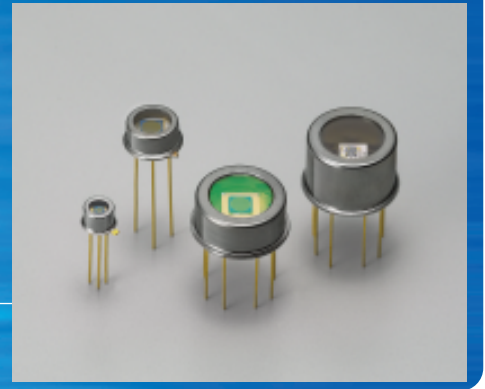


**NEW**

PHOTODIODE

# InGaAs PIN photodiode G8422/G8372/G5852 series

Long wavelength type (up to 2.1  $\mu\text{m}$ )



### Features

- Cut-off wavelength: 2.1  $\mu\text{m}$
- 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

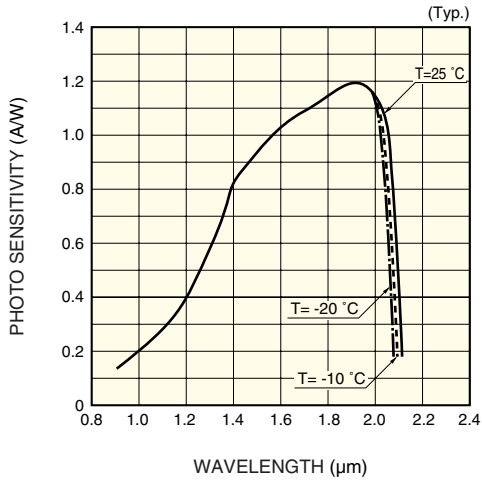
### Specifications / Absolute maximum ratings

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	$\phi 0.3$	-	-	-	-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)

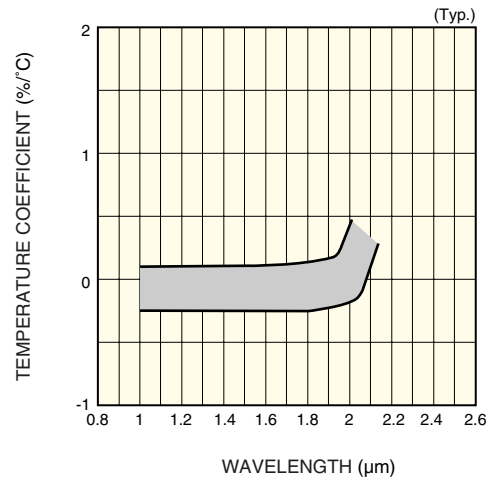
Type No.	Measurement condition	Spectral response range $\lambda$ ( $\mu\text{m}$ )	Peak sensitivity wavelength $\lambda_p$ ( $\mu\text{m}$ )	Photo sensitivity $S_{\lambda=\lambda_p}$ (A/W)	Dark current $I_D$ ( $V_R=1$ V)		Cut-off frequency $f_c$ ( $V_R=1$ V, $R_L=50$ $\Omega$ ) (MHz)	Terminal capacitance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

## Spectral response



KIRDB0226EA

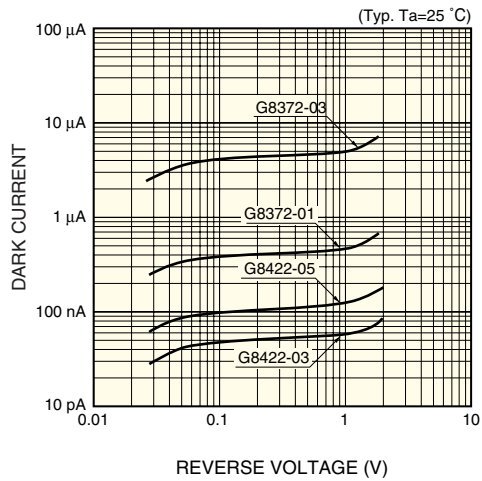
## Photo sensitivity temperature characteristic



KIRDB0207EA

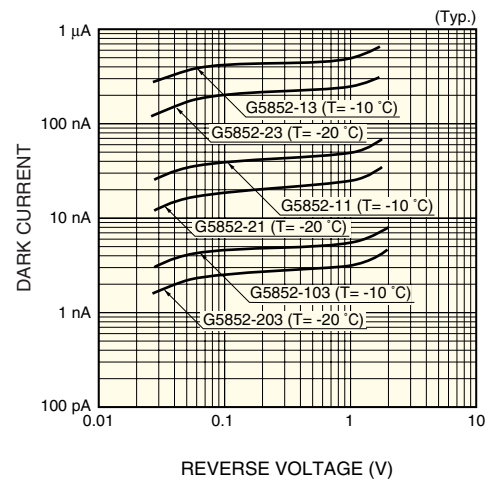
## Dark current vs. reverse voltage

### Non-cooled type



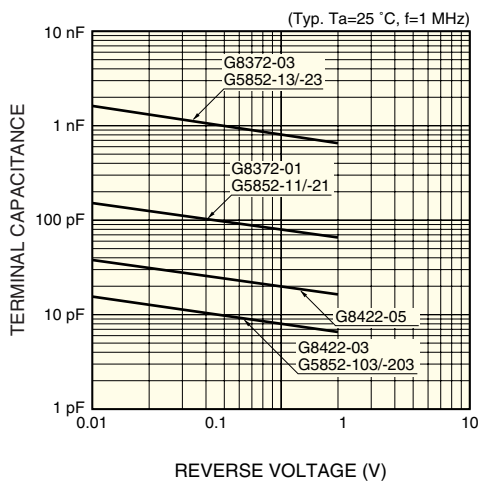
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### TE-cooled type



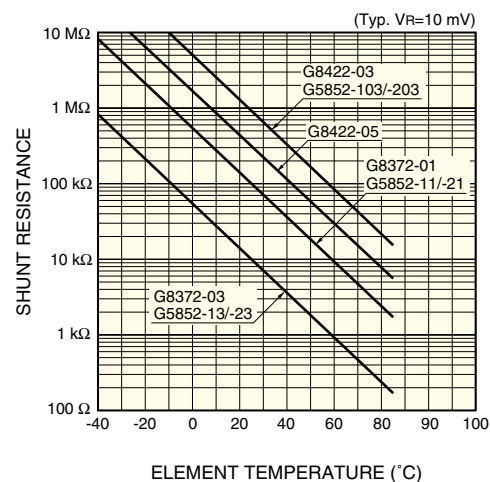
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## Terminal capacitance vs. reverse voltage



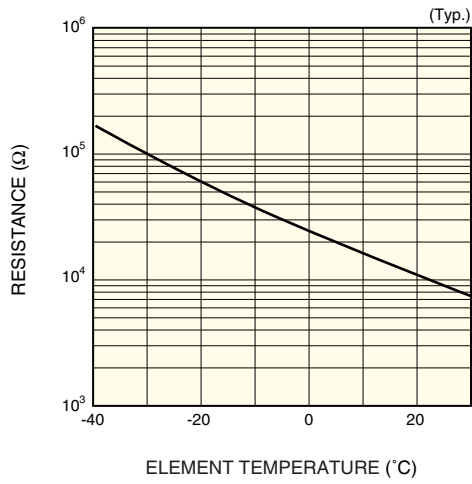
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## Shunt resistance vs. element temperature



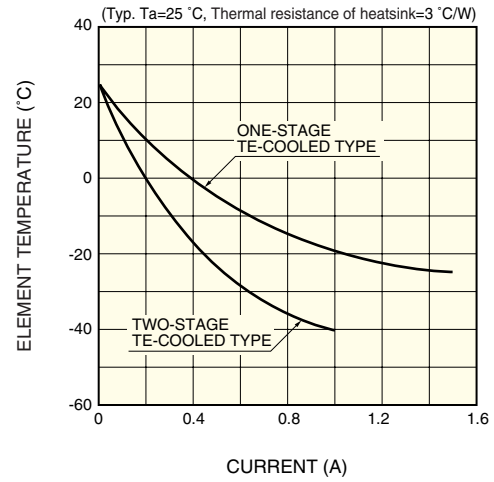
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■ Thermistor temperature characteristic



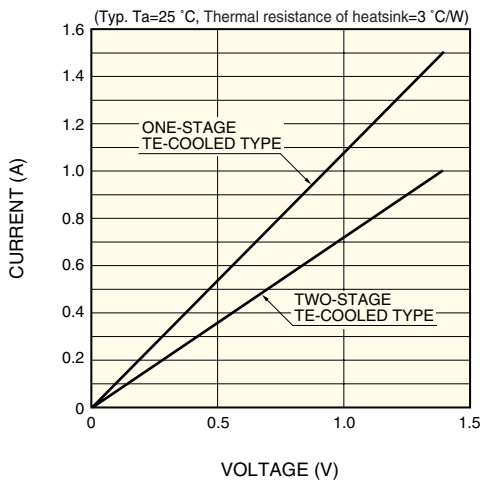
KIRDB0116EA

■ Cooling characteristics of TE-cooler



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■ Current vs. voltage characteristics of TE-cooler

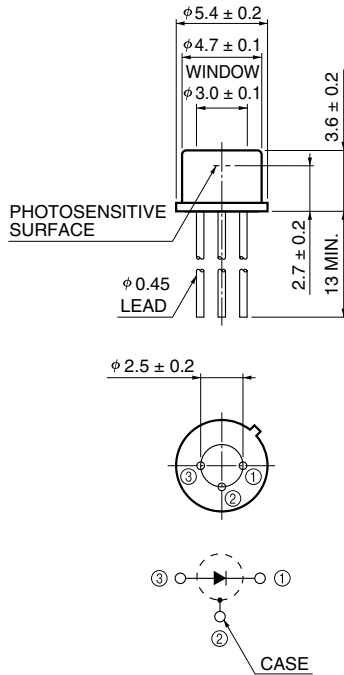


KIRDB0115EA

# InGaAs PIN photodiode G8422/G8372/G5852 series

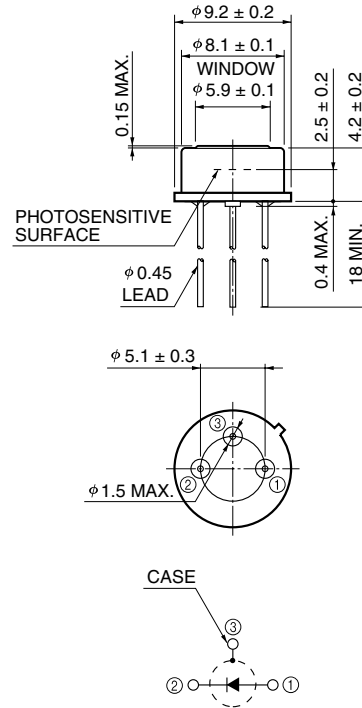
## Dimensional outline (unit: mm)

① G8422-03/-05, G8372-01



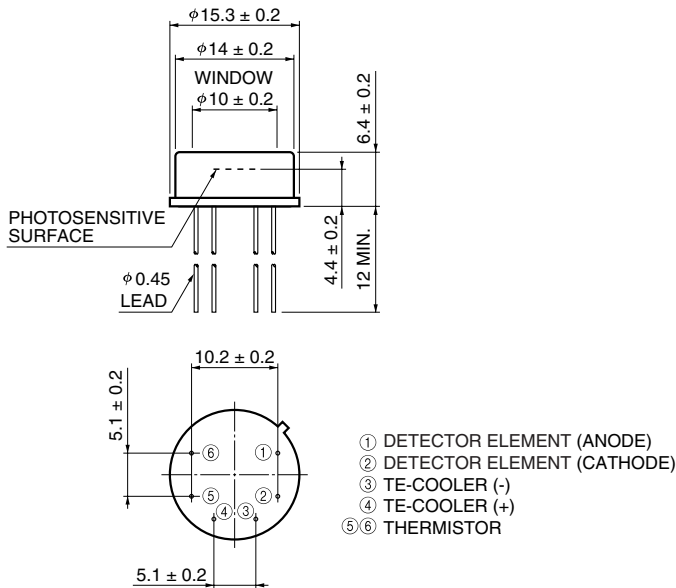
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② G8372-03



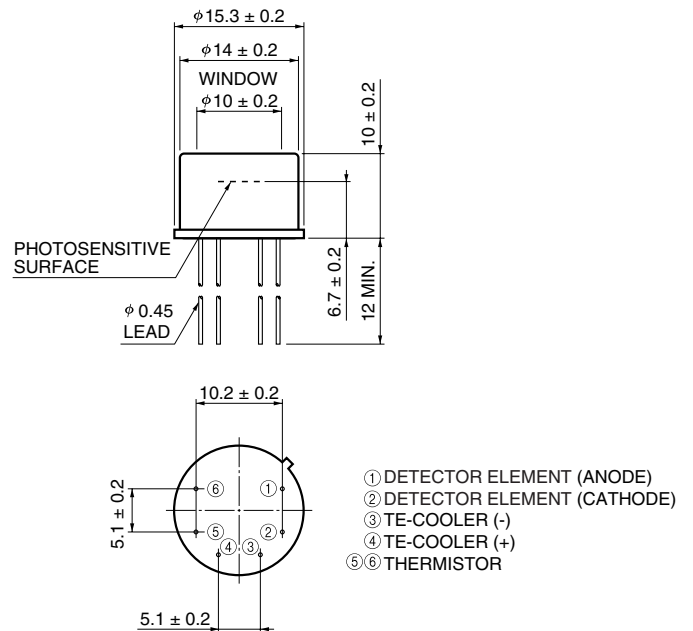
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③ G5852-103/-11/-13



KIRDA0029EB

④ G5852-203/-21/-23



KIRDA0031EB

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