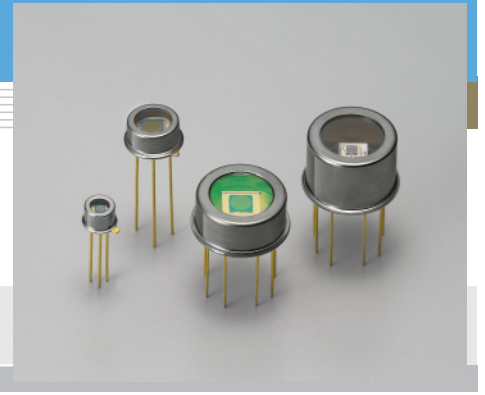


InGaAs PIN photodiode G8422/G8372/G5852 series

Long wavelength type (up to 2.1 μm)



Features

- Cut-off wavelength: 2.1 μm
- 3-pin TO-18 package: low price
- TE-cooled type TO-8 package: low dark current
- Active area: $\phi 0.3$ to $\phi 3$ mm

Applications

- Gas analyzer
- Water content analyzer
- NIR (Near Infrared) photometry

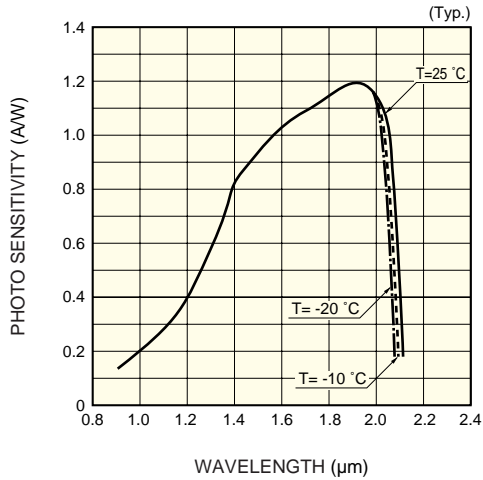
Specifications / Absolute maximum ratings

| Type No. | Dimensional outline | Package | Cooling | Active area (mm) | Absolute maximum ratings | | | | |
|-----------|---------------------|---------|---------------------|------------------|-----------------------------------|---------------------------------|---------------------------|--|--|
| | | | | | Thermistor power dissipation (mW) | TE-cooler allowable current (A) | Reverse voltage V_R (V) | Operating temperature T_{opr} ($^{\circ}\text{C}$) | Storage temperature T_{stg} ($^{\circ}\text{C}$) |
| G8422-03 | ① | TO-18 | Non-cooled | $\phi 0.3$ | - | - | 2 | -40 to +85 | -55 to +125 |
| G8422-05 | | | | $\phi 0.5$ | | | | | |
| G8372-01 | | | | $\phi 1$ | | | | | |
| G8372-03 | ② | TO-5 | | $\phi 3$ | | | | | |
| G5852-103 | ③ | TO-8 | One-stage TE-cooled | $\phi 0.3$ | 0.2 | 1.5 | 2 | -40 to +70 | -55 to +85 |
| G5852-11 | | | | $\phi 1$ | | | | | |
| G5852-13 | | | | $\phi 3$ | | | | | |
| G5852-203 | ④ | TO-8 | Two-stage TE-cooled | $\phi 0.3$ | 0.2 | 1.0 | 2 | -40 to +70 | -55 to +85 |
| G5852-21 | | | | $\phi 1$ | | | | | |
| G5852-23 | | | | $\phi 3$ | | | | | |

Electrical and optical characteristics (Typ. unless otherwise noted)

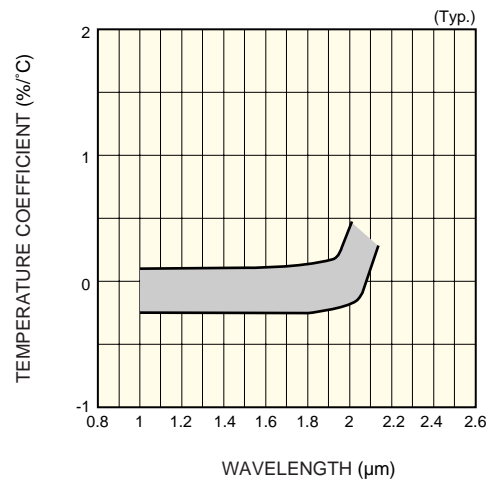
| Type No. | Measurement condition | Spectral response range λ | Peak sensitivity wavelength λ_p | Photo sensitivity $S_{\lambda=\lambda_p}$ | Dark current I_D | | Cut-off frequency f_c | Terminal capacitance C_t | Shunt resistance R_{sh} | D^* | NEP |
|-----------|-------------------------|-----------------------------------|---|---|---------------------|----------------------|-------------------------|----------------------------|---------------------------|--|--------------------------------|
| | Element Temperature T | | | | $V_R=1\text{ V}$ | $V_R=1\text{ V}$ | | | | | |
| | ($^{\circ}\text{C}$) | (μm) | (μm) | (A/W) | Typ. (nA) | Max. (nA) | (MHz) | (pF) | (M Ω) | ($\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$) | ($\text{W}/\text{Hz}^{1/2}$) |
| G8422-03 | 25 | 0.9 to 2.1 | 1.95 | 1.2 | 55 | 550 | 100 | 8 | 0.9 | 2.5×10^{11} | 1.5×10^{-13} |
| G8422-05 | | | | | 125 | 1250 | 80 | 20 | 0.3 | | 2.5×10^{-13} |
| G8372-01 | | | | | 500 | 5000 | 40 | 80 | 0.1 | | 4×10^{-13} |
| G8372-03 | | | | | 5 (μA) | 50 (μA) | 3 | 800 | 0.01 | | 1.5×10^{-12} |
| G5852-103 | -10 | 0.9 to 2.07 | 1.95 | 1.2 | 5.5 | 55 | 100 | 8 | 9 | 8×10^{11} | 5×10^{-14} |
| G5852-11 | | | | | 50 | 500 | 40 | 80 | 1 | | 1×10^{-13} |
| G5852-13 | | | | | 500 | 5000 | 3 | 800 | 0.1 | | 4×10^{-13} |
| G5852-203 | -20 | 0.9 to 2.05 | 1.95 | 1.2 | 3 | 30 | 100 | 8 | 18 | 1.2×10^{12} | 3×10^{-14} |
| G5852-21 | | | | | 25 | 250 | 40 | 80 | 2 | | 8×10^{-14} |
| G5852-23 | | | | | 250 | 2500 | 3 | 800 | 0.2 | | 3×10^{-13} |

■ Spectral response



KIRDB0226EA

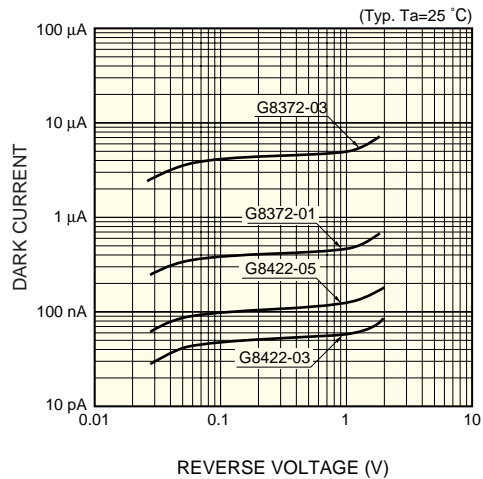
■ Photo sensitivity temperature characteristic



KIRDB0207EA

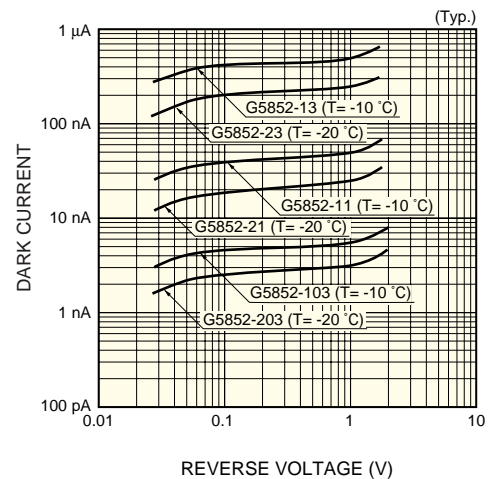
■ Dark current vs. reverse voltage

Non-cooled type



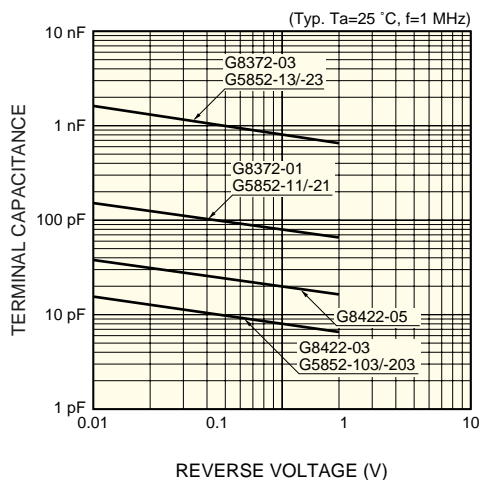
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TE-cooled type



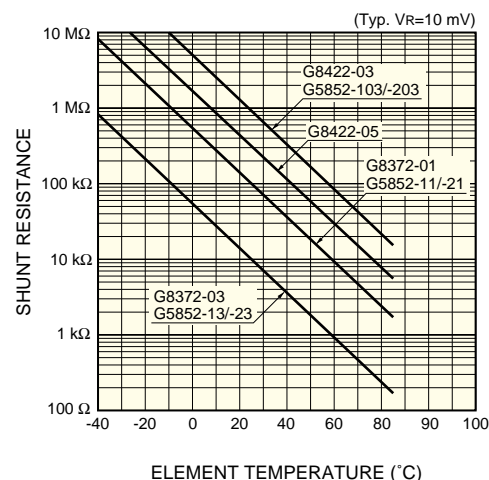
KIRDB0228EA

■ Terminal capacitance vs. reverse voltage



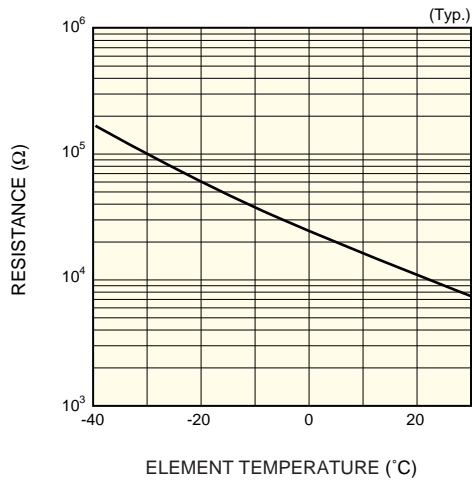
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■ Shunt resistance vs. element temperature



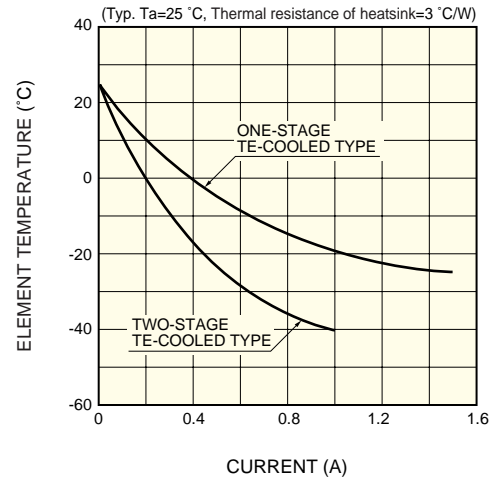
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■ Thermistor temperature characteristic



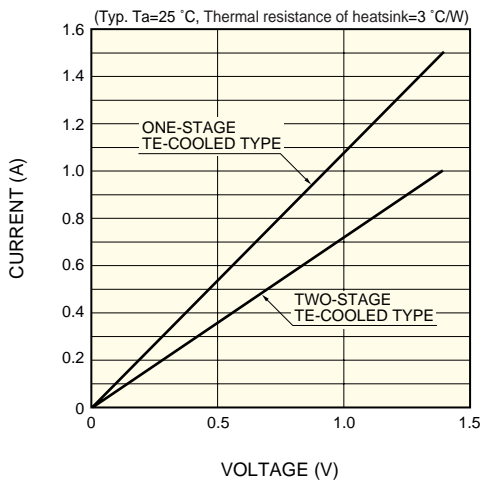
KIRDB0116EA

■ Cooling characteristics of TE-cooler



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■ Current vs. voltage characteristics of TE-cooler

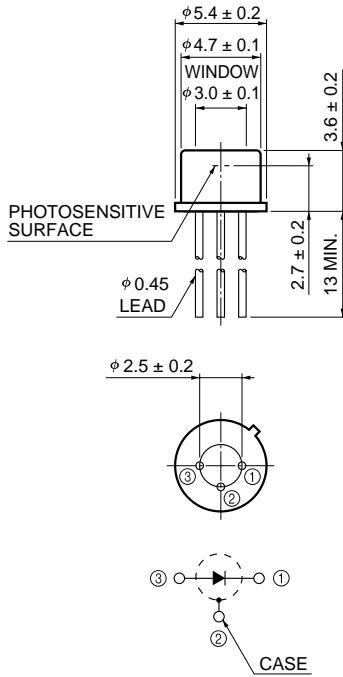


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InGaAs PIN photodiode G8422/G8372/G5852 series

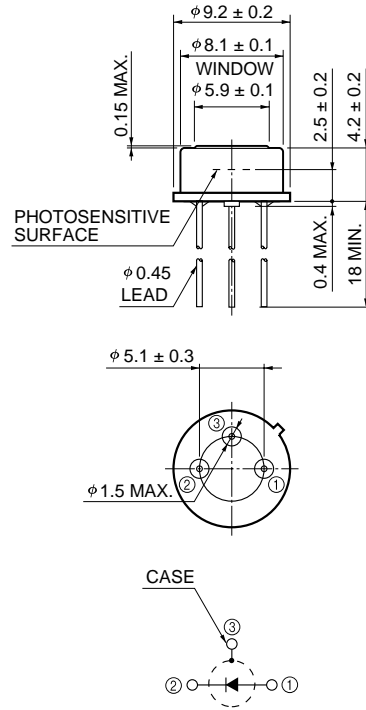
■ Dimensional outline (unit: mm)

① G8422-03/-05, G8372-01



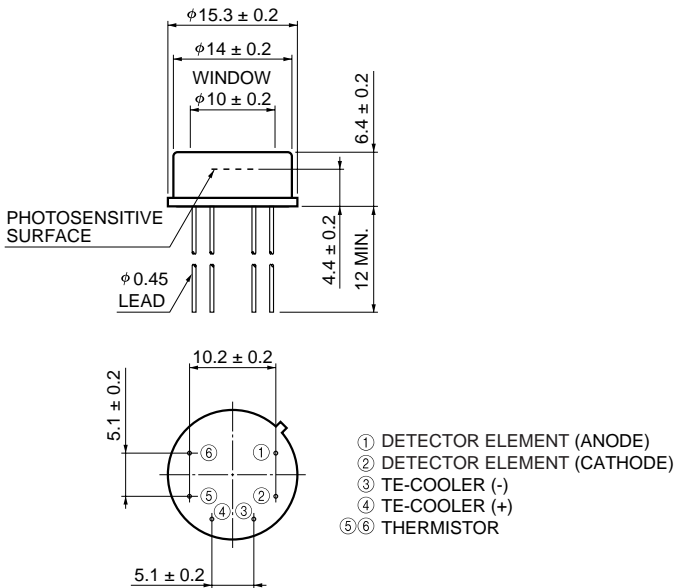
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② G8372-03



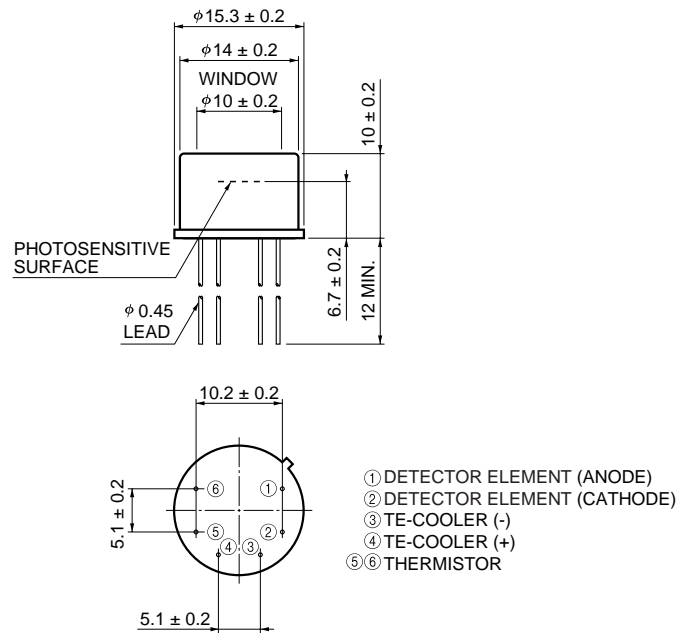
KIRDA0151EA

③ G5852-103/-11/-13



KIRDA0029EB

④ G5852-203/-21/-23



KIRDA0031EB

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