

PN312C, PN312D

Si PIN Dual Photodiodes

Optical Information Systems

■ Features

- Fast response: $t_r, t_f=10\text{ns}$ (typ.)
- Good linearity of photo current
- Low dark current: $I_D=20\text{nA}$ (max.)
- Small package (Flat type)
- PN312C: Clear plastic package
- PN312D: Using plastic package to cut-off visible light

■ Application

- Auto focus, distance measuring system of still and video camera
- Position sensor of automatic assembly line
- Eye of industrial robot

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

| Item | Symbol | Value | Unit |
|-------------------------------|-----------|---------------|------------------|
| Reverse Voltage (DC) | V_R | 30 | V |
| Power Dissipation | P_D | 30 | mW |
| Operating Ambient Temperature | T_{opr} | $-25\sim+85$ | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | $-30\sim+100$ | $^\circ\text{C}$ |

■ Electro-Optical Characteristics ($T_a=25^\circ\text{C}$)

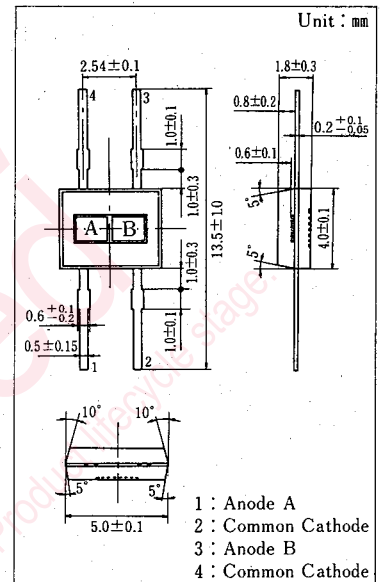
| Item | Symbol | Condition | min. | typ. | max. | Unit |
|-------------------------------|-----------------|---|--------|------|------|---------------|
| Reverse Voltage (DC) | V_R | $I_R=10\mu\text{A}$ | 30 | | | V |
| Dark Current | I_D | $V_R=10\text{V}$ | | | 20 | nA |
| Photo Current | I_L^{*3} | $V_R=10\text{V},$ $L=1000\text{lx}^{*1}$ | PN312C | 10 | 15 | μA |
| | | | PN312D | 8 | 12 | |
| | | $V_R=10\text{V}, \lambda=900\text{nm},$ $E=1\text{mW}/\text{cm}^2$ | PN312C | | 10 | μA |
| | | | PN312D | | 9 | |
| Peak Sensitivity Wavelength | λ_p | $V_R=10\text{V}$ | PN312C | | 900 | nm |
| | | | PN312D | | 940 | |
| Response Time | t_r, t_f^{*2} | $V_R=10\text{V}, R_L=1\text{k}\Omega$ | | 10 | | ns |
| Capacitance between Terminals | C_t | $V_R=10\text{V}, f=1\text{MHz}$ | | 5 | | pF |
| Acceptance Half Angle | θ | Measured from the optical axis to the half power point | | 65 | | deg. |

Note) Maximum Ratings and Characteristics are specified per each element.

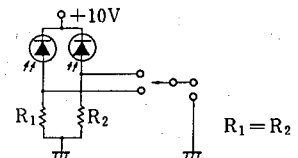
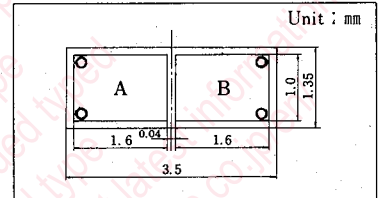
*1 Source: Tungsten 2856K

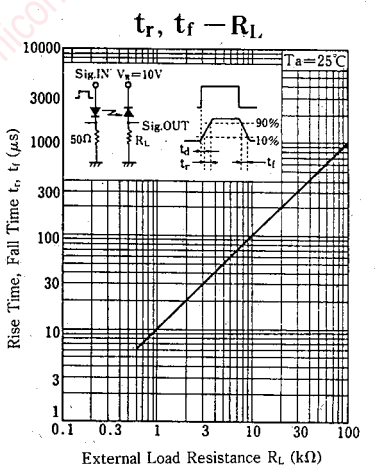
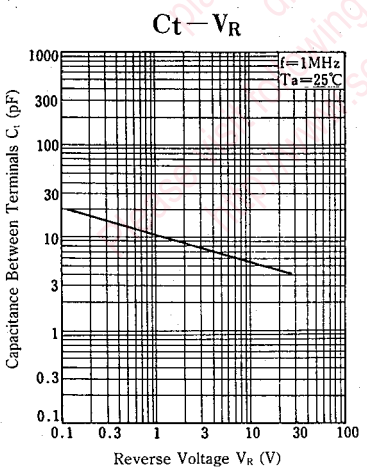
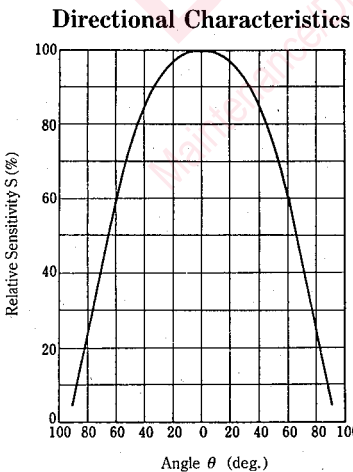
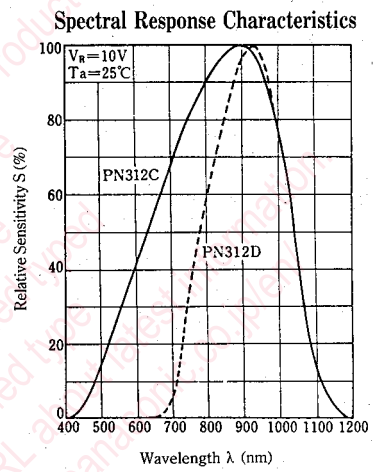
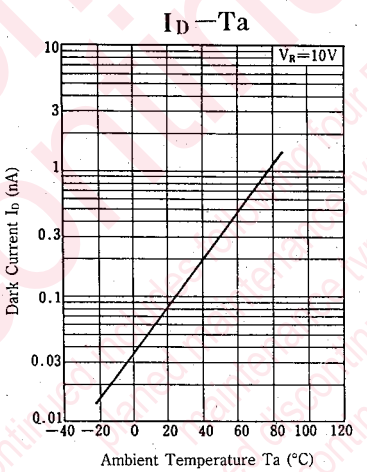
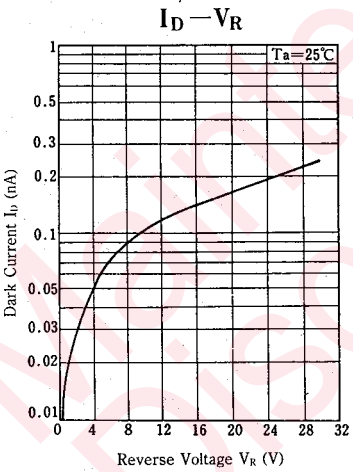
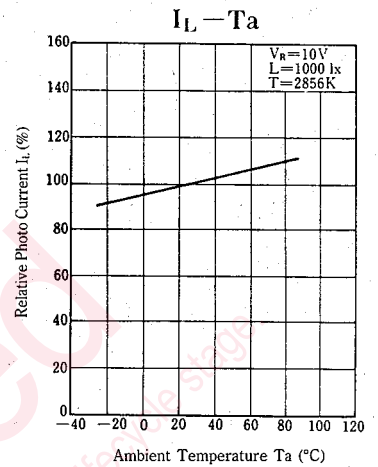
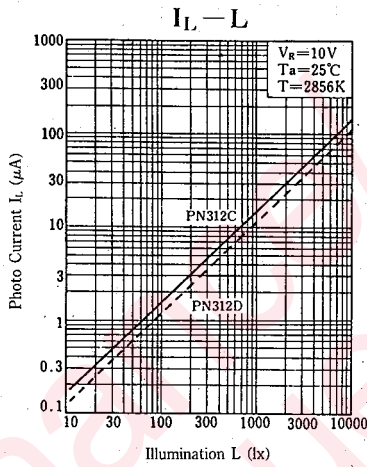
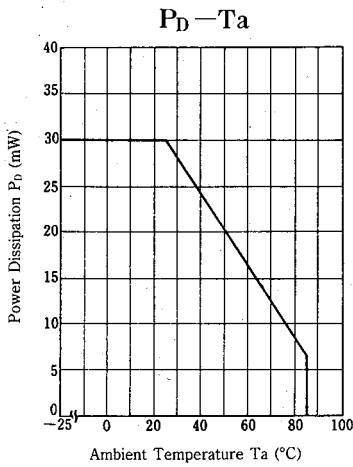
*2 Source: Laser Diode $\lambda=800\text{nm}$

*3 Photo Current Measuring Circuit



■ Dimensions





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