.
- Spectral sensitivity characteristics: Sensitivity for wave length over 400 nm maximum sensitivity ratio is 100%.
- This device is designed by disregarding radiation.
- *1: Source: Tungsten (color temperature 2 856 K)
- *2: Switching time measurement circuit



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



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