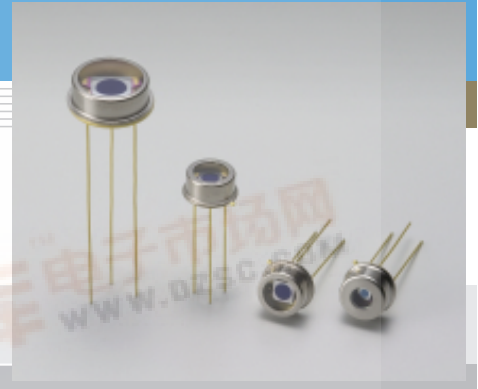


PHOTODIODE

# 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				
S3883	④/K		$\phi 1.5$	1.7	30			

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

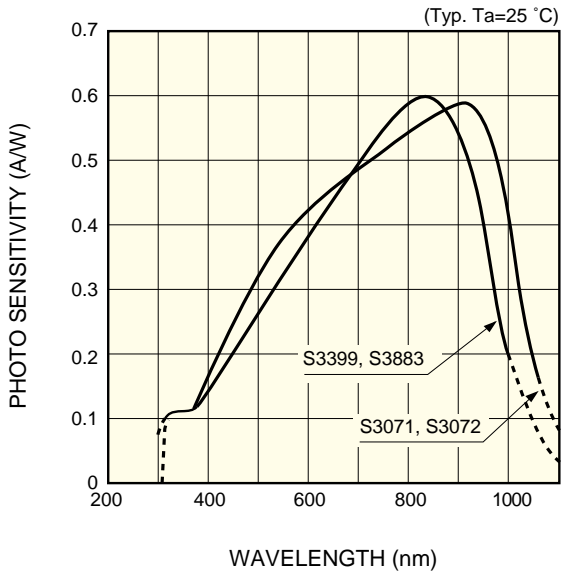
Type No.	Spectral response range $\lambda$ (nm)	Peak sensitivity wavelength $\lambda_p$ (nm)	Photo sensitivity S (A/W)				Short circuit current $I_{sc}$ 100 lx ( $\mu$ A)	Dark current $I_D$ (nA)		Temp. coefficient of $I_D$ $T_{CID}$ (times/°C)	Cut-off frequency $f_c$ $R_L=50 \Omega$ (MHz)	Terminal capacitance $C_t$ $f=1$ MHz (pF)	NEP $\lambda=\lambda_p$ (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*3	10*3	1.15	40*3	18*3	2.1 x 10 <sup>-14</sup> *3
S3072							6.5	0.3*3	10*3		45*3	7*3	1.6 x 10 <sup>-14</sup> *3
S3399	320 to 1000	840	0.6	0.45	0.58	0.6	5.6	0.1*4	1.0*4	1.12	100*4	20*4	9.4 x 10 <sup>-15</sup> *4
S3883							1.4	0.05*2	1.0*2		300*2	6*2	6.7 x 10 <sup>-15</sup> *2

\*1: Window material K: borosilicate glass  
\*2:  $V_R=20$  V  
\*3:  $V_R=24$  V  
\*4:  $V_R=10$  V



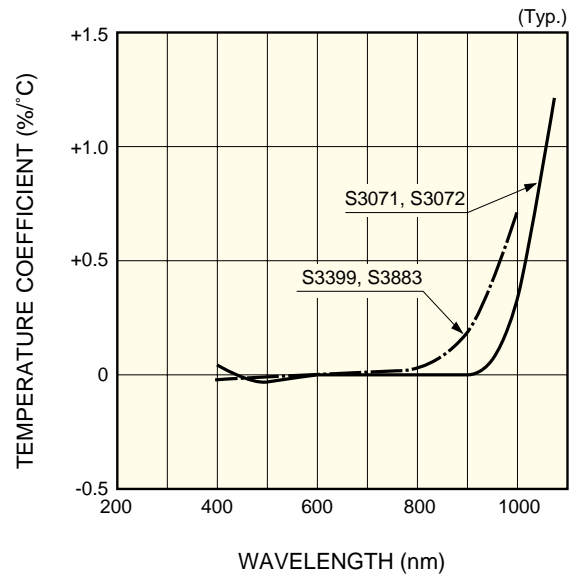
# Si PIN photodiode S3071, S3072, S3399, S3883

## ■ Spectral response



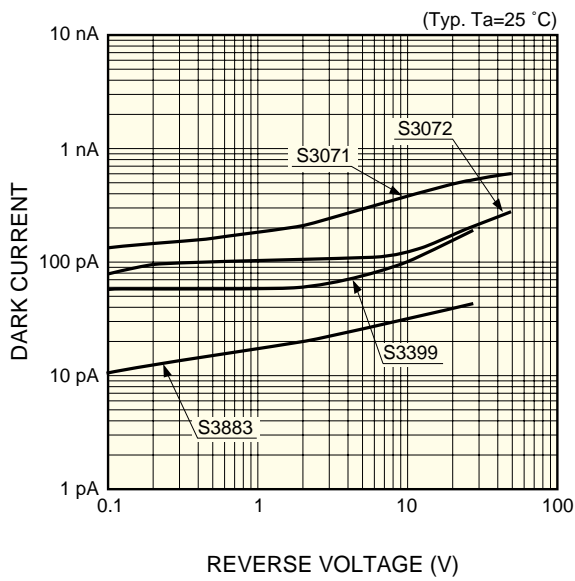
KPINB0147EA

## ■ Photo sensitivity temperature characteristics



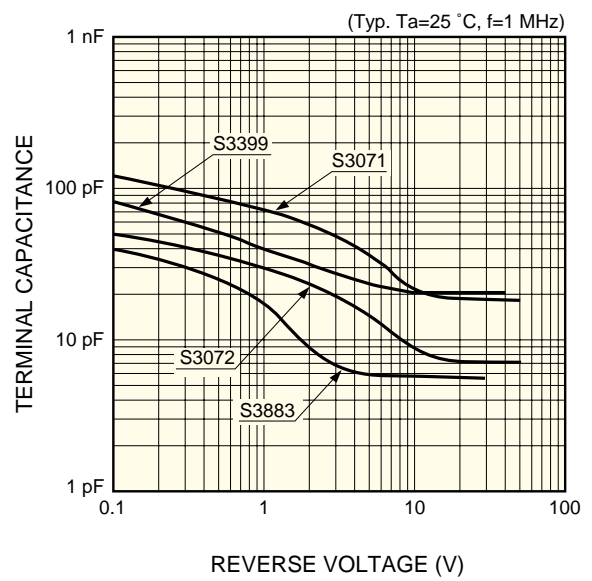
KPINB0148EA

## ■ Dark current vs. reverse voltage



KPINB0149EA

## ■ Terminal capacitance vs. reverse voltage

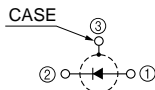
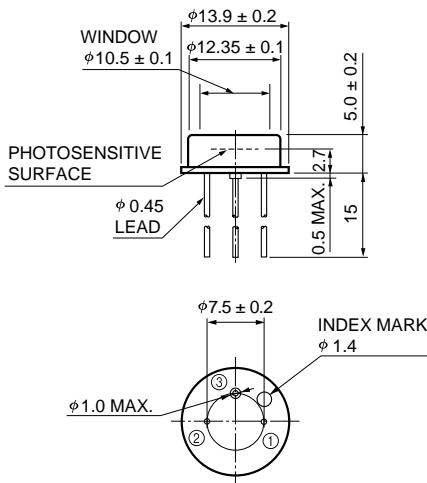


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# Si PIN photodiode S3071, S3072, S3399, S3883

## Dimensional outline (unit: mm)

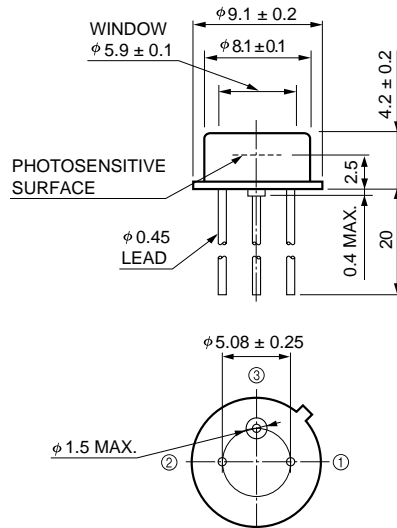
① S3071



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

KPINA0027EC

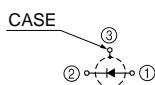
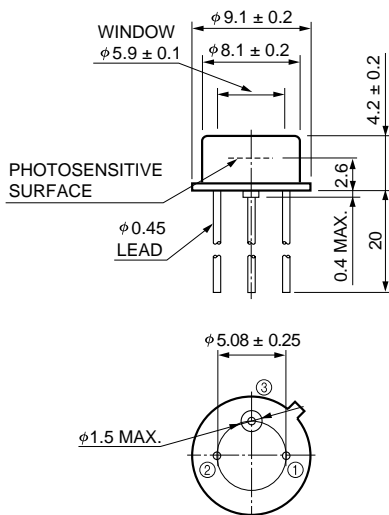
② S3072



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

KPINA0024EB

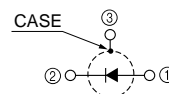
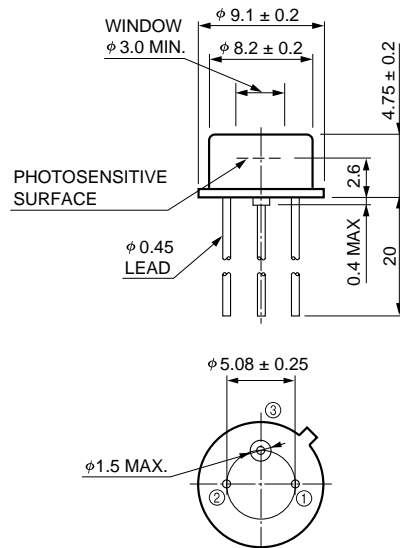
③ S3399



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

KPINA0028EA

④ S3883



KPINA0025EB

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