PNZ108CL (PN108CL)

Silicon planar type

For optical control systems

■ Features

- High sensitivity: I_L = 3.5 mA (min.)
- Narrow directivity characteristics for effective use of light input
- Fast response: t_r = 5 μs (typ.)
- Signal mixing capability using base pin
- Small size (low in height) package

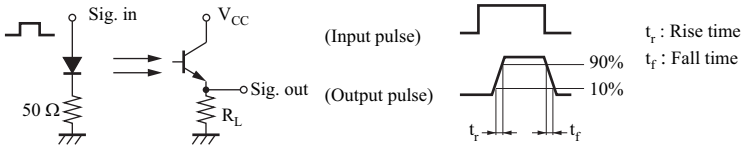
■ Absolute Maximum Ratings T_a = 25°C

Parameter	Symbol	Rating	Unit
Collector-emitter voltage (Base open)	V_{CEO}	20	V
Collector-base voltage (Emitter open)	V_{CBO}	30	V
Emitter-collector voltage (Base open)	V_{ECO}	3	V
Emitter-base voltage (Collector open)	V_{EBO}	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

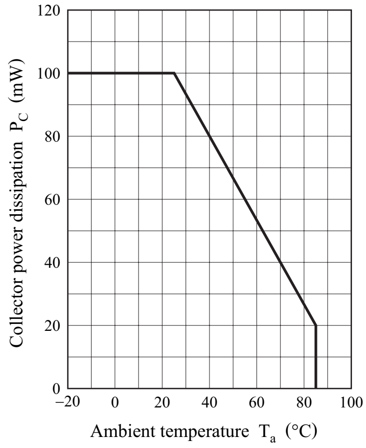
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Photocurrent *1	I_L	V_{CE} = 10 V, L = 500 lx	3.5			mA
Collector-emitter cutoff current (Base open)	I_{CEO}	V_{CE} = 10 V		0.05	2.0	μA
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	I_L = 1 mA, L = 1 000 lx		0.3	0.6	V
Peak sensitivity wavelength	λ_{PD}	V_{CE} = 10 V		900		nm
Half-power angle	θ	The angle when the photocurrent is halved		80		°
Rise time *2	t_r	V_{CC} = 10 V, I_L = 5 mA, R_L = 100 Ω		5		μs
Fall time *2	t_f			6		μs

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 by disregarding radiation.
4. *1:Source: Tungsten lamp (color temperature 2 856K)
*2: Switching time measurement circuit

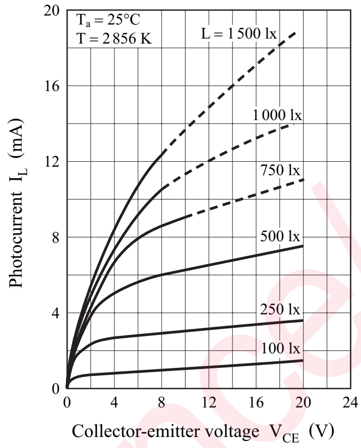


Note) The part number in the parenthesis shows conventional part number.

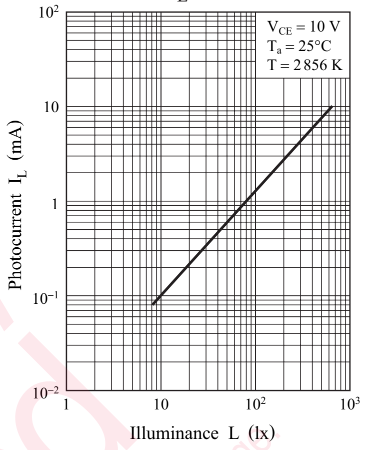
P_C — T_a



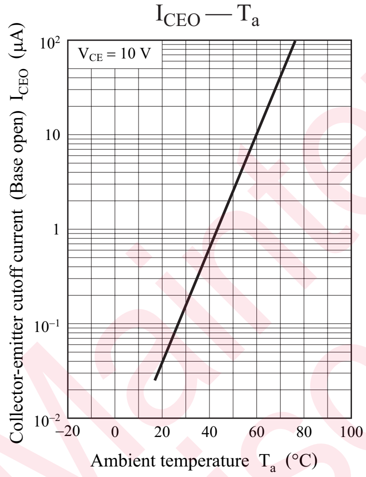
I_L — V_{CE}



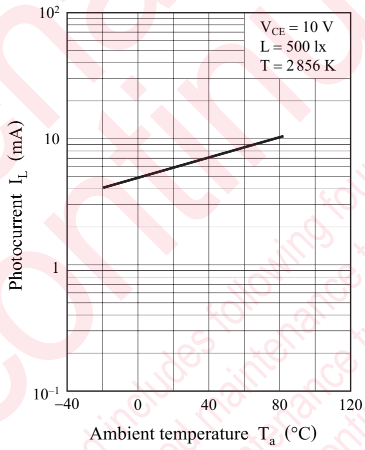
I_L — L



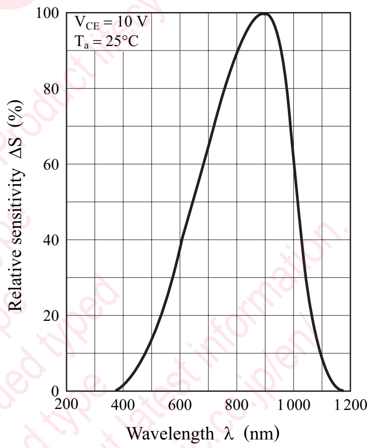
I_{CEO} — T_a



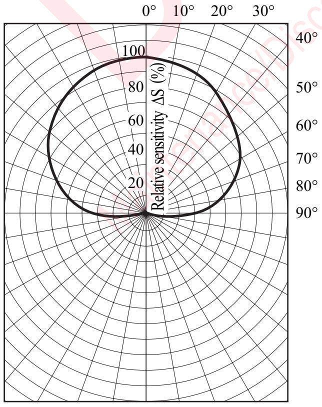
I_L — T_a



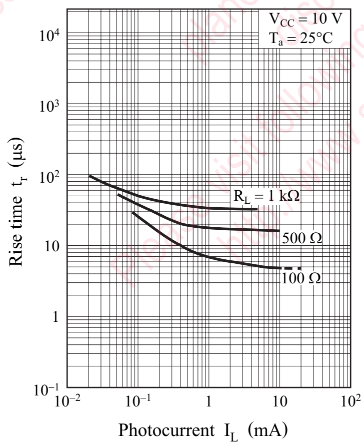
ΔS — λ



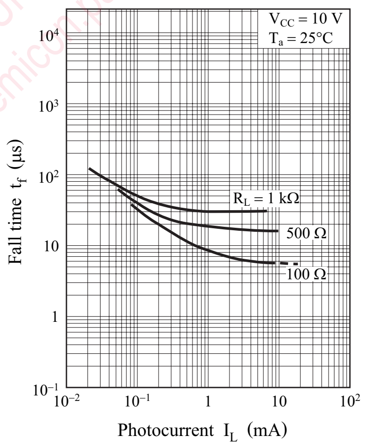
Directive characteristics



t_r — I_L

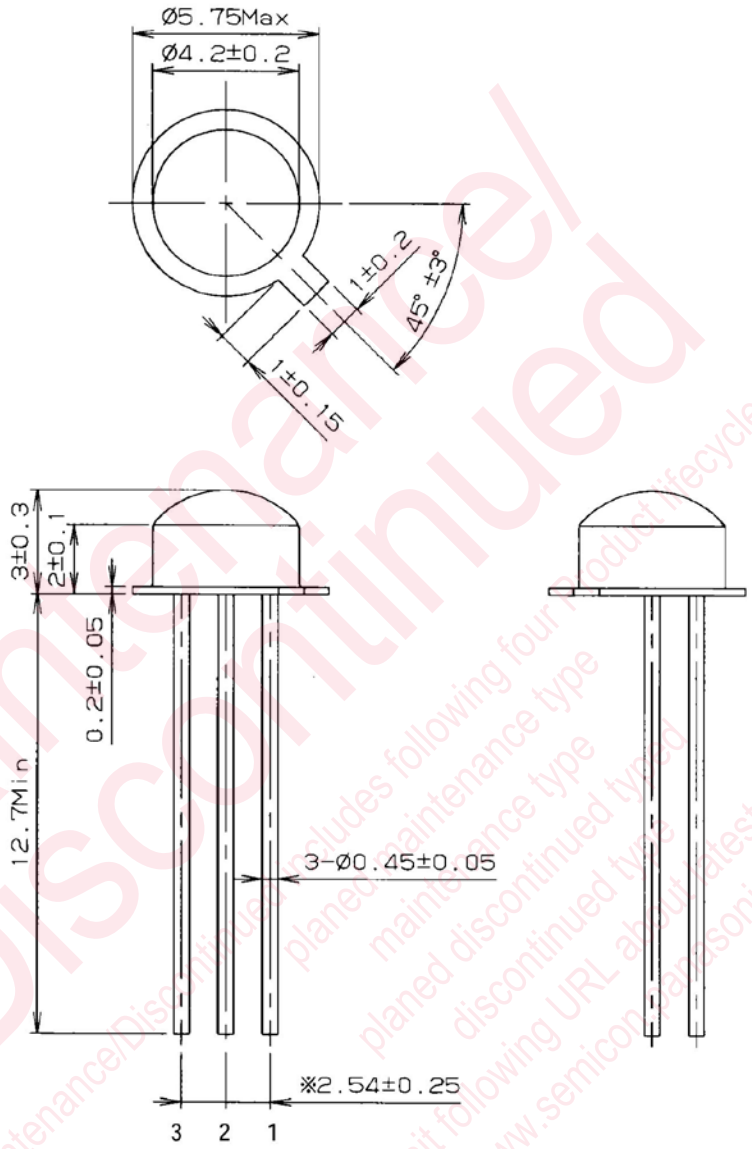


t_f — I_L



■ Package (Unit: mm)

MPDLTN3S0001



- Pin name
  1: Emitter
  2: Base
  3: Collector

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