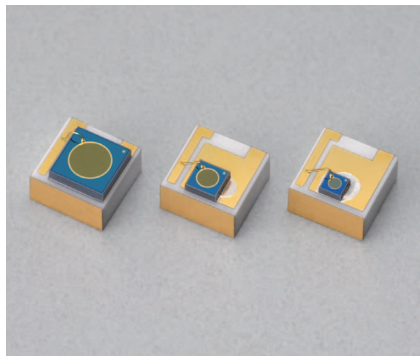


InGaAs PIN photodiodes



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: ± 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 N₂ environment or in vacuum

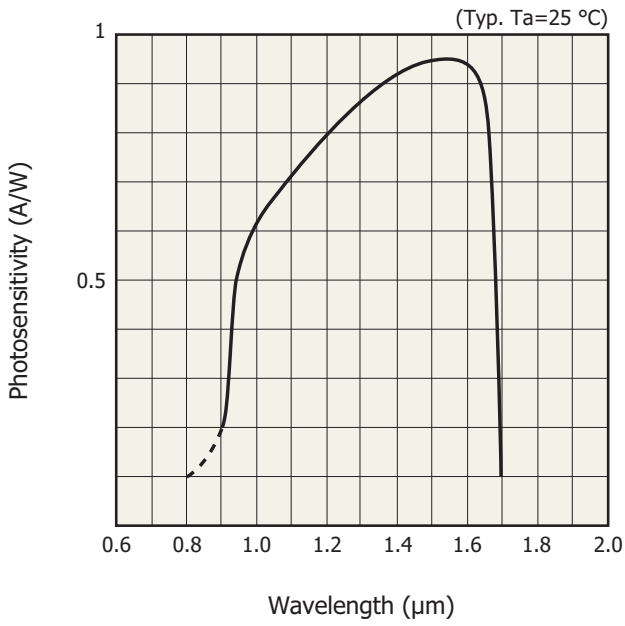
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

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	λ		0.9 to 1.7			0.9 to 1.7			0.9 to 1.7			μm
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 Ω
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	$\lambda=\lambda_p$	2×10^{-14}			8×10^{-15}			4×10^{-15}			W/Hz ^{1/2}
Detectivity	D*	$\lambda=\lambda_p$	5×10^{12}			5×10^{12}			5×10^{12}			cm ² Hz ^{1/2} /W

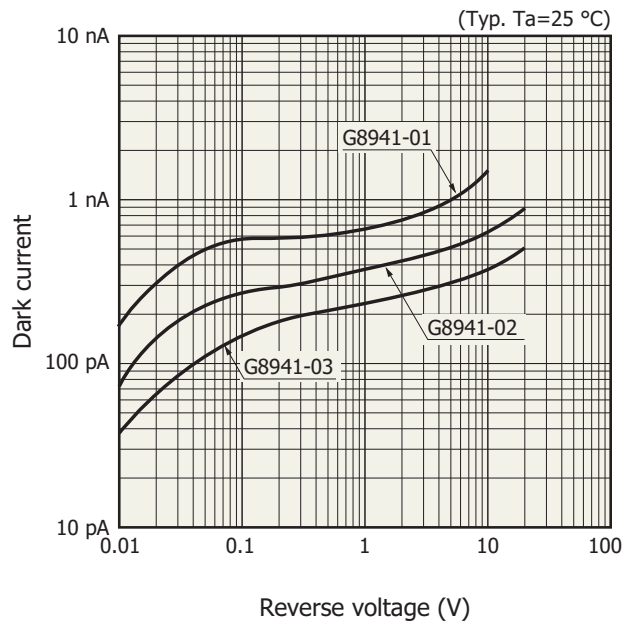
The G8941 series may be damaged by electrostatic discharge, etc. Be careful when using the G8941 series.

Spectral response



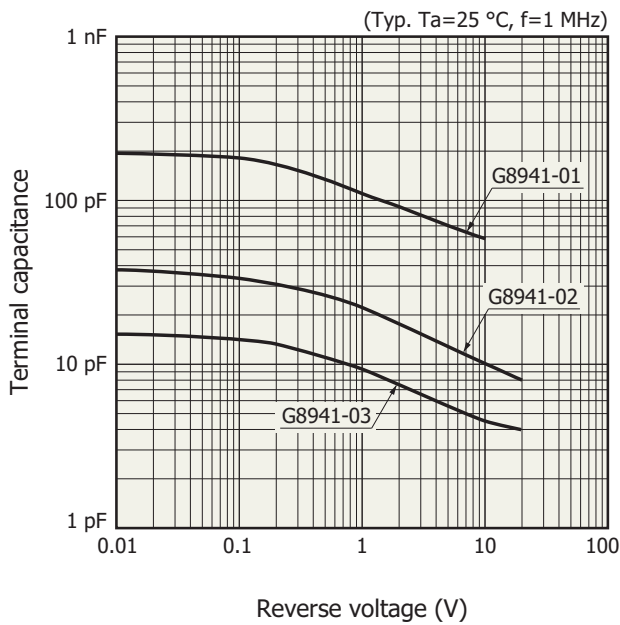
KIRDB0002EB

Dark current vs. reverse voltage



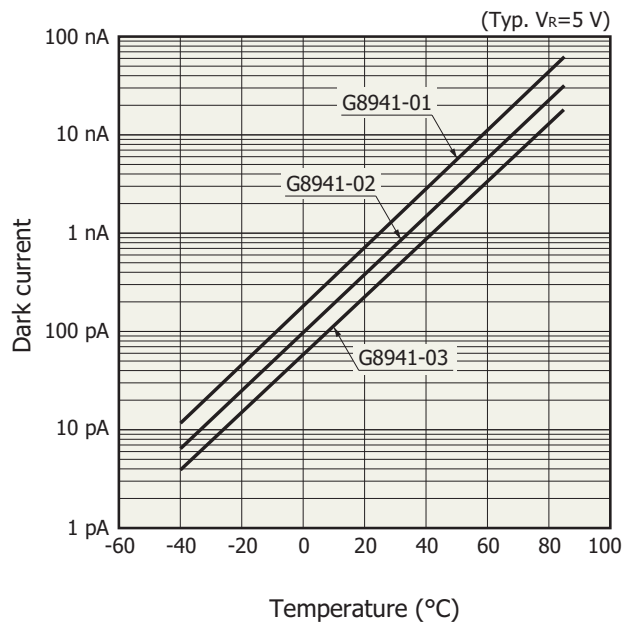
KIRDB00270EB

Terminal capacitance vs. reverse voltage



KIRDB0271EA

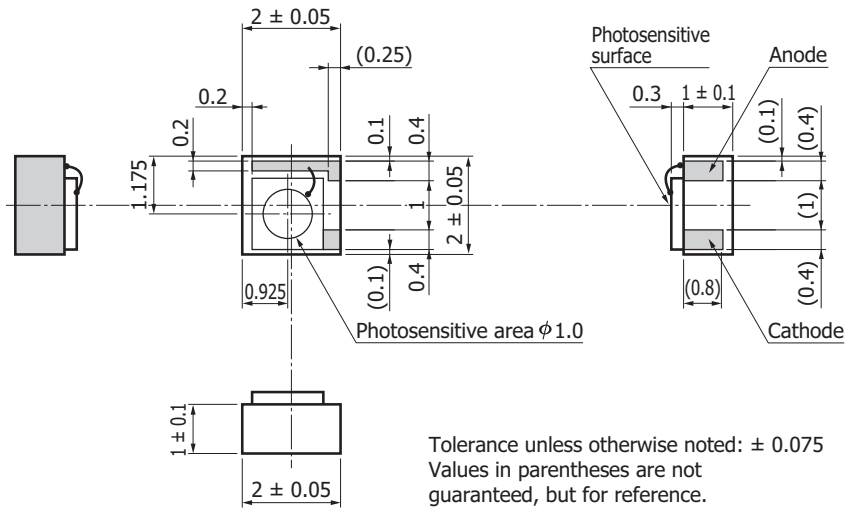
Dark current vs. temperature



KIRDB0272EA

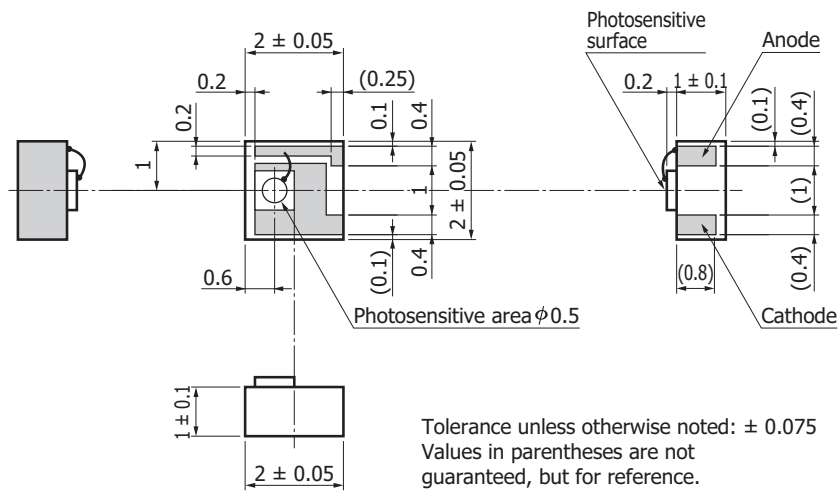
Dimensional outlines (unit: mm)

G8941-01



KIRDA0159EB

G8941-02



KIRDA0160EB

