

PNA1401L (PN101)

Silicon NPN Phototransistor

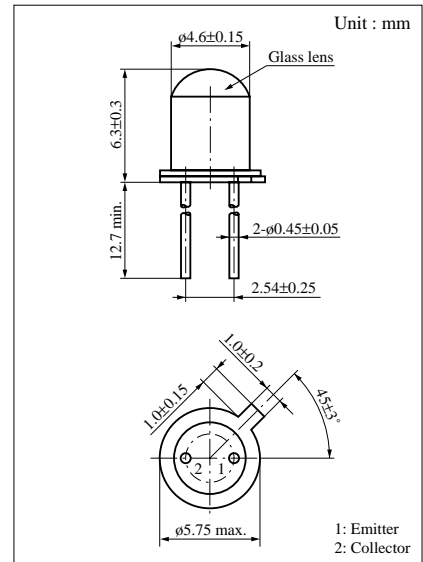
For optical control systems

■ Features

- High sensitivity
- Wide spectral sensitivity, suited for detecting GaAs LED's
- Low dark current : $I_{CEO} = 5 \text{ nA}$ (typ.)
- Fast response : $t_r, t_f = 3 \mu\text{s}$ (typ.)
- TO-18 standard type package

■ Absolute Maximum Ratings (Ta = 25°C)

| Parameter | Symbol | Ratings | Unit |
|-------------------------------|-----------|-------------|------|
| Collector to emitter voltage | V_{CEO} | 30 | V |
| Emitter to collector voltage | V_{ECO} | 5 | V |
| Collector current | I_C | 50 | mA |
| Collector power dissipation | P_C | 150 | mW |
| Operating ambient temperature | T_{opr} | -25 to +85 | °C |
| Storage temperature | T_{stg} | -30 to +100 | °C |

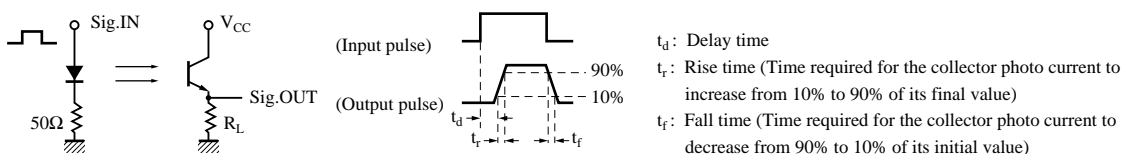


■ Electro-Optical Characteristics (Ta = 25°C)

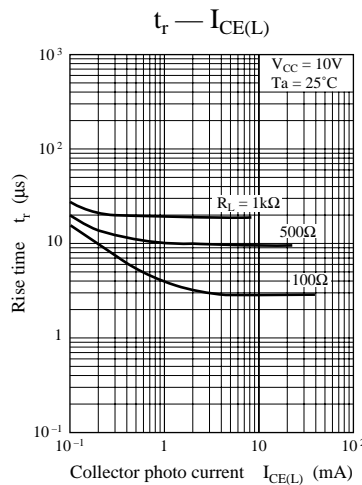
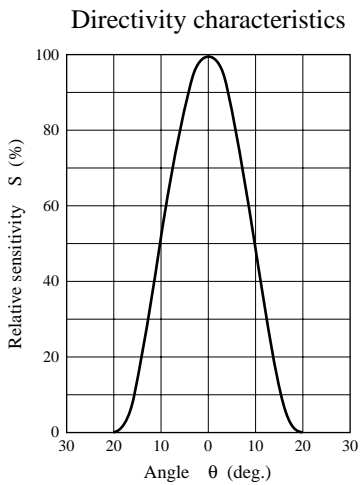
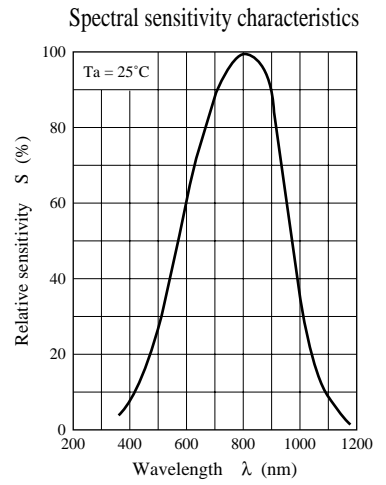
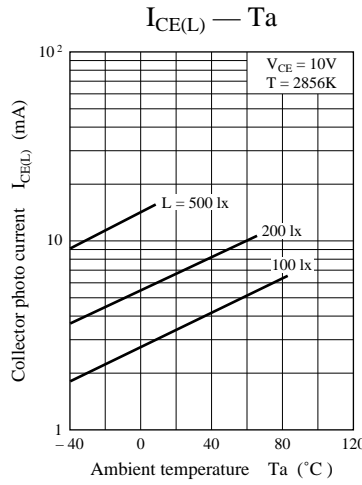
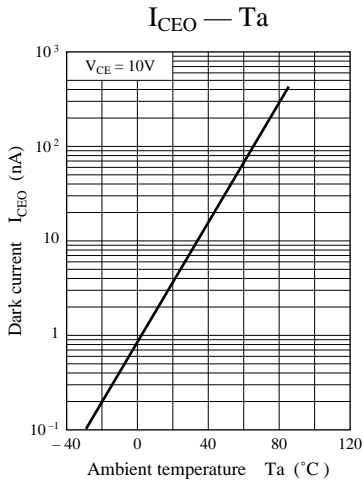
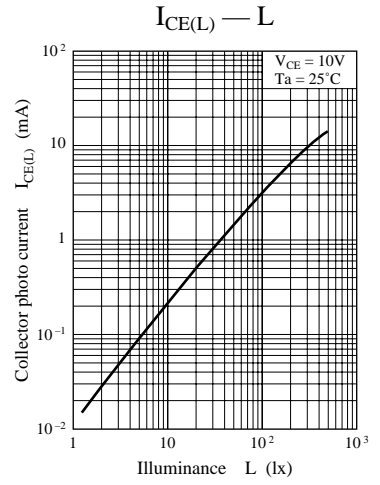
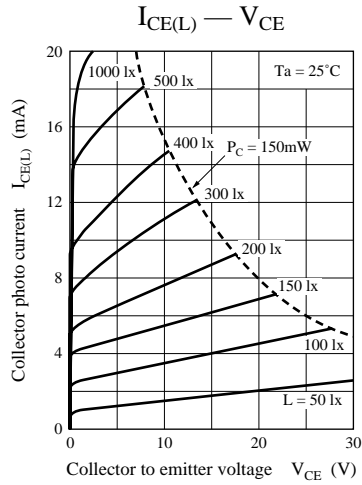
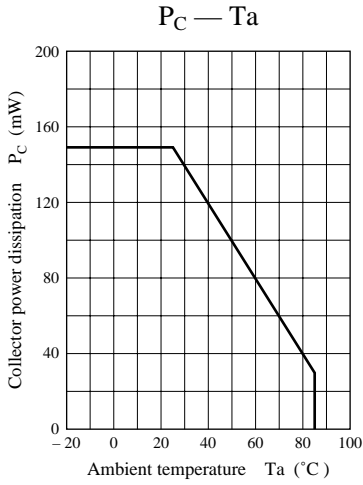
| Parameter | Symbol | Conditions | min | typ | max | Unit |
|------------------------------|-----------------|--|-----|-----|-----|---------------|
| Dark current | I_{CEO} | $V_{CE} = 10\text{V}$ | | 5 | 300 | nA |
| Collector photo current | $I_{CE(L)}$ | $V_{CE} = 10\text{V}, L = 100 \text{ lx}^{*1}$ | 1.5 | 3.5 | | mA |
| Peak sensitivity wavelength | λ_p | $V_{CE} = 10\text{V}$ | | 800 | | nm |
| Acceptance half angle | θ | Measured from the optical axis to the half power point | | 10 | | deg. |
| Response time | t_r, t_f^{*2} | $V_{CC} = 10\text{V}, I_{CE(L)} = 5\text{mA}, R_L = 100\Omega$ | | 3 | | μs |
| Collector saturation voltage | $V_{CE(sat)}$ | $I_{CE(L)} = 1\text{mA}, L = 500 \text{ lx}^{*1}$ | | 0.2 | 0.4 | V |

*1 Measurements were made using a tungsten lamp (color temperature T = 2856K) as a light source.

*2 Switching time measurement circuit



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



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