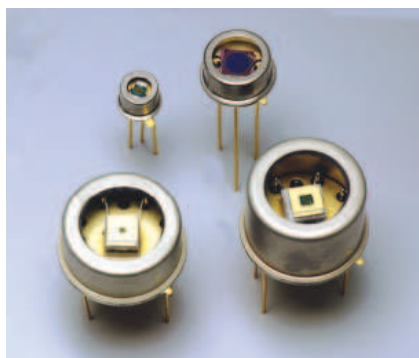




InGaAs PIN photodiodes

G8422/G8372/G5852 series

Long wavelength type
(Cut-off wavelength: 2.05 to 2.1 μm)

Features

- **Cut-off wavelength: 2.05 to 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**

Accessories (Optional)

- **Preamp for InGaAs PIN photodiode** **C4159-03**
- **Heatsink for one-stage TE-cooled type** **A3179**
- **Heatsink for two-stage TE-cooled type** **A3179-01**
- **Temperature controller for TE-cooled type** **C1103-04**

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} (°C)	Storage temperature T _{stg} (°C)
G8422-03	①	TO-18	Non-cooled	φ0.3	-	-	2	-40 to +85	-55 to +125
G8422-05				φ0.5					
G8372-01				φ1					
G8372-03	②	TO-5		φ3					
G5852-103	③	TO-8	One-stage TE-cooled	φ0.3	0.2	1.5	2	-40 to +70	-55 to +85
G5852-11				φ1					
G5852-13				φ3					
G5852-203	④	TO-8	Two-stage TE-cooled	φ0.3		1.0			
G5852-21				φ1					
G5852-23				φ3					

Electrical and optical characteristics (Typ. unless otherwise noted)

Type No.	Measurement condition	Spectral response range λ (μm)	Peak sensitivity wavelength λ_p (μm)	Photo sensitivity $S_{\lambda=\lambda_p}$ (A/W)		Dark current I_D (nA)		Cut-off frequency f_c (MHz)	Terminal capacitance C_t (pF)	Shunt resistance R_{sh} ($\text{M}\Omega$)	D^* ($\text{cm}^2\text{Hz}^{1/2}/\text{W}$)	NEP ($\text{W}/\text{Hz}^{1/2}$)
	Element Temperature T ($^{\circ}\text{C}$)			Min. (A/W)	Typ. (A/W)	Typ. (nA)	Max. (nA)					
G8422-03	25	0.9 to 2.1	1.95	0.9	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	0.9	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						3	30	100	8	18		3×10^{-14}
G5852-21	-20	0.9 to 2.05	1.95	0.9	1.2	25	250	40	80	2	1.2×10^{12}	8×10^{-14}
G5852-23						250	2500	3	800	0.2		3×10^{-13}

The G8422/G8372/G5852 series may be damaged by electrostatic discharge, etc. Be carefull when using the G8422/G8372/G5852 series.

Spectral response

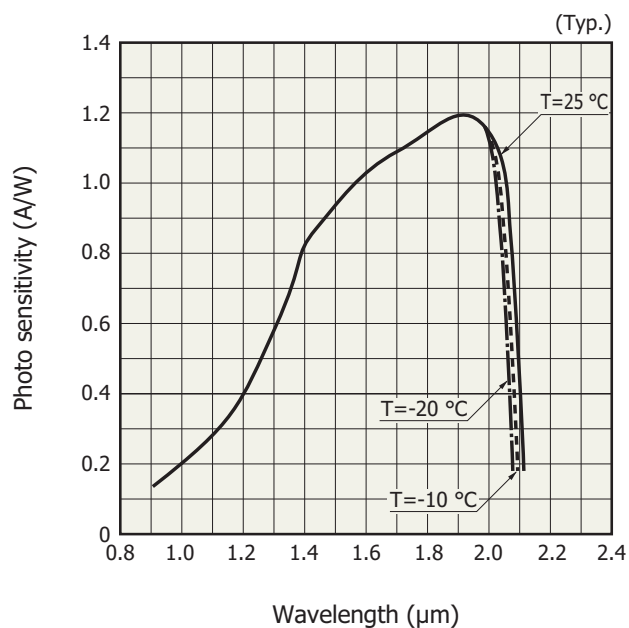
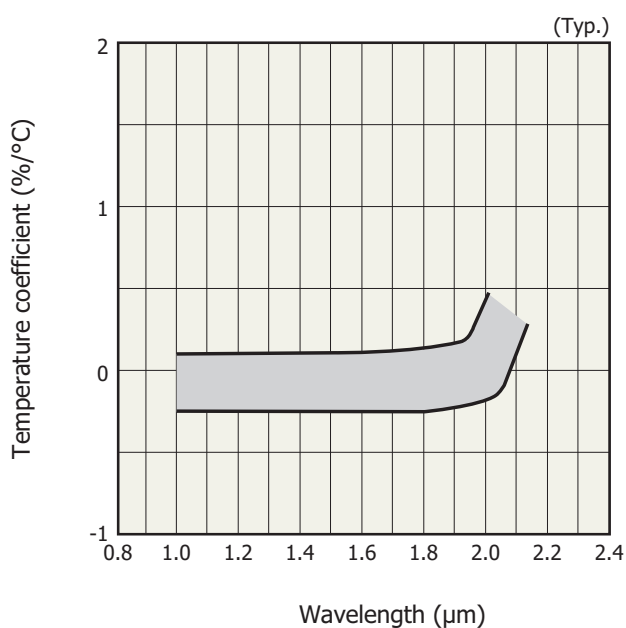
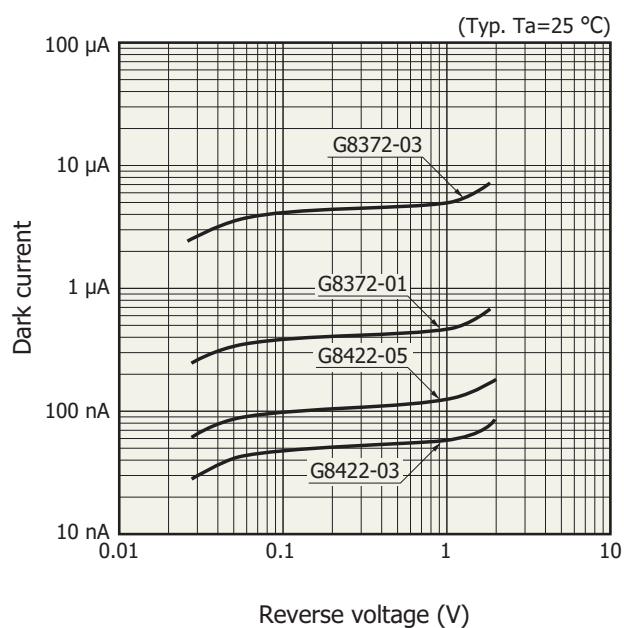


Photo sensitivity temperature characteristic

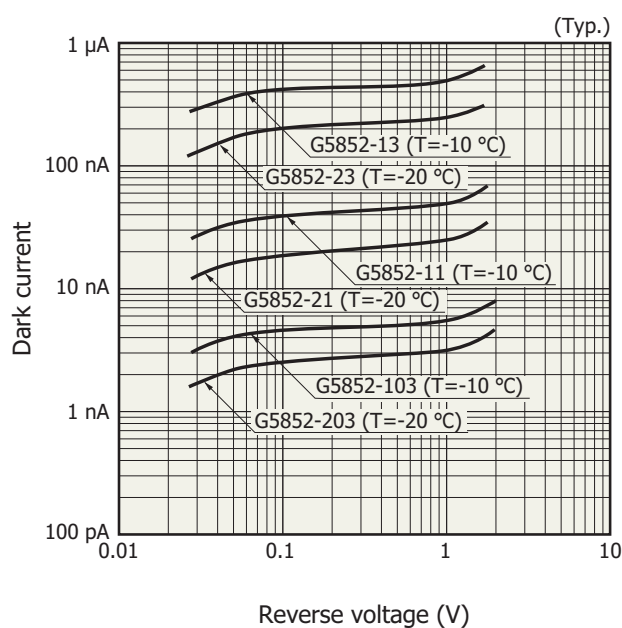


Dark current vs. reverse voltage

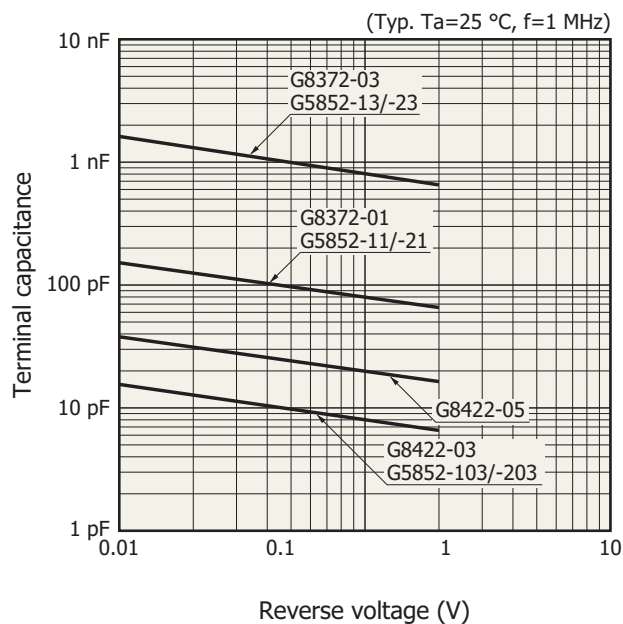
Non-cooled type



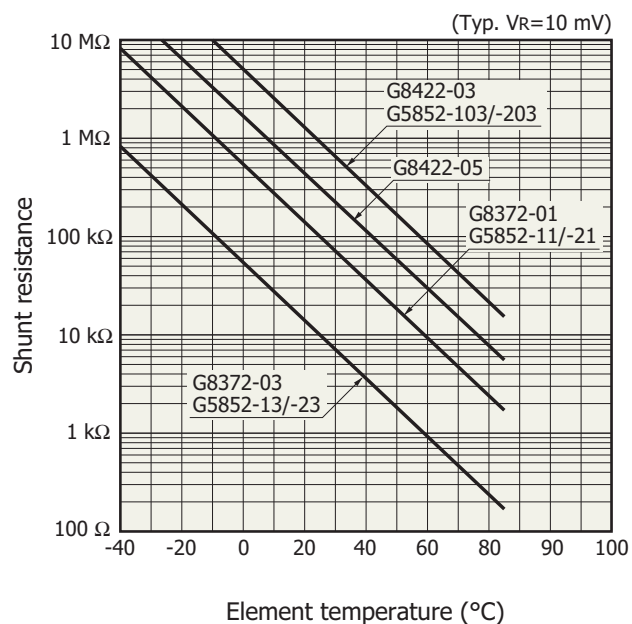
TE-cooled type



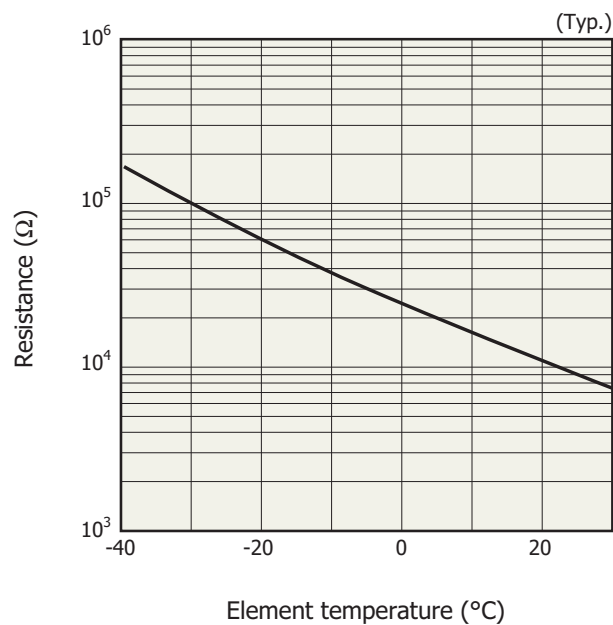
Terminal capacitance vs. reverse voltage



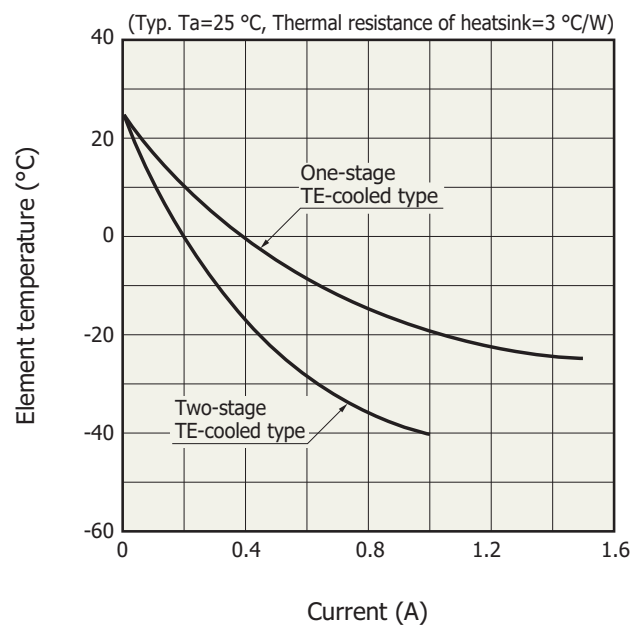
Shunt resistance vs. element temperature



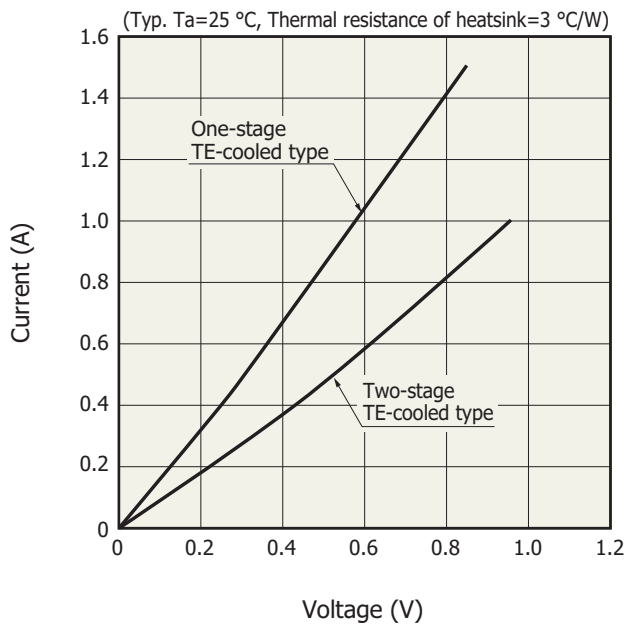
Thermistor temperature characteristic



Cooling characteristics of TE-cooler



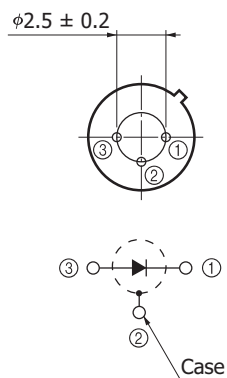
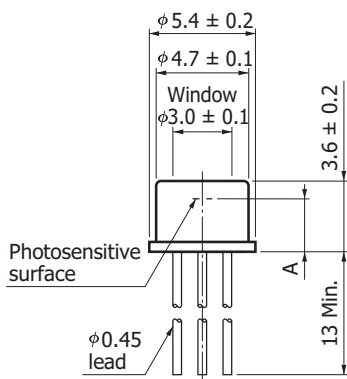
Current vs. voltage (TE-cooler)



KIRDB0115EB

Dimensional outlines (unit: mm)

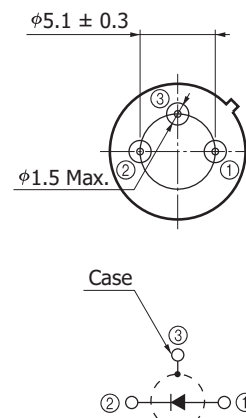
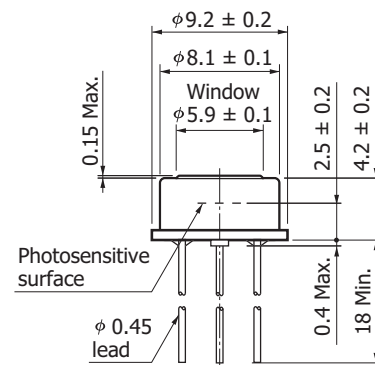
① G8422-03/-05, G8372-01



	G8422-03/-05	G8372-01
A	2.6 ± 0.2	2.7 ± 0.2

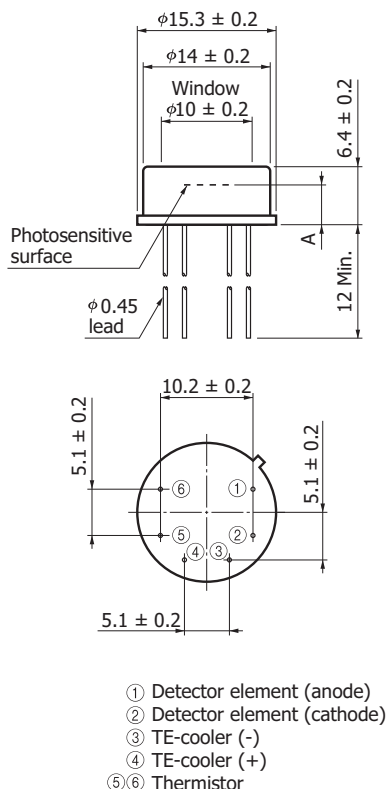
KIRDA0202EA

② G8372-03



KIRDA0151EA

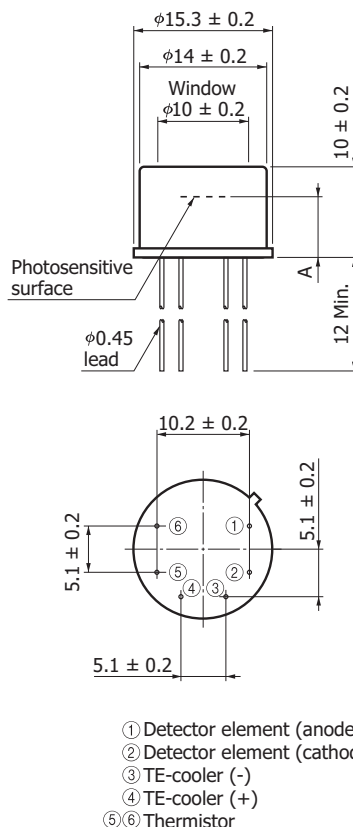
③ G5852-103/-11/-13



	G5852-103	G5852-11/-13
A	4.3 ± 0.2	4.4 ± 0.2

KIRDA0203EA

④ G5852-203/-21/-23



	G5852-203	G5852-21/-23
A	6.6 ± 0.2	6.7 ± 0.2

KIRDA0204EA

Information described in this material is current as of June, 2011. Product specifications are subject to change without prior notice due to improvements or other reasons. Before assembly into final products, please contact us for the delivery specification sheet to check the latest information.

Type numbers of products listed in the delivery specification sheets or supplied as samples may have a suffix "(X)" which means preliminary specifications or a suffix "(Z)" which means developmental 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.

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