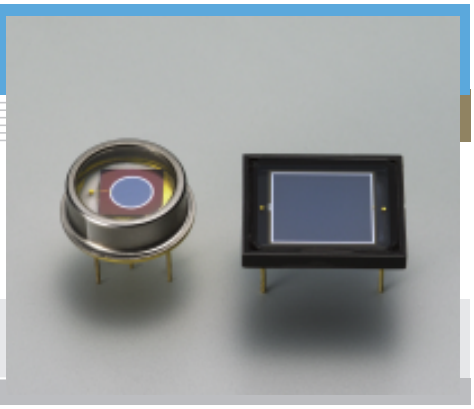
# Si PIN photodiode
# S1722-02, S1723-05

## Large area, high-speed PIN photodiodes for UV to near IR photometry



S1722-02 and S1723-05 are high-speed Si PIN photodiodes having a large active area of ϕ4.1 mm (S1722-02) or 10 × 10 mm (S1723-05). Using quartz glass as the light input window, these photodiodes deliver high sensitivity extending to the far UV region and are suitable for optical power meters.

### Features

- Quartz glass window
- High UV sensitivity
- Large active area
  S1722-02: ϕ4.1 mm
  S1723-05: 10 × 10 mm
- High-speed response
  S1722-02: 60 MHz ($V_R$=100 V)
  S1723-05: 15 MHz ($V_R$=30 V)

### Applications

- Optical power meter
- Radiation detector

■ General ratings / Absolute maximum ratings

| Type No. | Dimensional outline/ Window material *1 | Package (mm) | Active area size (mm) | Effective active area ($mm^2$) | Absolute maximum ratings | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Reverse voltage $V_R$ Max. (V) | Power dissipation P (mW) | Operating temperature Topr (°C) | Storage temperature Tstg (°C) |
| S1722-02 | ①/Q | TO-8 | ϕ4.1 | 13.2 | 120 | 50 | -20 to +60 | -55 to +80 |
| S1723-05 | ②/Q | Ceramic | 10 × 10 | 100 | 50 | 100 | | -20 to +80 |

■ Electrical and optical characteristics (Typ. Ta=25 °C, unless otherwise noted)

| Type No. | Spectral response range λ (nm) | Peak sensitivity wavelength λp (nm) | Photo sensitivity S (A/W) | | Dark current $I_D$ Max. (nA) | Temp. coefficient of $I_D$ $T_{CID}$ (times/°C) | Cut-off frequency fc (MHz) | Terminal capacitance Ct (pF) | NEP (W/$Hz^{1/2}$) |
|---|---|---|---|---|---|---|---|---|---|
| | | | λp | He-Ne Laser 633 nm | | | | | |
| S1722-02 | 190 to 1100 | 960 | 0.5 | 0.33 | 30 *2 | 1.15 | 60 *2 | 10 *2 | $1.1 \times 10^{-14}$ *2 |
| S1723-05 | | | | | 10 *3 | | 15 *3 | 100 *3 | $2.3 \times 10^{-14}$ *3 |

*1: Window material Q: Quartz glass
*2: $V_R$=100 V
*3: $V_R$=30 V

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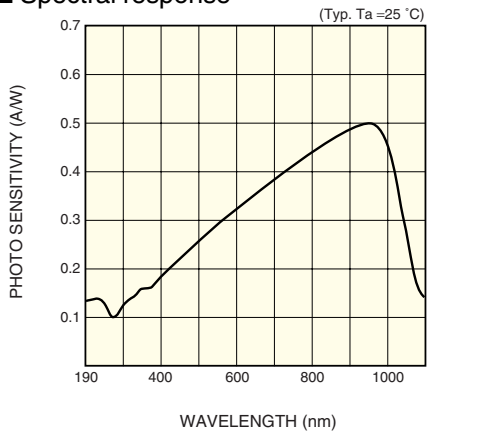
## ■ Spectral response

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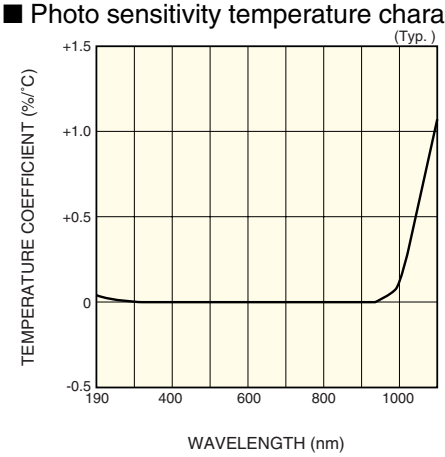
## ■ Photo sensitivity temperature characteristic

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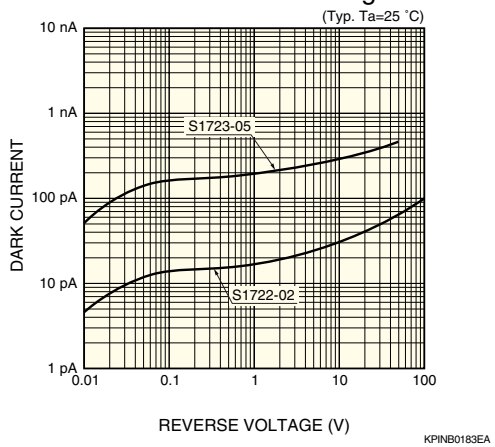
## ■ Dark current vs. reverse voltage

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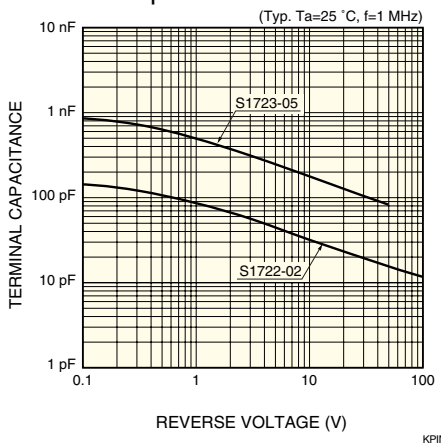
## ■ Terminal capacitance vs. reverse voltage

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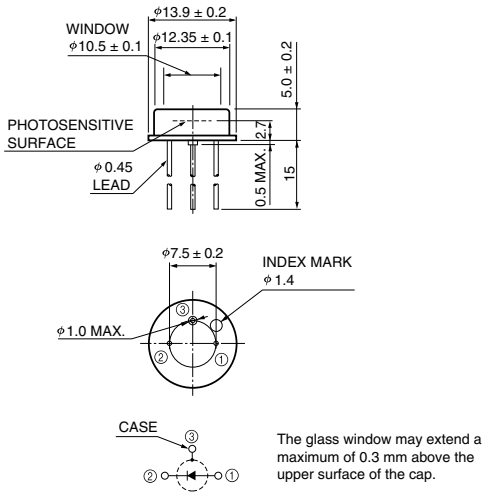
## ■ Dimensional outlines (unit: mm)

### ① S1722-02




The glass window may extend a maximum of 0.3 mm above the upper surface of the cap.

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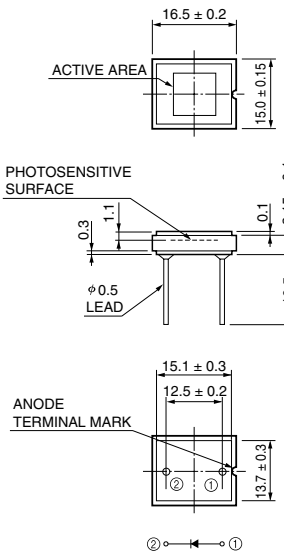
### ② S1723-05

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