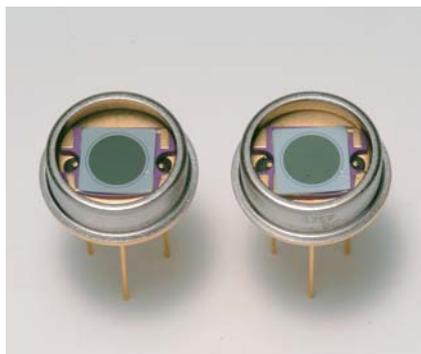


# Si PIN photodiode



S3759

## Si PIN photodiode for visible to infrared photometry

S3759 is a Si PIN photodiode developed to detect and measure infrared energy emitted from YAG lasers (1.06  $\mu\text{m}$ ). Compared to standard Si photodiodes, S3759 delivers exceptionally high sensitivity of 0.38 A/W at 1.06  $\mu\text{m}$ . The PIN structure allows high-speed response and low capacitance. The active area is as large as  $\phi 5$  mm, making optical axis alignment easier.

### Features

- High sensitivity in infrared region: 0.38 A/W ( $\lambda=1.06 \mu\text{m}$ )
- High-speed response:  $t_r=12.5$  ns ( $V_R=100$  V)
- Low capacitance:  $C_t=10$  pF ( $V_R=100$  V)
- Large active area:  $\phi 5$  mm
- High reliability: TO-8 metal package

### Applications

- YAG laser detection
- Analytical equipment, etc

### Absolute maximum ratings

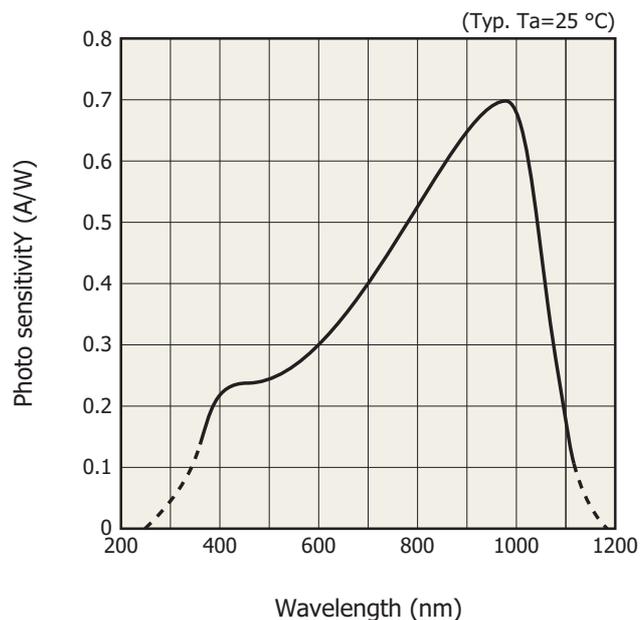
Parameter	Symbol	Value	Unit
Maximum reverse voltage	$V_R$ max	150	V
Operating temperature	$T_{opr}$	-40 to +100	$^{\circ}\text{C}$
Storage temperature	$T_{stg}$	-55 to +125	$^{\circ}\text{C}$

Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

### Electrical and optical characteristics ( $T_a=25^{\circ}\text{C}$ )

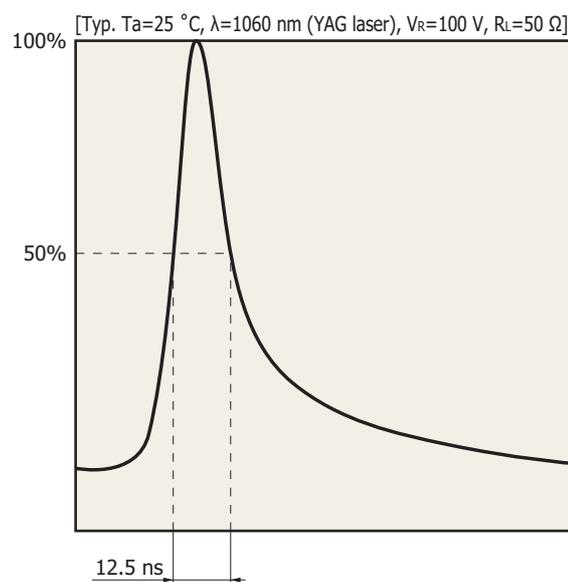
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	$\lambda$		-	360 to 1120	-	nm
Peak sensitivity wavelength	$\lambda_p$		-	980	-	nm
Photo sensitivity	S	$\lambda=1060$ nm	0.3	0.38	-	A/W
Short circuit current	$I_{sc}$	2856 K, 1000 $l_x$	14	19	-	$\mu\text{A}$
Dark current	$I_D$	$V_R=100$ V	-	1	10	nA
Rise time	$t_r$	$\lambda=1060$ nm, $V_R=100$ V, $R_L=50 \Omega$	-	12.5	-	ns
Terminal capacitance	$C_t$	$V_R=100$ V, $f=1$ MHz	-	10	-	pF

**Spectral response**



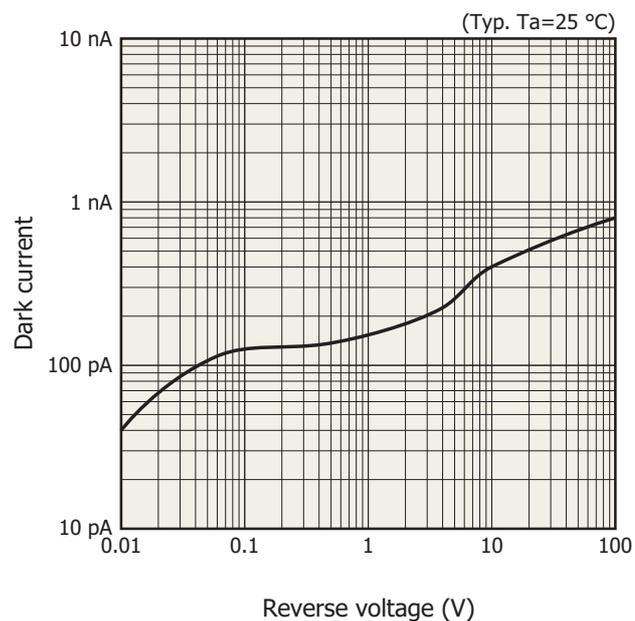
KPINB0279EA

**Response waveform**



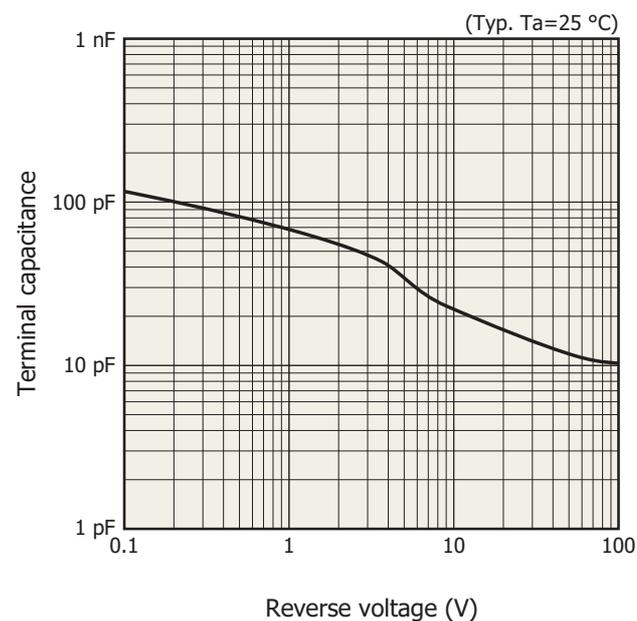
KPINB0280EC

**Dark current vs. reverse voltage**



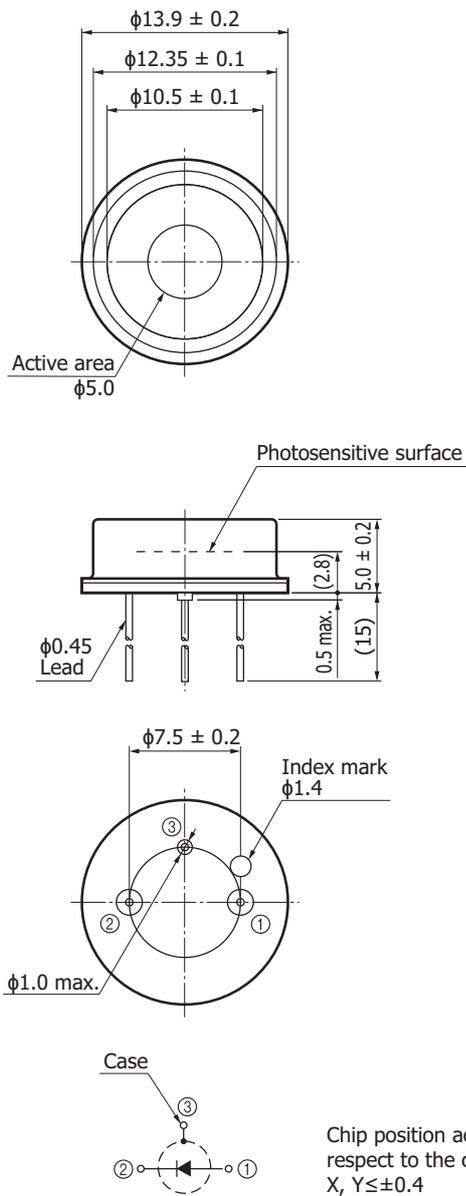
KPINB0281EA

**Terminal capacitance vs. reverse voltage**



KPINB0282EA

## Dimensional outline (unit: mm)



KPINA0092EA

## Related information

[www.hamamatsu.com/sp/ssd/doc\\_en.html](http://www.hamamatsu.com/sp/ssd/doc_en.html)

### ■ Precautions

- Notice
- Metal, ceramic, plastic packages / Precautions

### ■ Technical information

- Si photodiode / Application circuit examples

Information described in this material is current as of March, 2014.

Product specifications are subject to change without prior notice due to improvements or other reasons. This document has been carefully prepared and the information contained is believed to be accurate. In rare cases, however, there may be inaccuracies such as text errors. Before using these products, always contact us for the delivery specification sheet to check the latest 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.

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# HAMAMATSU

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