# **PNA1801L** (PN168)

## Silicon planar type

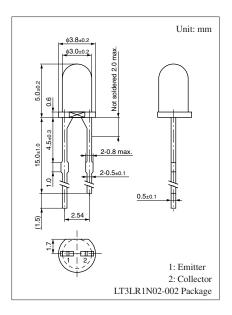
#### For optical control systems

#### ■ Features

- · High sensitivity
- Wide spectral sensitivity characteristics, suited for detecting GaAs I FDs
- Small size, high output power, low cost
- \$\psi 3\$ shell type plastic package

#### ■ Absolute Maximum Ratings $T_a = 25$ °C

Parameter	Symbol	Rating	Unit
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	30	V
Emitter-collector voltage (Base open)	V <sub>ECO</sub>	5	V
Collector current	$I_C$	20	mA
Collector power dissipation *	P <sub>C</sub>	100	mW
Operating ambient temperature	$T_{opr}$	-25 to +85	°C
Storage temperature	T <sub>stg</sub>	-30 to +100	°C



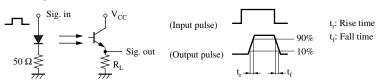
### ■ Electrical-Optical Characteristics $T_a = 25$ °C $\pm 3$ °C

Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Photocurrent *1, *2	I <sub>CE(L)</sub>	$V_{CE} = 10 \text{ V}, L = 500 \text{ lx}$	0.8	3.0	9.6	mA
Dark current	$I_{CEO}$	$V_{CE} = 10 \text{ V}$		5	500	nA
Peak emission wavelength	$\lambda_{\mathrm{p}}$	$V_{CE} = 10 \text{ V}$		800		nm
Half-power angle	θ	The angle from which photocurrent		30		0
		becomes 50%				
Rise time *3	t <sub>r</sub>	$V_{CC} = 10 \text{ V}, I_{CE(L)} = 1 \text{ mA}, R_L = 100 \Omega$		4		μs
Fall time *3	$t_{\rm f}$			4		μs
Collector-emitter saturation voltage *1	V <sub>CE(sat)</sub>	$I_{CE(L)} = 1 \text{ mA}, L = 1000 \text{ lx}$		0.2	0.5	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.
  - 4. \*1: Source: Tungsten (color temperature 2856 K)
    - \*2: Rank classification

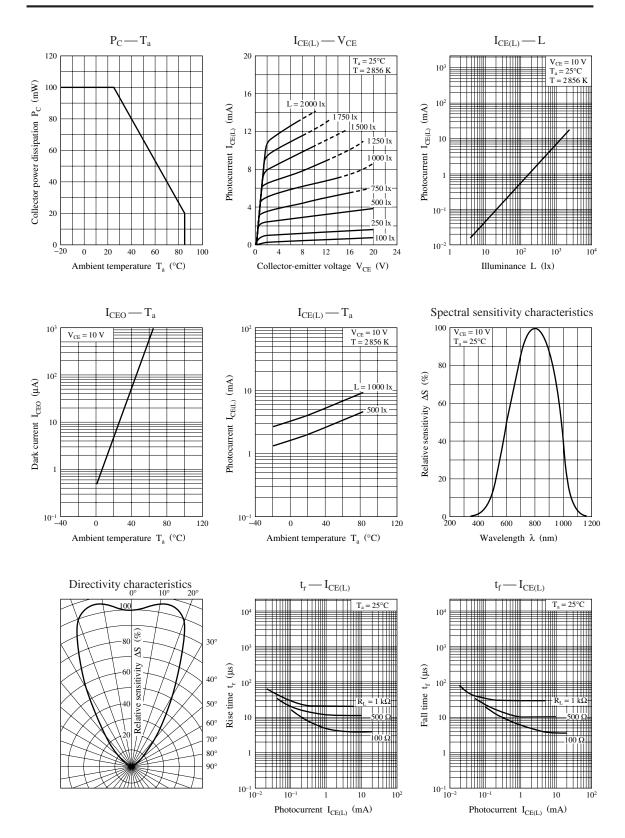
Rank	Q	R	S
I <sub>CE(L)</sub> (mA)	0.8 to 2.4	1.6 to 4.8	3.2 to 9.6

\*3: Switching time measurement circuit



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

## **Panasonic**



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