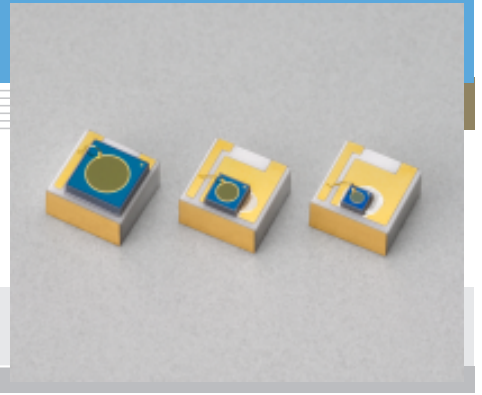


# InGaAs PIN photodiode G8941 series

Sub-mount type photodiode for LD monitor



## Features

- Active 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

## General rating

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

## Absolute maximum ratings

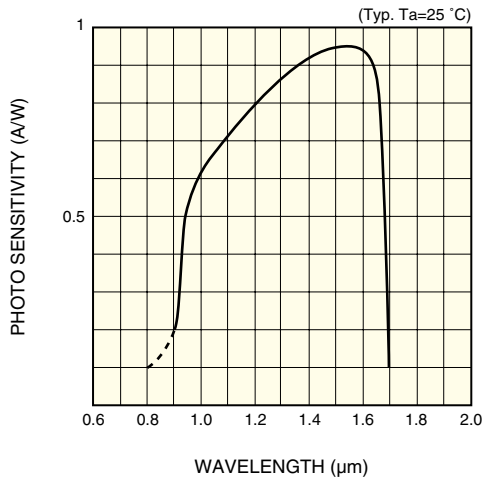
Parameter	Symbol	Remark	G8941-01	G8941-02	G8941-03	Unit
Reverse voltage	$V_R$ Max.		10	20	20	V
Operating temperature	$T_{opr}$	*	-40 to +85			$^{\circ}\text{C}$
Storage temperature	$T_{stg}$		-55 to +125			$^{\circ}\text{C}$

\* In  $\text{N}_2$  environment or in vacuum

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

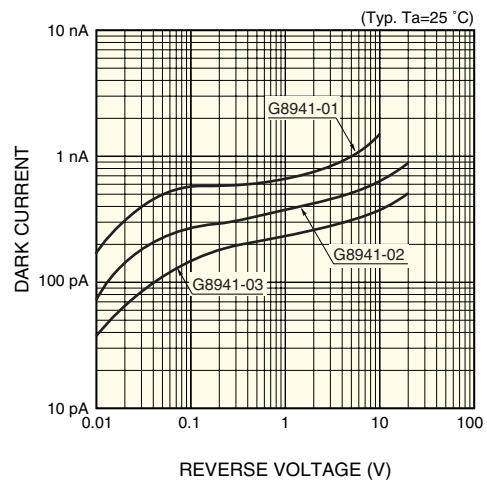
Parameter	Symbol	Condition	G8941-01			G8941-02			G8941-03			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	
Spectral response range	$\lambda$		0.9 to 1.7			0.9 to 1.7			0.9 to 1.7			$\mu\text{m}$
Photo sensitivity	S	$\lambda=1.31 \mu\text{m}$	0.8	0.9	-	0.8	0.9	-	0.8	0.9	-	A/W
		$\lambda=1.55 \mu\text{m}$	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	$R_{sh}$	$V_R=10 \text{ mV}$	-	100	-	-	300	-	-	1000	-	$\text{M}\Omega$
Terminal capacitance	$C_t$	$V_R=5 \text{ V}$ , $f=1 \text{ MHz}$	-	90	-	-	12	-	-	5	-	pF
Cut-off frequency	$f_c$	$V_R=5 \text{ V}$ , $R_L=50 \Omega$	-	35	-	-	200	-	-	400	-	MHz
Noise equivalent power	NEP	$\lambda=\lambda_p$	$2 \times 10^{-14}$			$8 \times 10^{-15}$			$4 \times 10^{-15}$			$\text{W}/\text{Hz}^{1/2}$
Detectivity	$D^*$	$\lambda=\lambda_p$	$5 \times 10^{12}$			$5 \times 10^{12}$			$5 \times 10^{12}$			$\text{cmHz}^{1/2}/\text{W}$

■ Spectral response



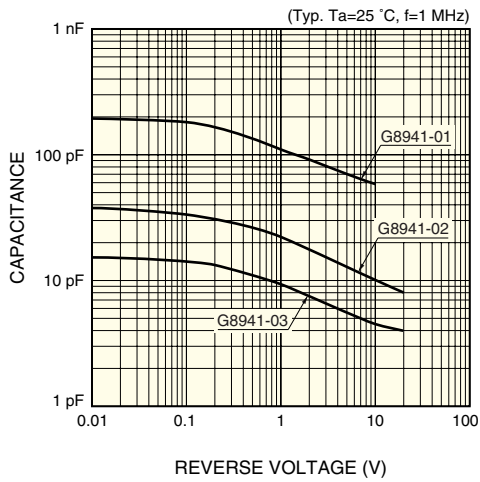
KIRDB0002EB

■ Dark current vs. reverse voltage



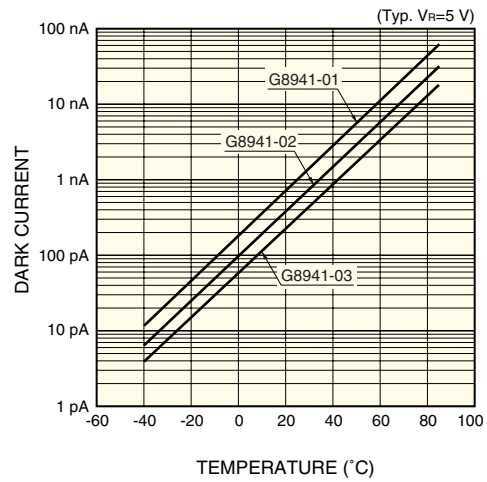
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■ Terminal capacitance vs. reverse voltage



KIRDB0271EA

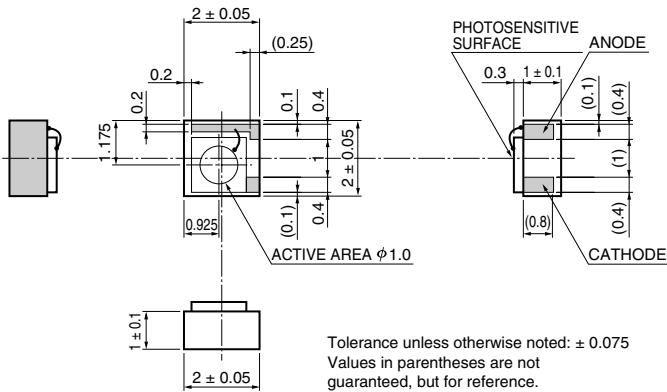
■ Dark current vs. temperature



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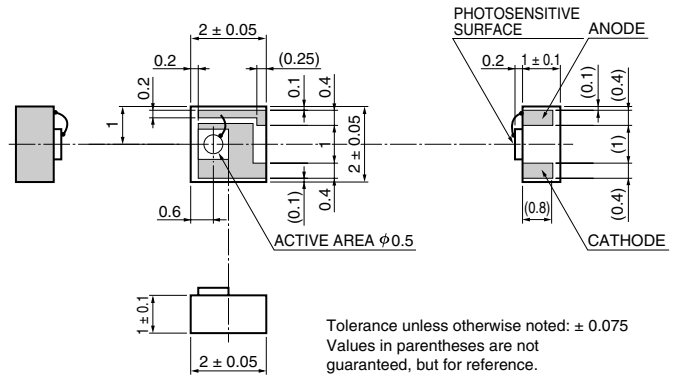
## Dimensional outline (unit: mm)

### G8941-01



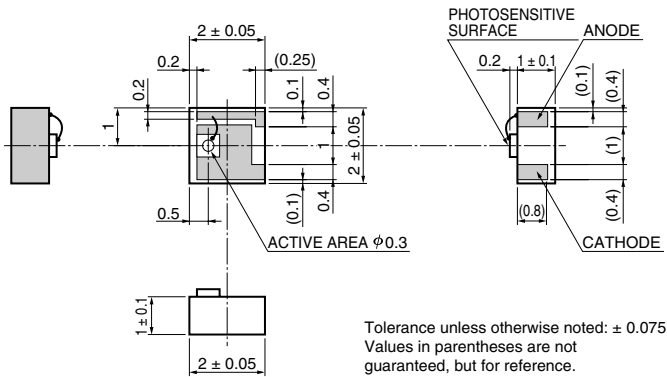
KIRDA0159EA

### G8941-02



KIRDA0160EA

### G8941-03



KIRDA0161EA