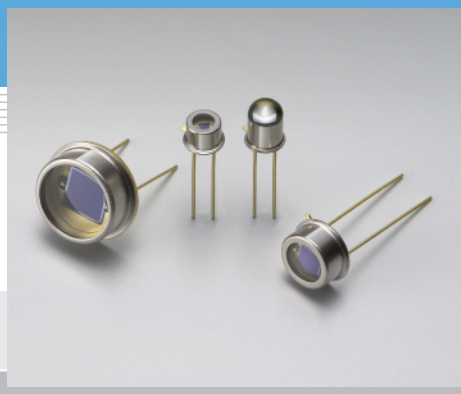


# Si photodiode S2386 series

For visible to IR, general-purpose photometry



## Features

- High sensitivity
- Low dark current
- High reliability
- High linearity

## Applications

- Analytical equipment
- Optical measurement equipment

### ■ General ratings / Absolute maximum ratings

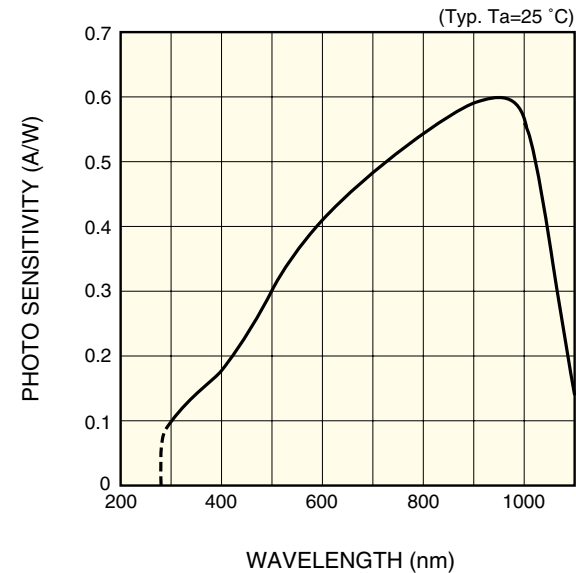
| Type No.  | Dimensional outline/<br>Window material * | Package<br>(mm) | Active area size<br>(mm) | Effective active area<br>(mm <sup>2</sup> ) | Absolute maximum ratings                      |                                                   |                                                 |
|-----------|-------------------------------------------|-----------------|--------------------------|---------------------------------------------|-----------------------------------------------|---------------------------------------------------|-------------------------------------------------|
|           |                                           |                 |                          |                                             | Reverse voltage<br>V <sub>R</sub> Max.<br>(V) | Operating temperature<br>T <sub>opr</sub><br>(°C) | Storage temperature<br>T <sub>stg</sub><br>(°C) |
| S2386-18K | ①/K                                       | TO-18           | 1.1 × 1.1                | 1.2                                         | 30                                            | -40 to +100                                       | -55 to +125                                     |
| S2386-18L | ②/L                                       |                 |                          |                                             |                                               |                                                   |                                                 |
| S2386-5K  | ③/K                                       | TO-5            | 2.4 × 2.4                | 5.7                                         |                                               |                                                   |                                                 |
| S2386-44K |                                           |                 | 3.6 × 3.6                | 13                                          |                                               |                                                   |                                                 |
| S2386-45K |                                           |                 | 3.9 × 4.6                | 17.9                                        |                                               |                                                   |                                                 |
| S2386-8K  | ④/L                                       | TO-8            | 5.8 × 5.8                | 33                                          |                                               |                                                   |                                                 |

### ■ Electrical and optical characteristics (Typ. T<sub>a</sub>=25 °C, unless otherwise noted)

| Type No.  | Spectral response range<br>λ<br>(nm) | Peak sensitivity wavelength<br>λp<br>(nm) | Photo sensitivity S<br>(A/W) |                   |                       |                    | Short circuit current<br>Isc<br>100 lx |              | Dark current ID<br>VR=10 mV<br>Max.<br>(pA) | Temp. coefficient of ID<br>TCID<br>(times/°C) | Rise time tr<br>VR=0 V<br>RL=1 kΩ<br>(μs) | Terminal capacitance Ct<br>VR=0 V<br>f=10 kHz<br>(pF) | Shunt resistance<br>Rsh<br>VR=10 mV |              | NEP<br><br>(W/Hz <sup>1/2</sup> ) |
|-----------|--------------------------------------|-------------------------------------------|------------------------------|-------------------|-----------------------|--------------------|----------------------------------------|--------------|---------------------------------------------|-----------------------------------------------|-------------------------------------------|-------------------------------------------------------|-------------------------------------|--------------|-----------------------------------|
|           |                                      |                                           | λp                           | GaP LED<br>560 nm | He-Ne laser<br>633 nm | GaAs LED<br>930 nm | Min.<br>(μA)                           | Typ.<br>(μA) |                                             |                                               |                                           |                                                       | Min.<br>(GΩ)                        | Typ.<br>(GΩ) |                                   |
|           |                                      |                                           |                              |                   |                       |                    |                                        |              |                                             |                                               |                                           |                                                       |                                     |              |                                   |
| S2386-18K | 320 to 1100                          | 960                                       | 0.6                          | 0.38              | 0.43                  | 0.59               | 1                                      | 1.3          | 2                                           | 1.12                                          | 0.4                                       | 140                                                   | 5                                   | 100          | 6.8 × 10 <sup>-16</sup>           |
| S2386-18L |                                      |                                           |                              |                   |                       |                    | 4                                      | 5.7          |                                             |                                               |                                           |                                                       | 25                                  |              |                                   |
| S2386-5K  |                                      |                                           |                              |                   |                       |                    | 4.4                                    | 6.0          |                                             |                                               |                                           |                                                       |                                     | 5            |                                   |
| S2386-44K |                                      |                                           |                              |                   |                       |                    | 9.6                                    | 12           |                                             |                                               |                                           |                                                       |                                     | 20           |                                   |
| S2386-45K |                                      |                                           |                              |                   |                       |                    | 12                                     | 17           |                                             |                                               |                                           |                                                       |                                     | 30           |                                   |
| S2386-8K  |                                      |                                           |                              |                   |                       |                    | 26                                     | 33           |                                             |                                               |                                           |                                                       |                                     | 50           |                                   |

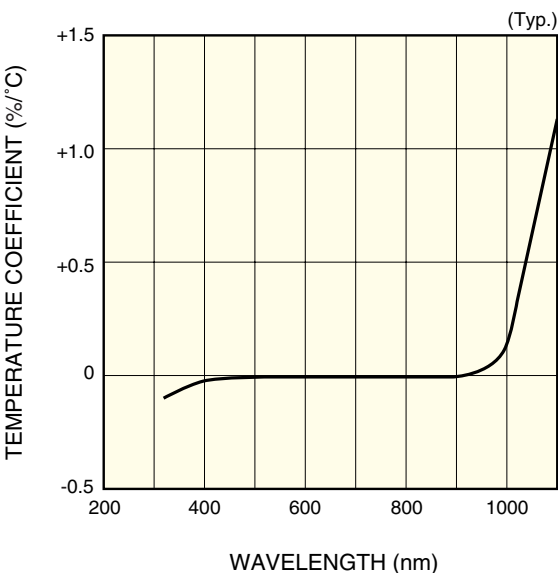
\* Window material K: borosilicate glass, L: lens type borosilicate glass

■ Spectral response



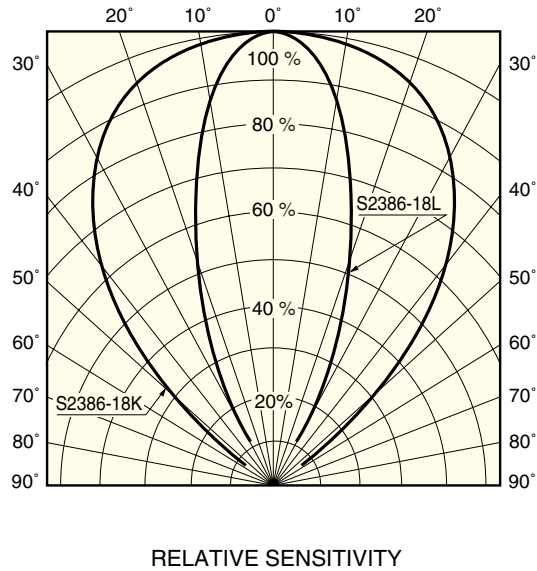
KSPDB0110EA

■ Photo sensitivity temperature characteristic



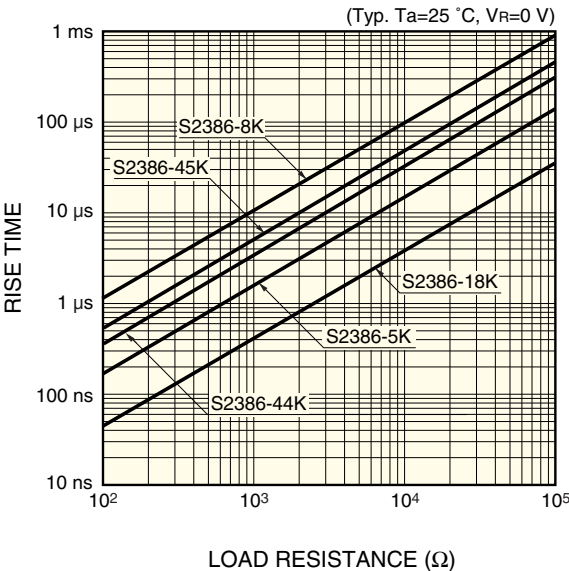
KSPDB0058EB

■ Directivity



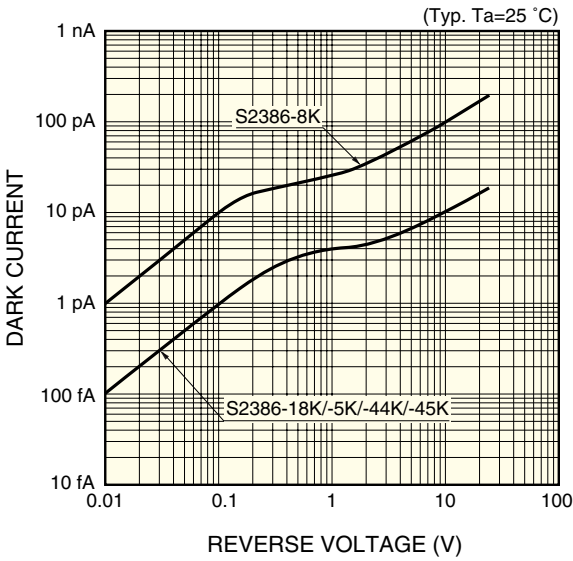
KSPDB0111EA

■ Rise time vs. load resistance



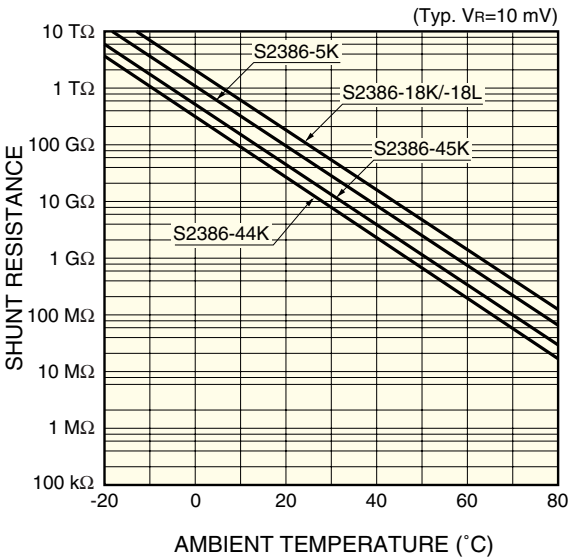
KSPDB0112EA

■ Dark current vs. reverse voltage



KSPDB0113EA

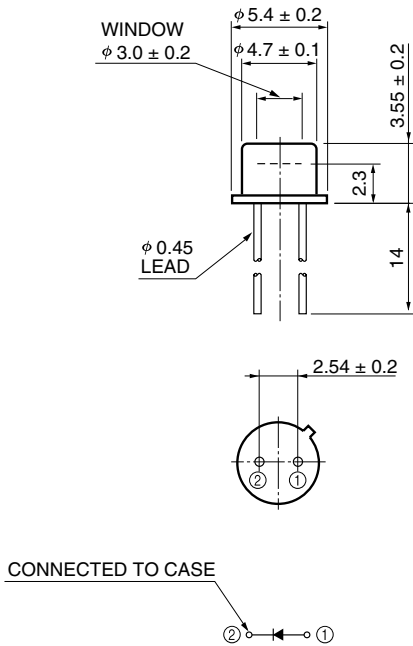
■ Shunt resistance vs. ambient temperature



KSPDB0114EA

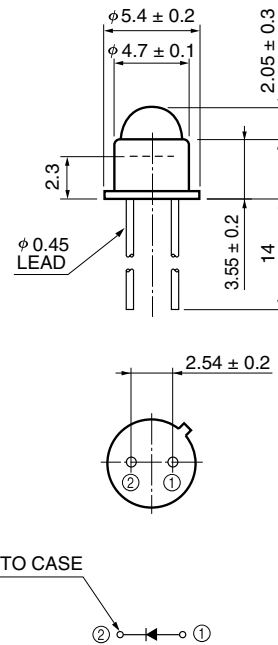
## ■ Dimensional outlines (unit: mm)

① S2386-18K



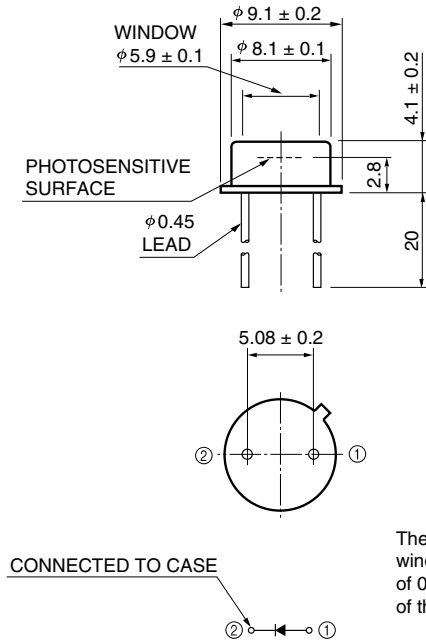
KSPDA0102EA

② S2386-18L



KSPDA0048EA

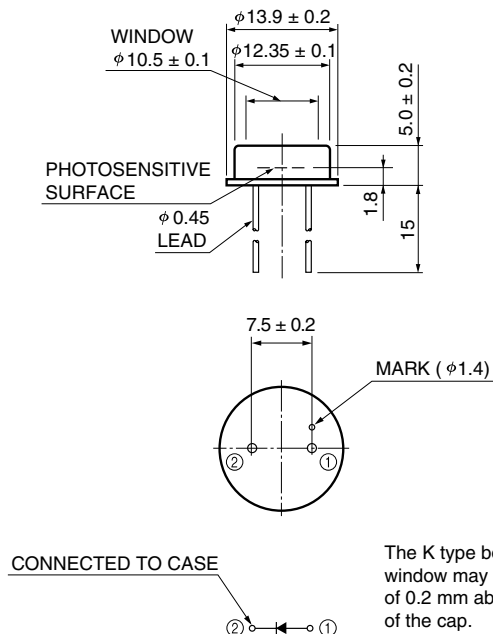
③ S2386-5K/-44K/-45K



The K type borosilicate glass window may extend a maximum of 0.2 mm above the upper surface of the cap.

KSPDA0103EA

④ S2386-8K



The K type borosilicate glass window may extend a maximum of 0.2 mm above the upper surface of the cap.

KSPDA0104EA

**HAMAMATSU**

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