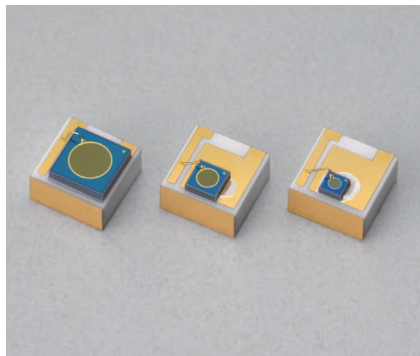


# InGaAs PIN photodiodes



G8941 series

## Sub-mount type photodiodes for LD monitor

### Features

- Photosensitive area  
G8941-01:  $\phi 1$  mm  
G8941-02:  $\phi 0.5$  mm  
G8941-03:  $\phi 0.3$  mm
- Miniature package:  $2 \times 2 \times 1$  mm
- Precise chip position tolerance:  $\pm 0.075$  mm

### Applications

- LD monitor

### Structure

Parameter	G8941-01	G8941-02	G8941-03	Unit
Photosensitive area	$\phi 1$	$\phi 0.5$	$\phi 0.3$	mm

### Absolute maximum ratings

Parameter	Symbol	Remark	G8941-01	G8941-02	G8941-03	Unit
Reverse voltage	$V_R$ Max.		10	20	20	V
Operating temperature	$T_{opr}$	*	-40 to +85			$^{\circ}\text{C}$
Storage temperature	$T_{stg}$		-55 to +125			$^{\circ}\text{C}$

\* In N<sub>2</sub> environment or in vacuum

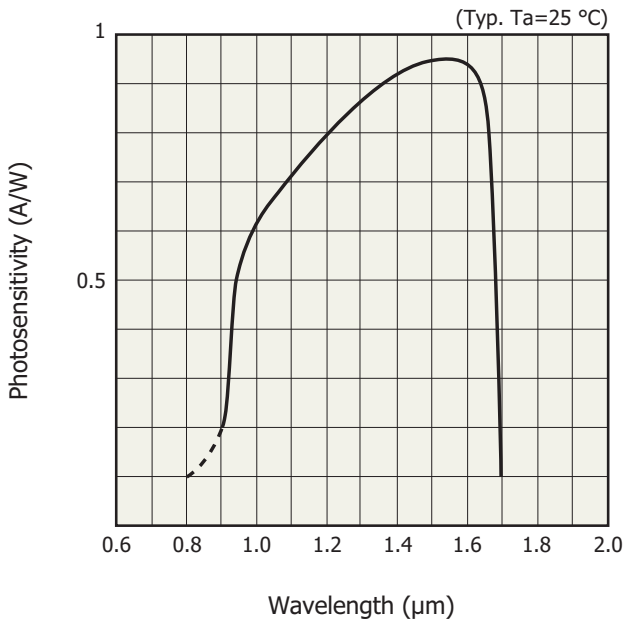
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

### Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	G8941-01			G8941-02			G8941-03			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Spectral response range	$\lambda$		0.9 to 1.7			0.9 to 1.7			0.9 to 1.7			$\mu\text{m}$
Photosensitivity	S	$\lambda=1.31 \mu\text{m}$	0.8	0.9	-	0.8	0.9	-	0.8	0.9	-	A/W
		$\lambda=1.55 \mu\text{m}$	0.85	0.95	-	0.85	0.95	-	0.85	0.95	-	
Dark current	$I_D$	$V_R=5 \text{ V}$	-	1	5	-	0.5	2.5	-	0.3	1.5	nA
Shunt resistance	Rsh	$V_R=10 \text{ mV}$	-	100	-	-	300	-	-	1000	-	M $\Omega$
Terminal capacitance	Ct	$V_R=5 \text{ V}$ $f=1 \text{ MHz}$	-	90	-	-	12	-	-	5	-	pF
Cutoff frequency	$f_c$	$V_R=5 \text{ V}$ $R_L=50 \Omega$	-	35	-	-	200	-	-	400	-	MHz
Noise equivalent power	NEP	$\lambda=\lambda_p$	$2 \times 10^{-14}$			$8 \times 10^{-15}$			$4 \times 10^{-15}$			W/Hz <sup>1/2</sup>
Detectivity	D*	$\lambda=\lambda_p$	$5 \times 10^{12}$			$5 \times 10^{12}$			$5 \times 10^{12}$			cm <sup>2</sup> Hz <sup>1/2</sup> /W

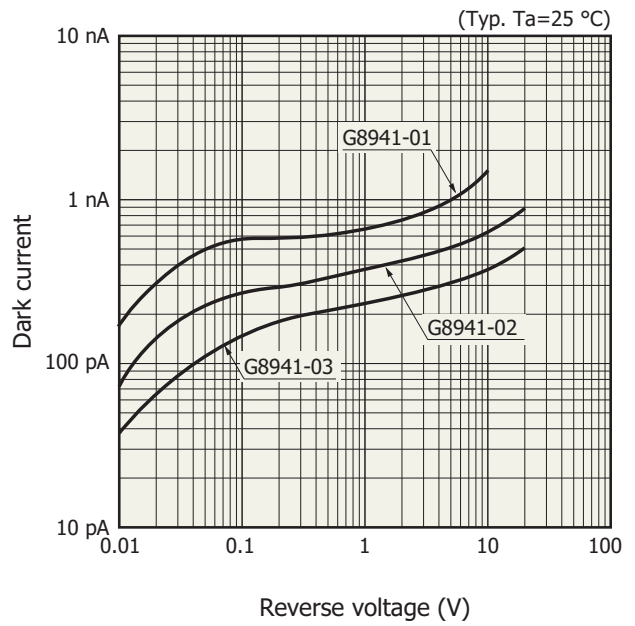
The G8941 series may be damaged by electrostatic discharge, etc. Be careful when using the G8941 series.

**Spectral response**



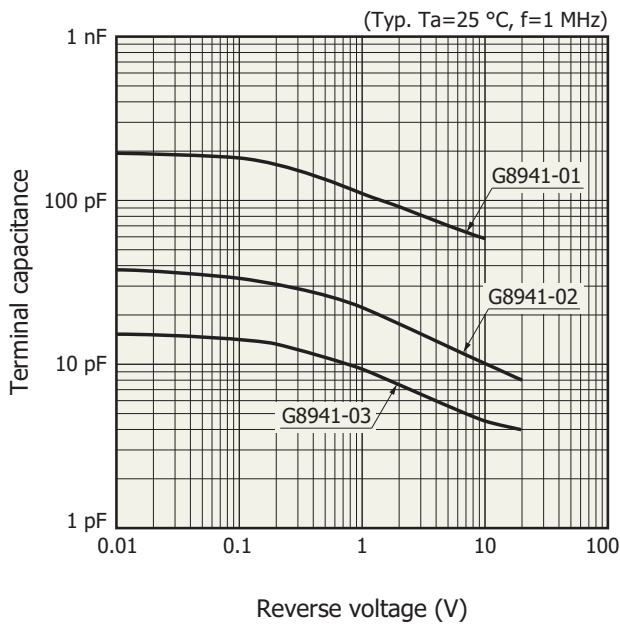
KIRDB0002EB

**Dark current vs. reverse voltage**



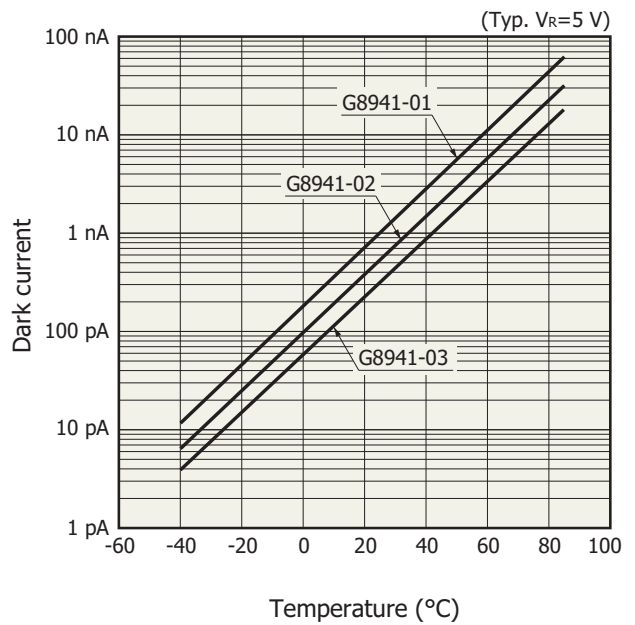
KIRDB00270EB

**Terminal capacitance vs. reverse voltage**



KIRDB0271EA

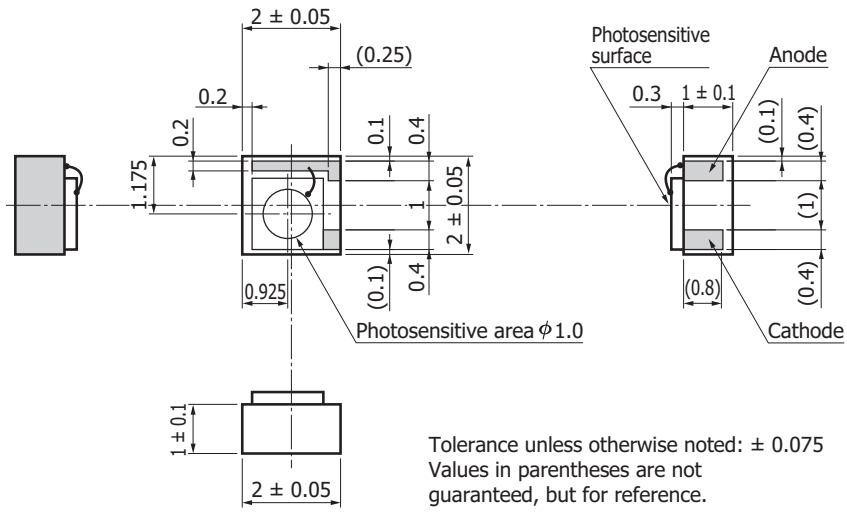
**Dark current vs. temperature**



KIRDB0272EA

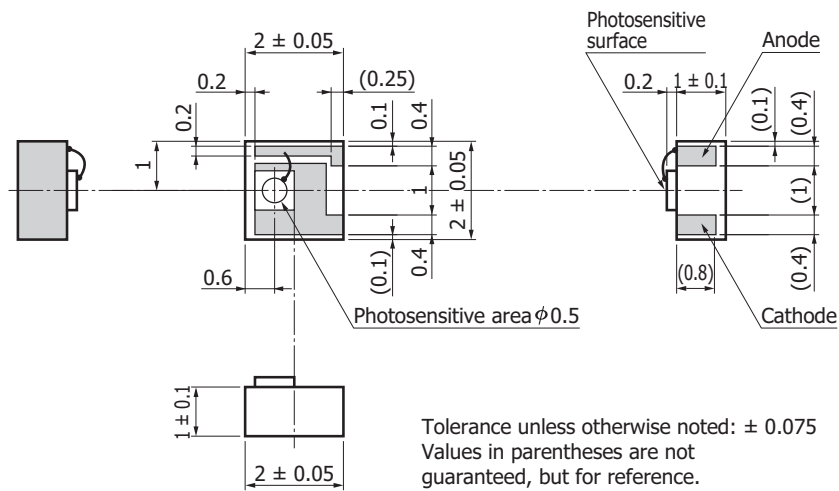
Dimensional outlines (unit: mm)

G8941-01



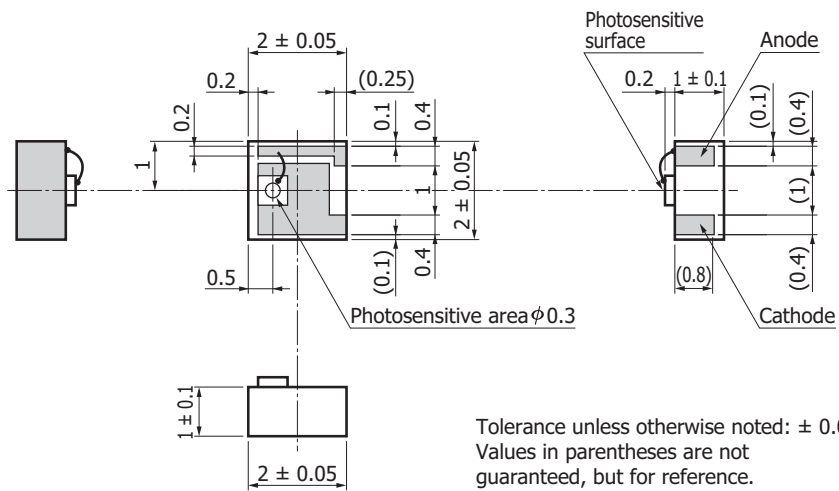
KIRDA0159EB

G8941-02



KIRDA0160EB

G8941-03



KIRDA0161EB

## Related information

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

### Precautions

- Disclaimer
- Surface mount type products

Information described in this material is current as of July, 2015.

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

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