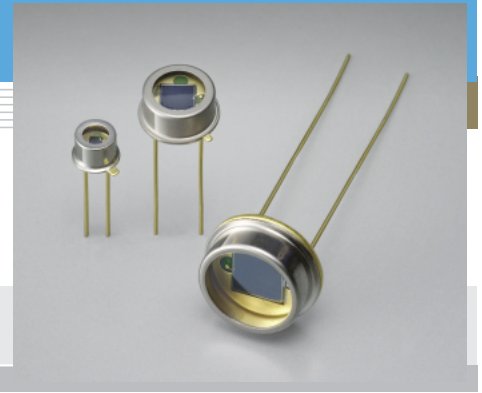


# Si photodiode S1336 series

UV to near IR for precision photometry



## Features

- High sensitivity
- Low capacitance
- High reliability

## Applications

- Analytical instruments
- Optical measurement equipment

### ■ General ratings / Absolute maximum ratings

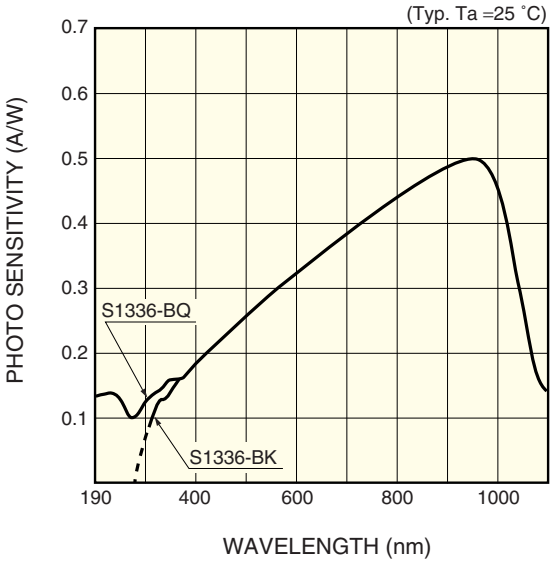
| Type No.   | Dimensional outline/<br>Window material * | Package<br><br>(mm) | Active area size<br><br>(mm) | Effective active area<br><br>(mm <sup>2</sup> ) | Absolute maximum rating                           |                                                   |                                                 |
|------------|-------------------------------------------|---------------------|------------------------------|-------------------------------------------------|---------------------------------------------------|---------------------------------------------------|-------------------------------------------------|
|            |                                           |                     |                              |                                                 | Reverse voltage<br>V <sub>R</sub> Max.<br><br>(V) | Operating temperature<br>T <sub>opr</sub><br>(°C) | Storage temperature<br>T <sub>stg</sub><br>(°C) |
| S1336-18BQ | ①/Q                                       | TO-18               | 1.1 × 1.1                    | 1.2                                             | 5                                                 | -20 to +60                                        | -55 to +80                                      |
| S1336-18BK | ①/K                                       |                     |                              |                                                 |                                                   | -40 to +100                                       | -55 to +125                                     |
| S1336-5BQ  | ②/Q                                       | TO-5                | 2.4 × 2.4                    | 5.7                                             |                                                   | -20 to +60                                        | -55 to +80                                      |
| S1336-5BK  | ②/K                                       |                     |                              |                                                 |                                                   | -40 to +100                                       | -55 to +125                                     |
| S1336-44BQ | ②/Q                                       |                     |                              |                                                 |                                                   | -20 to +60                                        | -55 to +80                                      |
| S1336-44BK | ②/K                                       |                     |                              |                                                 |                                                   | -40 to +100                                       | -55 to +125                                     |
| S1336-8BQ  | ③/Q                                       | TO-8                | 5.8 × 5.8                    | 33                                              |                                                   | -20 to +60                                        | -55 to +80                                      |
| S1336-8BK  | ③/K                                       |                     |                              |                                                 |                                                   | -40 to +100                                       | -55 to +125                                     |

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

| Type No.   | Spectral response range<br><br>$\lambda$<br><br>(nm) | Peak sensitivity wavelength<br>$\lambda_p$<br><br>(nm) | Photo sensitivity S (A/W) |        |      | Short circuit current I <sub>sc</sub> 100 lx |      | Dark current I <sub>D</sub> V <sub>R</sub> =10 mV Max. | Temp. coefficient of I <sub>D</sub> T <sub>CID</sub> | Rise time t <sub>r</sub> V <sub>R</sub> =0 V R <sub>L</sub> =1 k $\Omega$ | Terminal capacitance C <sub>t</sub> V <sub>R</sub> =0 V f=10 kHz | Shunt resistance R <sub>sh</sub> V <sub>R</sub> =10 mV |      | NEP |                         |
|------------|------------------------------------------------------|--------------------------------------------------------|---------------------------|--------|------|----------------------------------------------|------|--------------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------|------------------------------------------------------------------|--------------------------------------------------------|------|-----|-------------------------|
|            |                                                      |                                                        | $\lambda_p$               | 200 nm |      | Min.                                         | Typ. |                                                        |                                                      |                                                                           |                                                                  | Min.                                                   | Typ. |     |                         |
|            |                                                      |                                                        |                           | Min.   | Typ. |                                              |      |                                                        |                                                      |                                                                           |                                                                  |                                                        |      |     | He-Ne laser 633 nm      |
| S1336-18BQ | 190 to 1100                                          | 960                                                    | 0.5                       | 0.10   | 0.12 | 0.33                                         | 1    | 1.2                                                    | 20                                                   | 1.15                                                                      | 0.1                                                              | 20                                                     | 0.5  | 2   | 5.7 × 10 <sup>-15</sup> |
| S1336-18BK | 320 to 1100                                          |                                                        |                           | -      | -    |                                              | 4    | 5                                                      | 30                                                   |                                                                           | 0.2                                                              | 65                                                     | 0.3  | 1   | 8.1 × 10 <sup>-15</sup> |
| S1336-5BQ  | 190 to 1100                                          |                                                        |                           | 0.10   | 0.12 |                                              | 8    | 10                                                     | 50                                                   |                                                                           | 0.5                                                              | 150                                                    | 0.2  | 0.6 | 1.0 × 10 <sup>-14</sup> |
| S1336-5BK  | 320 to 1100                                          |                                                        |                           | -      | -    |                                              | 22   | 28                                                     | 100                                                  |                                                                           | 1                                                                | 380                                                    | 0.1  | 0.4 | 1.3 × 10 <sup>-14</sup> |
| S1336-44BQ | 190 to 1100                                          |                                                        |                           | 0.10   | 0.12 |                                              |      |                                                        |                                                      |                                                                           |                                                                  |                                                        |      |     |                         |
| S1336-44BK | 320 to 1100                                          |                                                        |                           | -      | -    |                                              |      |                                                        |                                                      |                                                                           |                                                                  |                                                        |      |     |                         |
| S1336-8BQ  | 190 to 1100                                          |                                                        |                           | 0.10   | 0.12 |                                              |      |                                                        |                                                      |                                                                           |                                                                  |                                                        |      |     |                         |
| S1336-8BK  | 320 to 1100                                          |                                                        |                           | -      | -    |                                              |      |                                                        |                                                      |                                                                           |                                                                  |                                                        |      |     |                         |

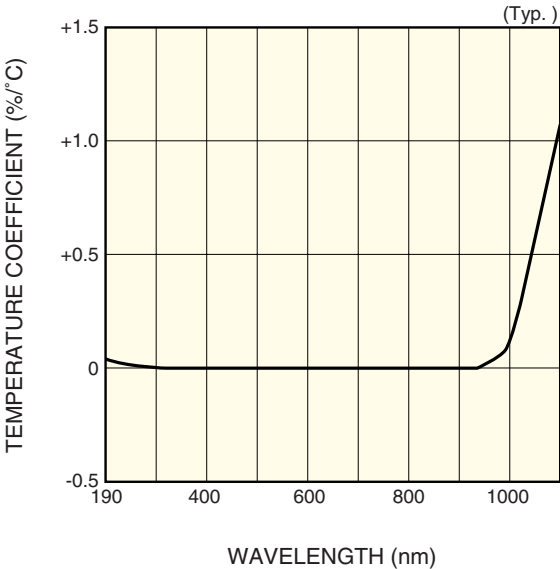
\* Window material, K: borosilicate glass, Q: quartz glass

■ Spectral response



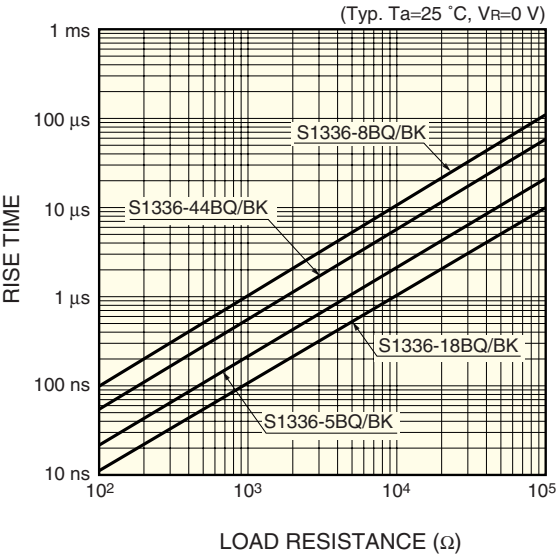
KSPDB0098EA

■ Photo sensitivity temperature characteristic



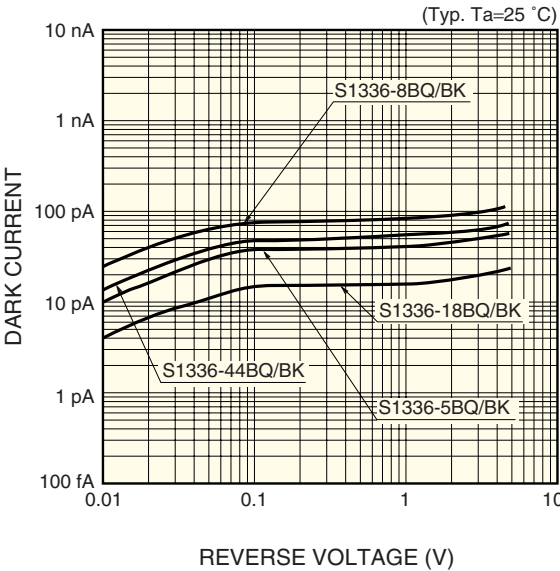
KSPDB0053EB

■ Rise time vs. load resistance



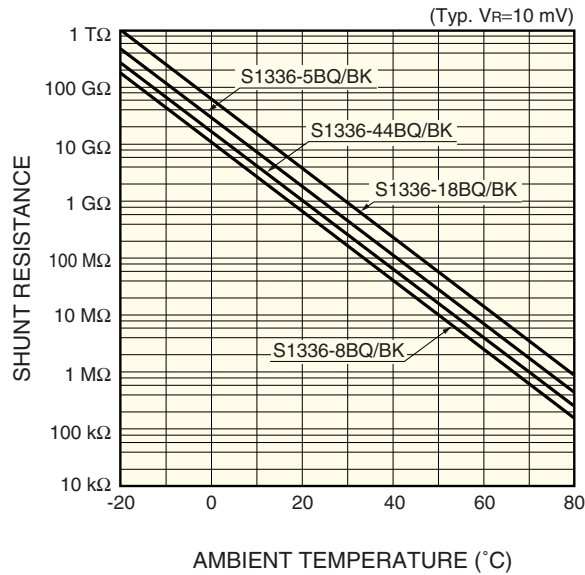
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■ Dark current vs. reverse voltage



KSPDB0100EA

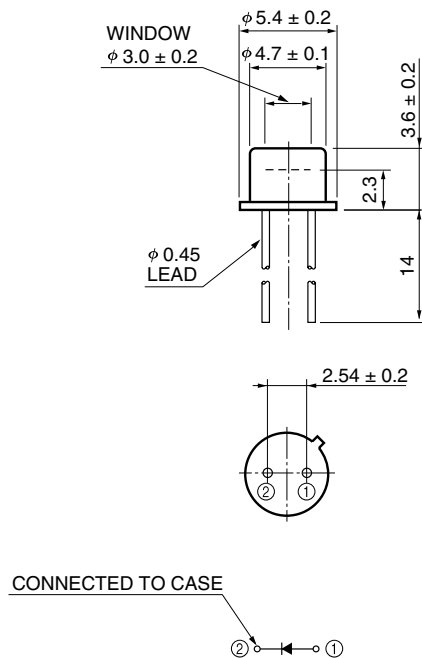
## ■ Shunt resistance vs. ambient temperature



KSPDB0101EA

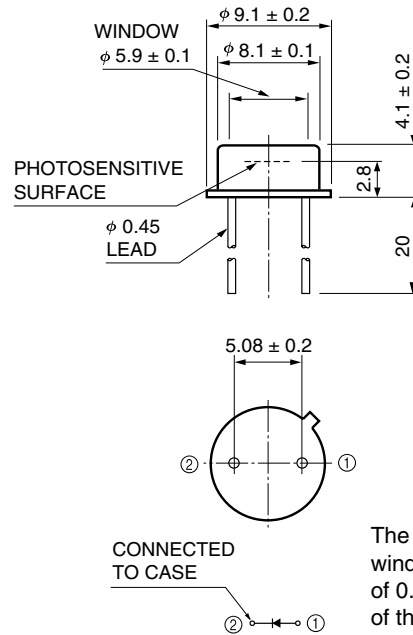
## ■ Dimensional outlines (unit: mm)

### ① S1336-18BQ/-18BK



KSPDA0102EB

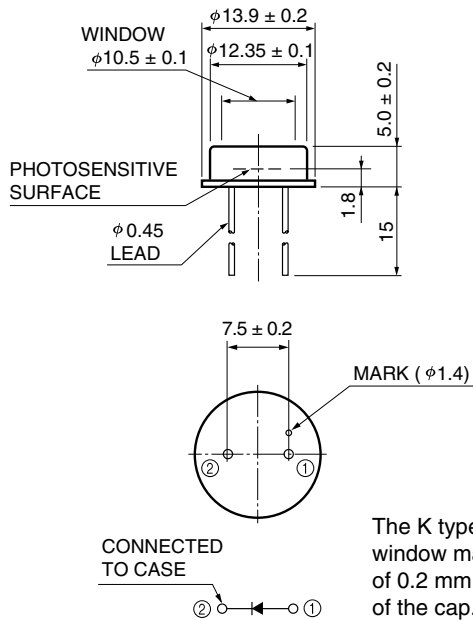
### ② S1336-5BQ/K, S1336-44BQ/K



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

KSPDA0103EA

## ③ S1336-8BQ/-8BK



KSPDA0104EA

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