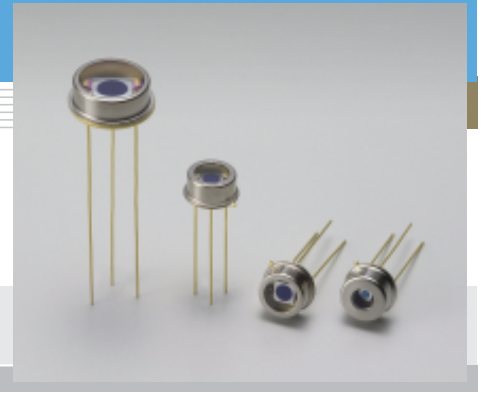


# Si PIN photodiode S3071, S3072, S3399, S3883

## Large area, high-speed Si PIN photodiodes



S3071, S3072, S3399 and S3883 are Si PIN photodiodes having a relatively large active area from  $\phi 1.5$  to  $\phi 5.0$  mm yet they offer excellent frequency response from 40 to 300 MHz. These photodiodes are suitable for spatial light transmission and high-speed pulsed light detection.

### Features

- Active area size  
S3071:  $\phi 5.0$  mm  
S3072:  $\phi 3.0$  mm  
S3399:  $\phi 3.0$  mm  
S3883:  $\phi 1.5$  mm
- Cut-off frequency  
S3071: 40 MHz ( $V_R=24$  V)  
S3072: 45 MHz ( $V_R=24$  V)  
S3399: 100 MHz ( $V_R=10$  V)  
S3883: 300 MHz ( $V_R=20$  V)
- High reliability: TO-5/8 metal package

### Applications

- Spatial light transmission
- High-speed pulsed light detection

### General ratings / Absolute maximum ratings

Type No.	Dimensional outline/ Window material *1	Package (mm)	Active area size (mm)	Effective active area (mm <sup>2</sup> )	Absolute maximum ratings			
					Reverse voltage $V_R$ Max. (V)	Power dissipation P (mW)	Operating temperature $T_{opr}$ (°C)	Storage temperature $T_{stg}$ (°C)
S3071	①/K	TO-8	$\phi 5.0$	19.6	50	50	-40 to +100	-55 to +125
S3072	②/K	TO-5	$\phi 3.0$	7.0				
S3399	③/K		$\phi 3.0$	7.0	30			
S3883	④/K		$\phi 1.5$	1.7				

### Electrical and optical characteristics (Typ. $T_a=25$ °C, unless otherwise noted)

Type No.	Spectral response range $\lambda$ (nm)	Peak sensitivity wavelength $\lambda_p$ (nm)	Photo sensitivity S (A/W)				Short circuit current $I_{sc}$ 100 lx ( $\mu$ A)	Dark current $I_D$ (nA)		Temp. coefficient of $I_D$ $T_{CID}$ (times/°C)	Cut-off frequency $f_c$ $R_L=50 \Omega$ (MHz)	Terminal capacitance $C_t$ $f=1$ kHz (pF)	NEP (W/Hz <sup>1/2</sup> )
			$\lambda_p$	660 nm	780 nm	830 nm		Typ.	Max.				
S3071	320 to 1060	920	0.6	0.47	0.54	0.56	17	0.5 <sup>*3</sup>	10 <sup>*3</sup>	1.15	40 <sup>*3</sup>	18 <sup>*3</sup>	2.1 × 10 <sup>-14</sup> <sup>*3</sup>
S3072								0.3 <sup>*3</sup>	10 <sup>*3</sup>		45 <sup>*3</sup>	7 <sup>*3</sup>	1.7 × 10 <sup>-14</sup> <sup>*3</sup>
S3399	320 to 1000	840	0.6	0.45	0.58	0.6	5.6	0.1 <sup>*4</sup>	1.0 <sup>*4</sup>	1.12	100 <sup>*4</sup>	20 <sup>*4</sup>	9.4 × 10 <sup>-15</sup> <sup>*4</sup>
S3883								0.05 <sup>*2</sup>	1.0 <sup>*2</sup>		300 <sup>*2</sup>	6 <sup>*2</sup>	6.7 × 10 <sup>-15</sup> <sup>*2</sup>

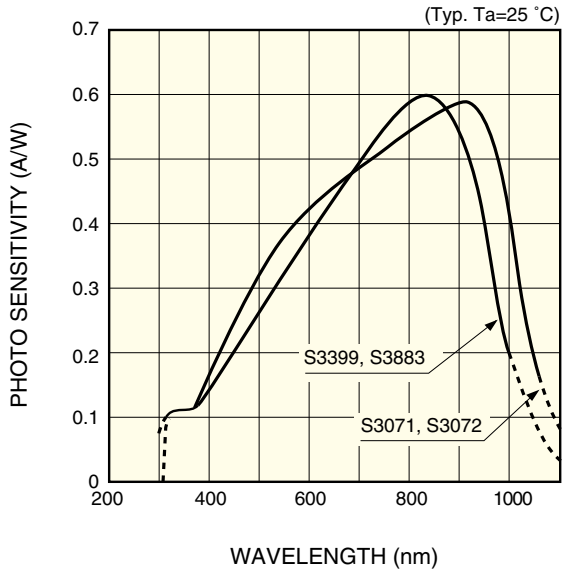
\*1: Window material K: borosilicate glass

\*2:  $V_R=20$  V

\*3:  $V_R=24$  V

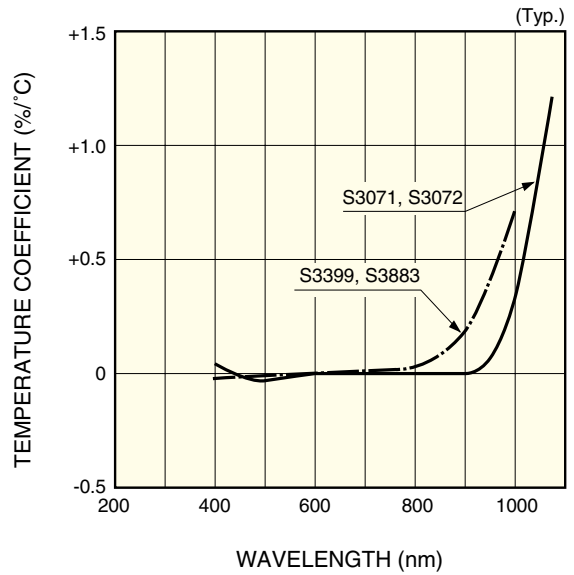
\*4:  $V_R=10$  V

■ Spectral response



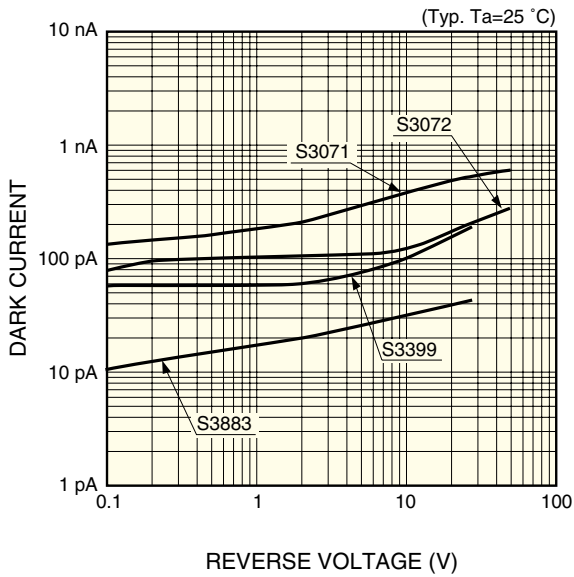
KPINB0147EA

■ Photo sensitivity temperature characteristics



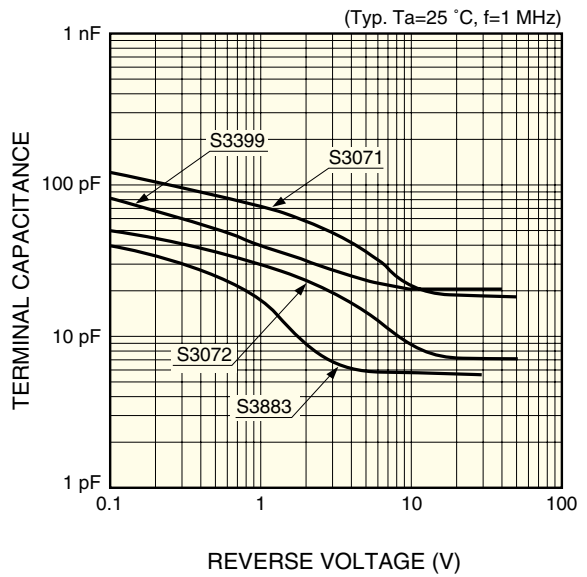
KPINB0148EA

■ Dark current vs. reverse voltage



KPINB0149EA

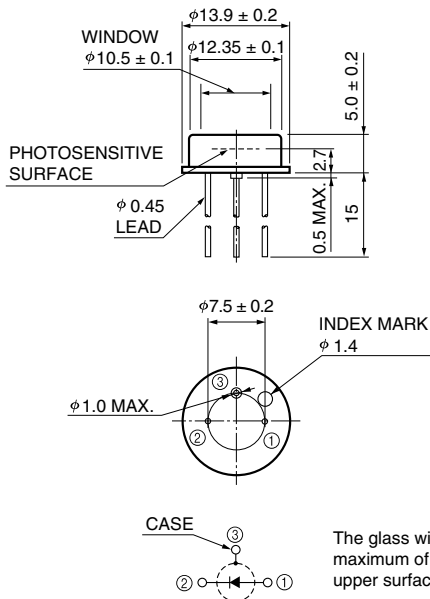
■ Terminal capacitance vs. reverse voltage



KPINB0150EA

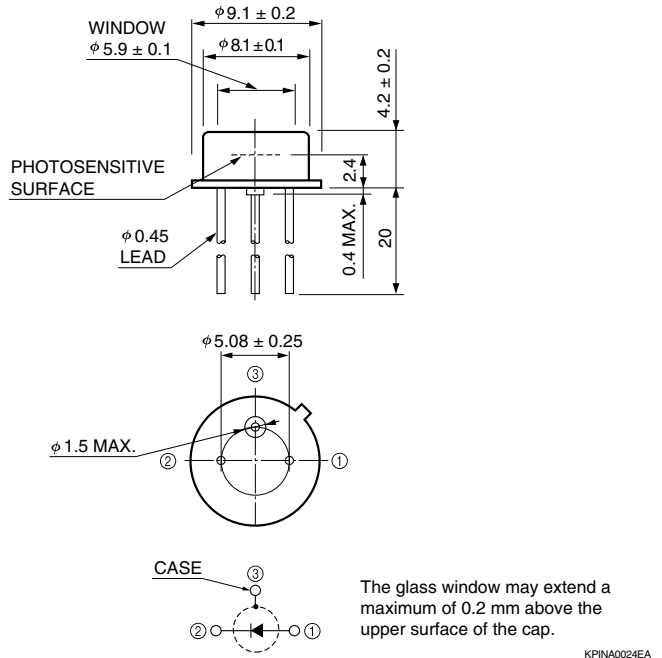
Dimensional outline (unit: mm)

① S3071



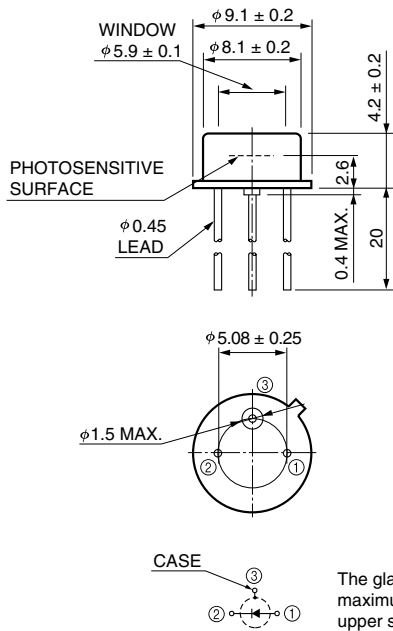
KPINA0027EC

② S3072



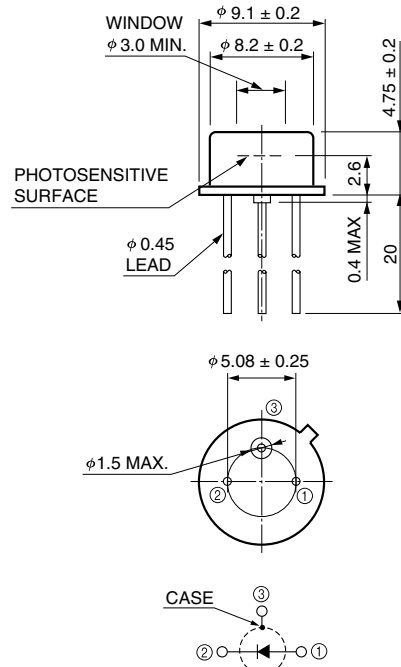
KPINA0024EA

③ S3399



KPINA0026EA

④ S3883



KPINA0025EB

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HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Hamamatsu City, 435-8558 Japan, Telephone: (81) 053-434-3311, Fax: (81) 053-434-5184, <http://www.hamamatsu.com>

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) 08152-3750, Fax: (49) 08152-2658

France: Hamamatsu Photonics France S.A.R.L.: 8, 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/E, 20020 Arese, (Milano), Italy, Telephone: (39) 02-935-81-733, Fax: (39) 02-935-81-741

