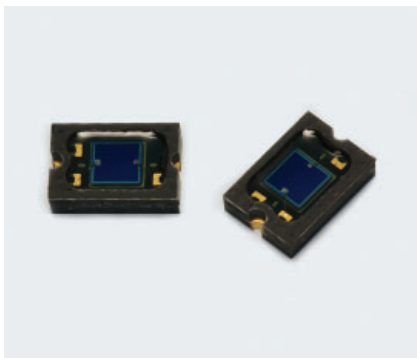


Si photodiode



S9674

**Suitable for lead-free solder reflow,
operating/storage temperature: -40 to +125 °C**

S9674 is a highly reliable photodiode designed for in-vehicle applications and is compatible with lead-free solder reflow processes. The newly developed small, thin leadless package allows reducing the mount area on a printed circuit board.

Features

- **Suitable for lead-free solder reflow**
(Reflow peak temperature: 260 °C, JEDEC LEVEL 4)
- **Surface mount type, small and thin leadless package**
- **High reliability for automotive applications**
Operating/storage temperature: -40 to +125 °C
- **Photosensitive area: 2 × 2 mm**
- **High sensitivity: 0.7 A/W ($\lambda=960$ nm)**

Applications

- **Automotive devices**
(For rain sensor and sun sensor, etc.)

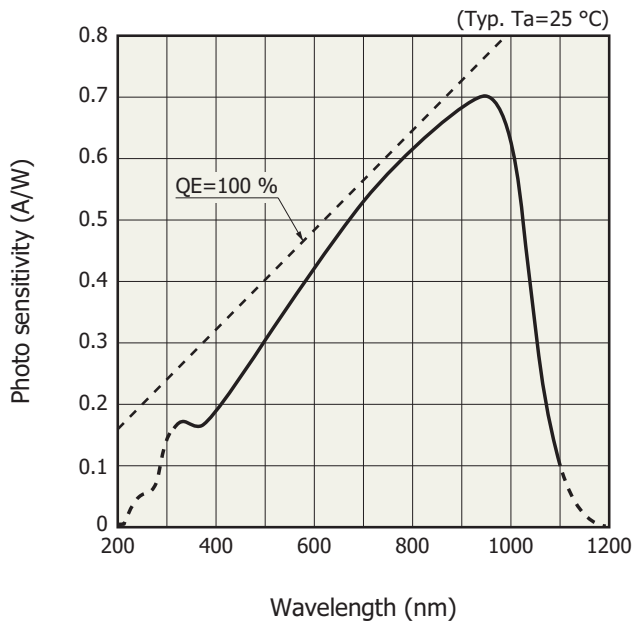
Absolute maximum ratings

| Parameter | Symbol | Value | Unit |
|-----------------------|------------|-------------|------|
| Reverse voltage | V_R max. | 10 | V |
| Operating temperature | T_{opr} | -40 to +125 | °C |
| Storage temperature | T_{stg} | -40 to +125 | °C |

Electrical and optical characteristics ($T_a=25$ °C)

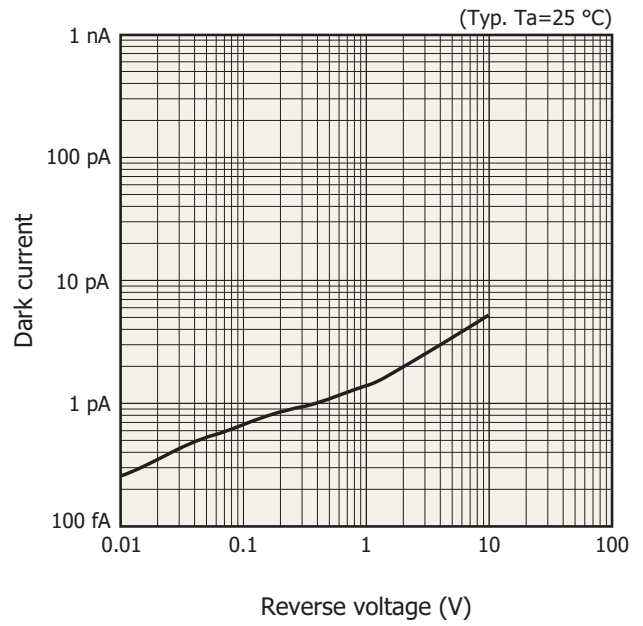
| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|-------------------------------------|-------------|--|------|-------------|------|----------|
| Spectral response range | λ | | - | 320 to 1100 | - | nm |
| Peak sensitivity wavelength | λ_p | | - | 960 | - | nm |
| Photo sensitivity | S | $\lambda=\lambda_p$ | 0.6 | 0.7 | - | A/W |
| Short circuit current | I_{sc} | 100 lx, 2856 K | - | 4.8 | - | μ A |
| Temperature coefficient of I_{sc} | - | | - | +0.1 | - | %/°C |
| Half-value angle | - | | - | ± 60 | - | degree |
| Dark current | I_D | $V_R=5$ V | - | 0.005 | 1 | nA |
| Temperature coefficient of I_D | T_{CID} | | - | 1.12 | - | times/°C |
| Rise time | t_r | $V_R=0$ V, $R_L=1$ k Ω 10 to 90% | - | 2 | - | μ s |
| Terminal capacitance | C_t | $V_R=0$ V, $f=10$ kHz | - | 450 | - | pF |

Spectral response



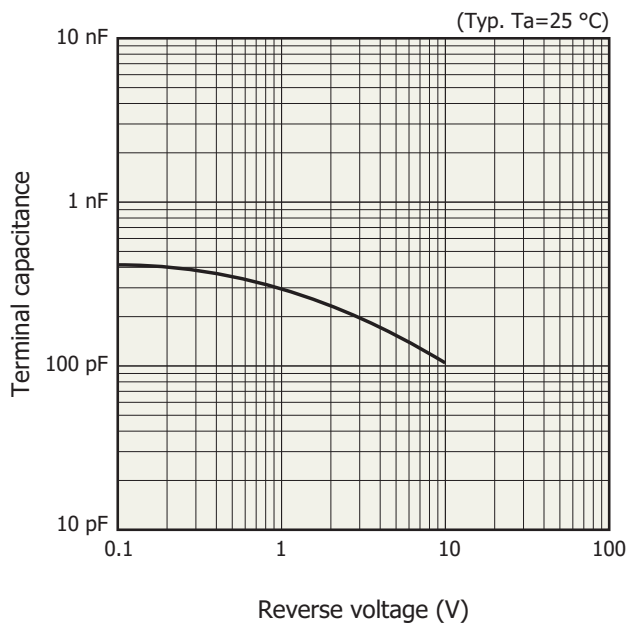
KSPDB0248EA

Dark current vs. reverse voltage



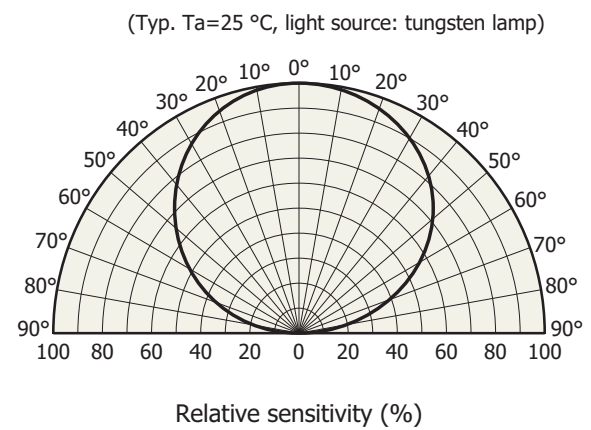
KSPDB0250EB

Terminal capacitance vs. reverse voltage



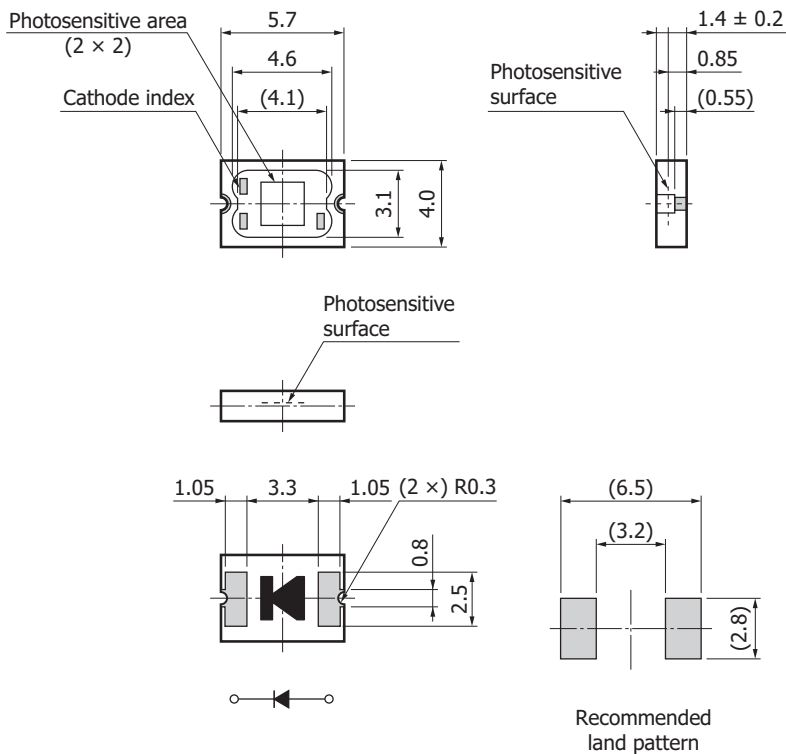
KSPDB0251EA

Directivity



KSPDB0249EA

Dimensional outline (unit: mm)



Tolerance unless otherwise noted: ± 0.15 , $\pm 2^\circ$

KSPDA0179EC

Information described in this material is current as of June, 2011. Product specifications are subject to change without prior notice due to improvements or other reasons. Before assembly into final products, please contact us for the delivery specification sheet to check the latest information.

Type numbers of products listed in the delivery specification sheets or supplied as samples may have a suffix "(X)" which means preliminary specifications or a suffix "(Z)" which means developmental specifications.

The product warranty is valid for one year after delivery and is limited to product repair or replacement for defects discovered and reported to us within that one year period. However, even if within the warranty period we accept absolutely no liability for any loss caused by natural disasters or improper product use.

Copying or reprinting the contents described in this material in whole or in part is prohibited without our prior permission.

HAMAMATSU

www.hamamatsu.com

HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Higashi-ku, Hamamatsu City, 435-8558 Japan, Telephone: (81) 53-434-3311, Fax: (81) 53-434-5184

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P.O.Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1) 908-231-0960, Fax: (1) 908-231-1218

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49) 8152-375-0, Fax: (49) 8152-265-8

France: Hamamatsu Photonics France S.A.R.L.: 19, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: 33-(1) 69 53 71 00, Fax: 33-(1) 69 53 71 10

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, United Kingdom, Telephone: (44) 1707-294888, Fax: (44) 1707-325777

North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171 41 Solna, Sweden, Telephone: (46) 8-509-031-00, Fax: (46) 8-509-031-01

Italy: Hamamatsu Photonics Italia S.R.L.: Strada della Moia, 1 int. 6, 20020 Arese, (Milano), Italy, Telephone: (39) 02-935-81-733, Fax: (39) 02-935-81-741