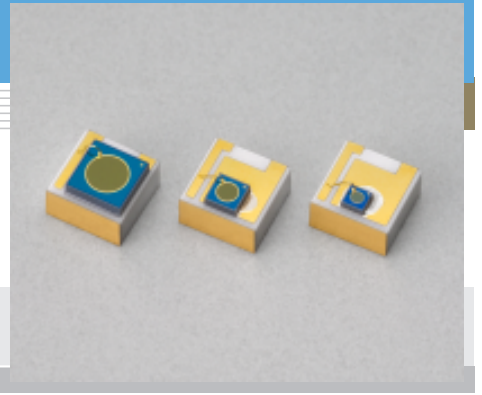


InGaAs PIN photodiode G8941 series

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: ± 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

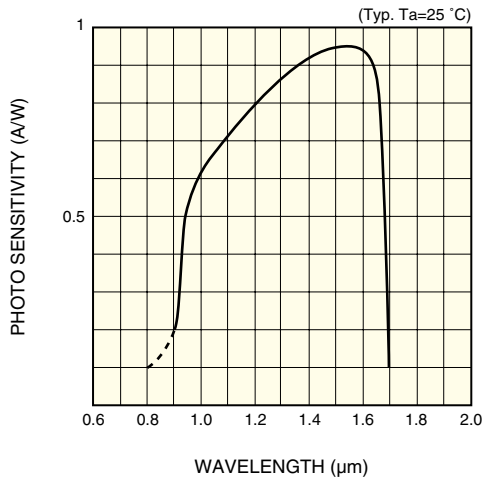
| Parameter | Symbol | Remark | G8941-01 | G8941-02 | G8941-03 | Unit |
|-----------------------|------------|--------|-------------|----------|----------|--------------------|
| Reverse voltage | V_R Max. | | 10 | 20 | 20 | V |
| Operating temperature | T_{opr} | * | -40 to +85 | | | $^{\circ}\text{C}$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

* In N_2 environment or in vacuum

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

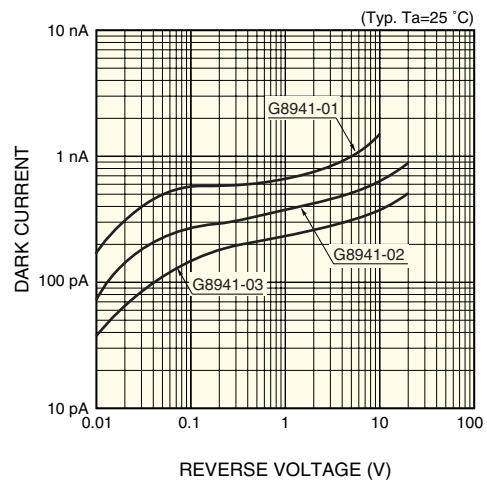
| Parameter | Symbol | Condition | G8941-01 | | | G8941-02 | | | G8941-03 | | | Unit |
|-------------------------|-----------|--|---------------------|------|------|---------------------|------|------|---------------------|------|------|------------------------------|
| | | | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | |
| Spectral response range | λ | | 0.9 to 1.7 | | | 0.9 to 1.7 | | | 0.9 to 1.7 | | | μm |
| 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 | $\lambda=\lambda_p$ | 2×10^{-14} | | | 8×10^{-15} | | | 4×10^{-15} | | | $\text{W}/\text{Hz}^{1/2}$ |
| Detectivity | D^* | $\lambda=\lambda_p$ | 5×10^{12} | | | 5×10^{12} | | | 5×10^{12} | | | $\text{cmHz}^{1/2}/\text{W}$ |

■ Spectral response



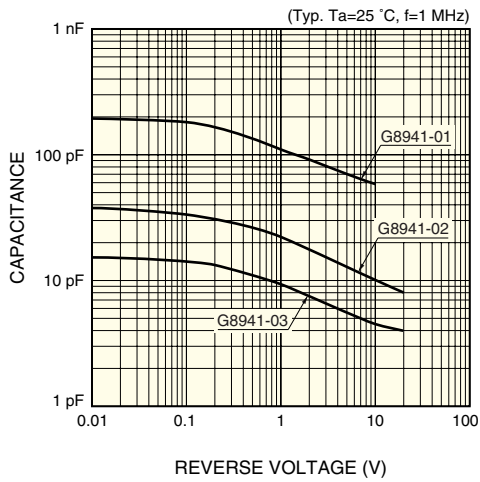
KIRDB0002EB

■ Dark current vs. reverse voltage



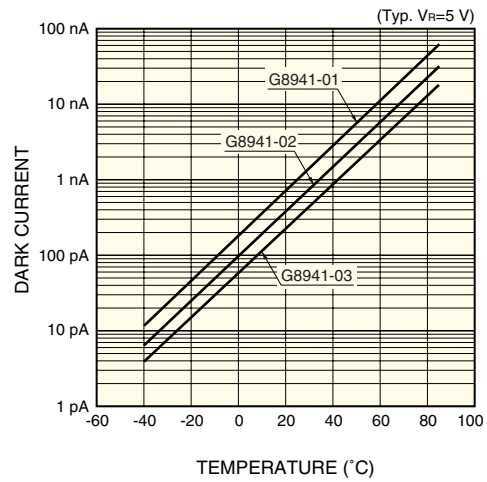
KIRDB0270EB

■ Terminal capacitance vs. reverse voltage



KIRDB0271EA

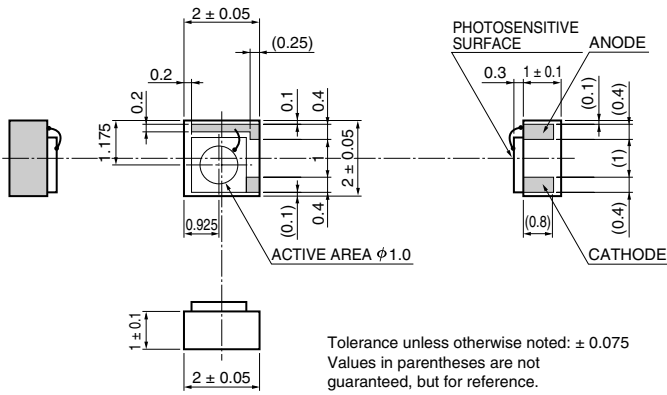
■ Dark current vs. temperature



KIRDB0272EA

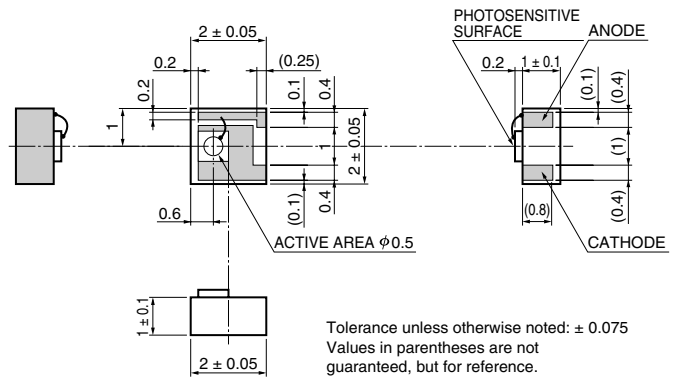
Dimensional outline (unit: mm)

G8941-01



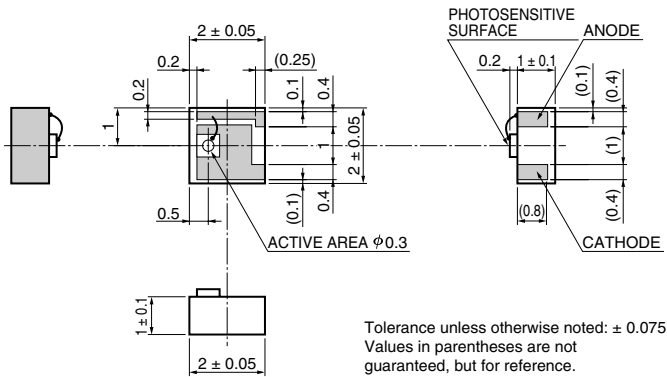
KIRDA0159EA

G8941-02



KIRDA0160EA

G8941-03



KIRDA0161EA