PNA1601M (PN166)

Silicon planar type

For optical control systems

■ Features

- High sensitivity
- Wide sspectral sensitivity characteristics, suited for detecting various kinds of LEDs
- Ultraminiature, thin side-view type package

■ Absolute Maximum Ratings $T_a = 25°C$

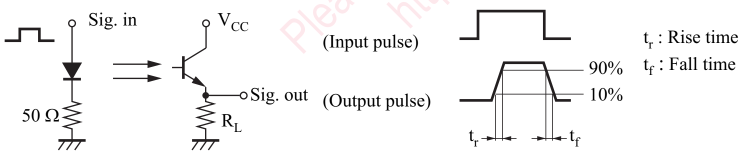
Parameter	Symbol	Rating	Unit
Collector-emitter voltage (Base open)	V_{CEO}	20	V
Collector current	I_C	20	mA
Collector power dissipation *	P_C	50	mW
Operating ambient temperature	T_{opr}	–25 to +65	°C
Storage temperature	T_{stg}	–30 to +85	°C

Note) *: The rate of electric power reduction is 1.5 mW/°C above $T_a = 25°C$.

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

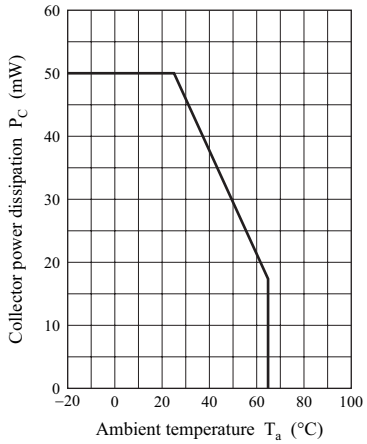
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Sensitivity to infrared radiation *1	S_{IR}	V_{CE} = 10 V, H = 15 µW/cm²	3	5	25	µA
Collector-emitter cutoff current (Base open)	I_{CEO}	V_{CE} = 10 V			0.2	µA
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	I_C = 10 µA, H = 15 µW/cm²			0.5	V
Peak sensitivity wavelength	λ_{PD}	V_{CE} = 10 V		850		nm
Half-power angle	θ	The angle when the sensitivity to infrared radiation is halved		35		°
Rise time *2	t_r	V_{CC} = 10 V, I_C = 5 mA, R_L = 100 Ω		4		µs
Fall time *2	t_f			4		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: Infrared radiation (λ = 940 nm)
*2: Switching time measurement circuit

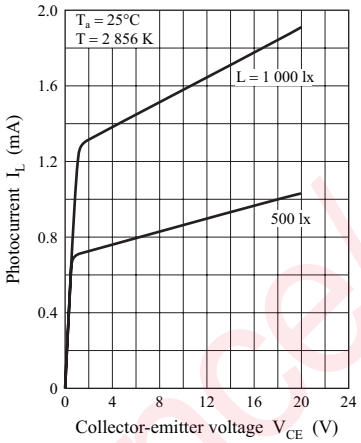


Note) The part number in the parenthesis shows conventional part number.

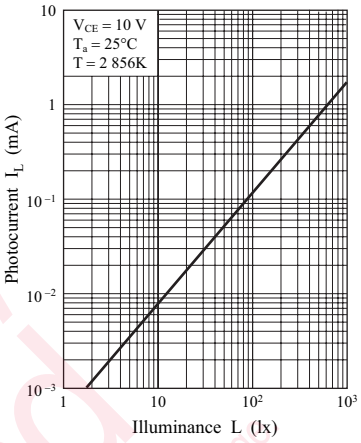
P_C — T_a



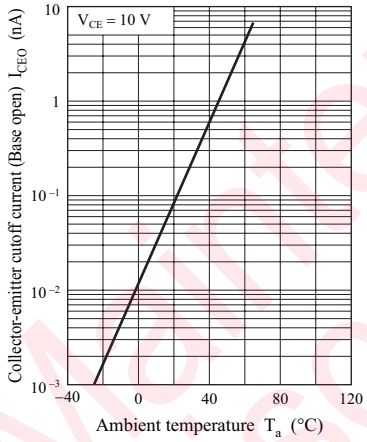
I_L — V_{CE}



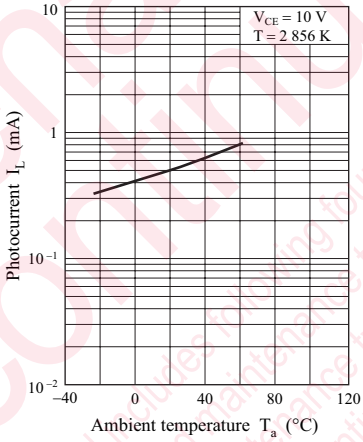
I_L — L



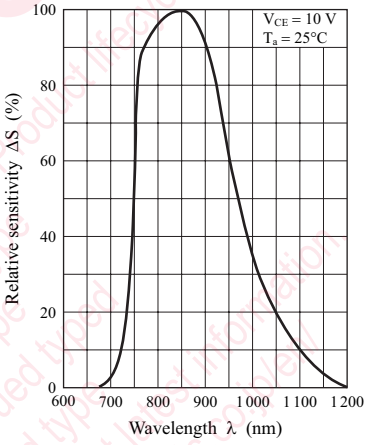
I_{CEO} — T_a



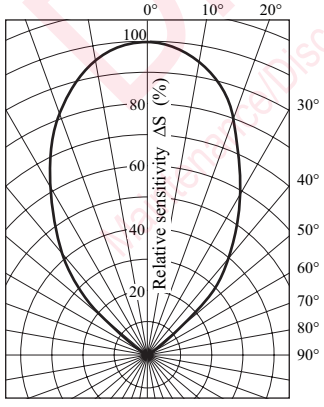
I_L — T_a



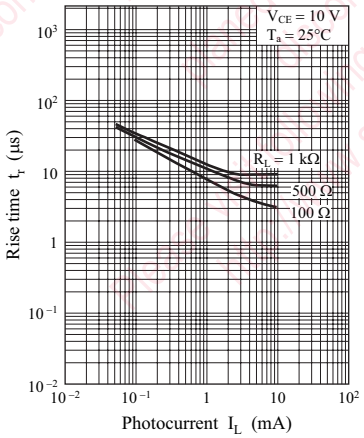
ΔS — λ



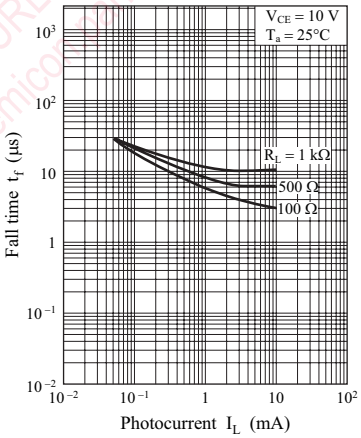
Directive characteristics



t_r — I_L

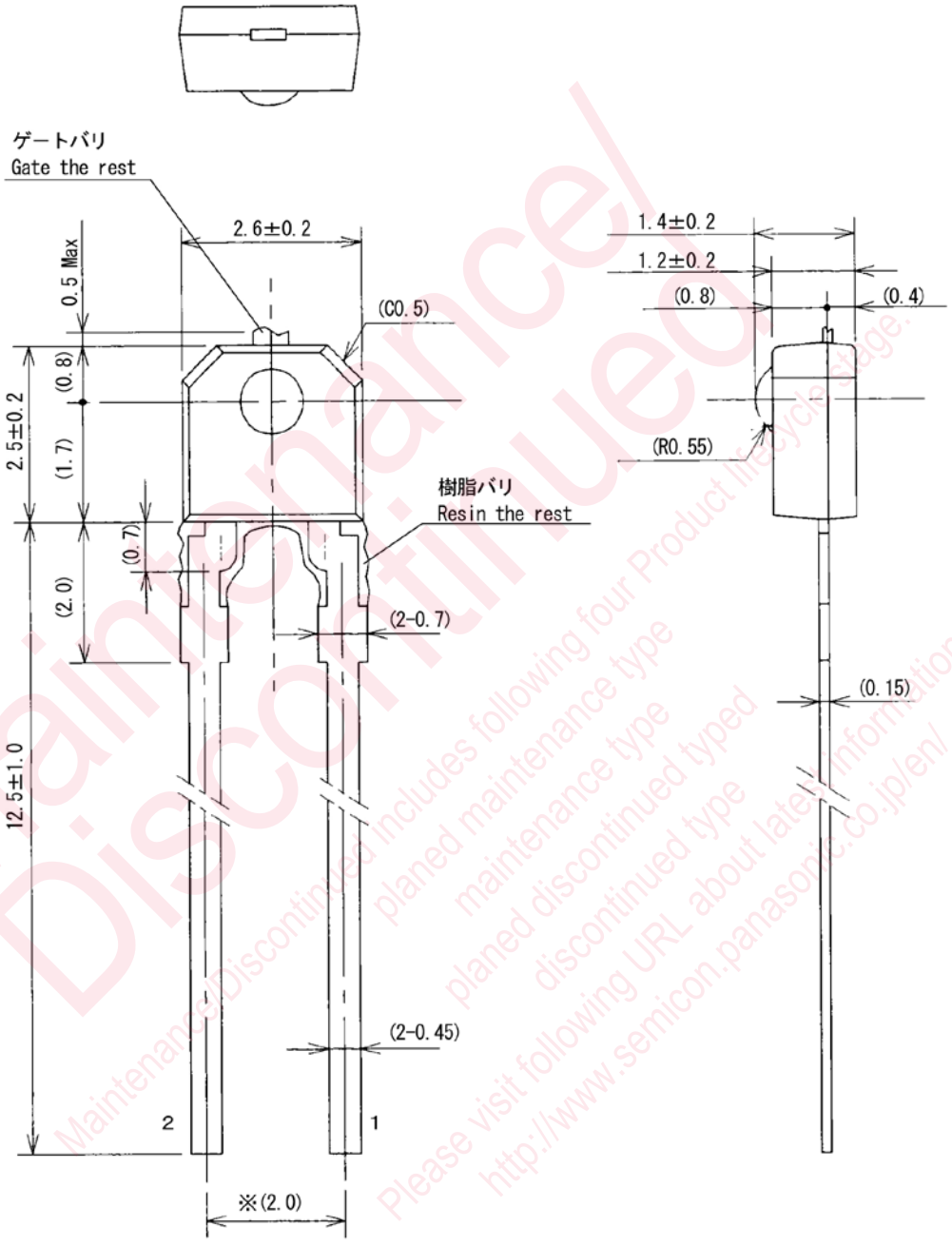


t_f — I_L



■ Package (Unit: mm)

LPTLSN2S0004



(注 1)※リード根元寸法とする。／(Note1)※Indicates root dimensions of lead.

- Pin name
  1: Collector
  2: Emitter

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