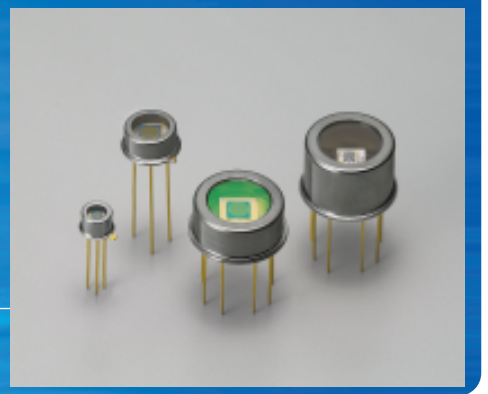


InGaAs PIN photodiode G8422/G8372/G5852 series

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

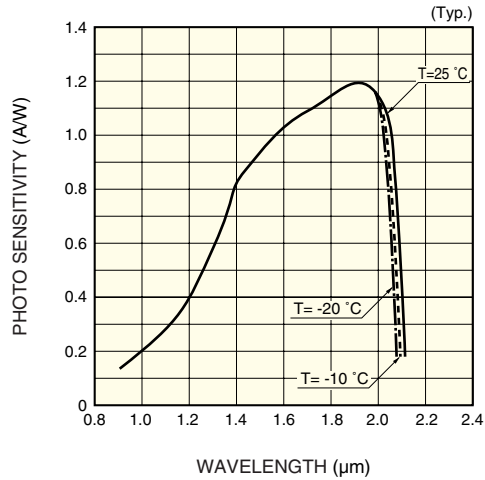
Specifications / Absolute maximum ratings

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	$\phi 0.3$	-	-		-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		-40 to +70	-55 to +85
G5852-21				$\phi 1$					
G5852-23				$\phi 3$					

Electrical and optical characteristics (Typ. unless otherwise noted)

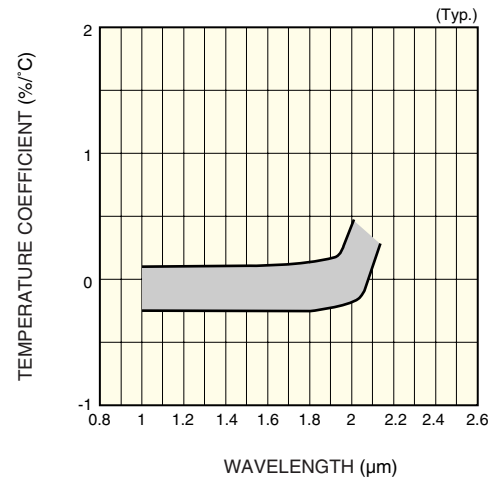
Type No.	Measurement condition	Spectral response range λ	Peak sensitivity wavelength λ_p	Photo sensitivity S $\lambda=\lambda_p$	Dark current I_D $V_R=1\text{ V}$		Cut-off frequency f_c $V_R=1\text{ V}$ $R_L=50\text{ }\Omega$	Terminal capacitance C_t $V_R=1\text{ V}$ $f=1\text{ MHz}$	Shunt resistance R_{sh} $V_R=10\text{ mV}$	D^* $\lambda=\lambda_p$	NEP $\lambda=\lambda_p$
	Element Temperature T										
	($^{\circ}\text{C}$)				(μm)	(μm)	(A/W)	Typ. (nA)	Max. (nA)		
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 1.95			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 1.95			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

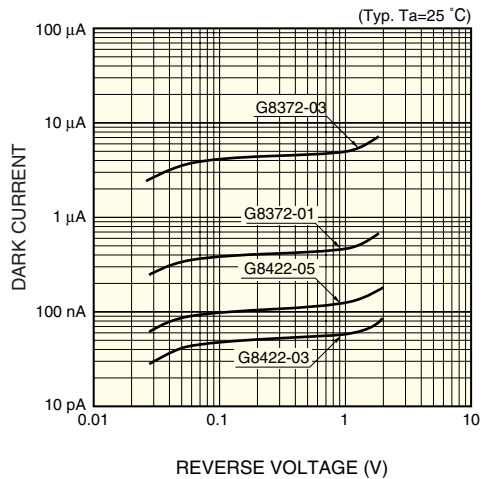
Photo sensitivity temperature characteristic



KIRDB0207EA

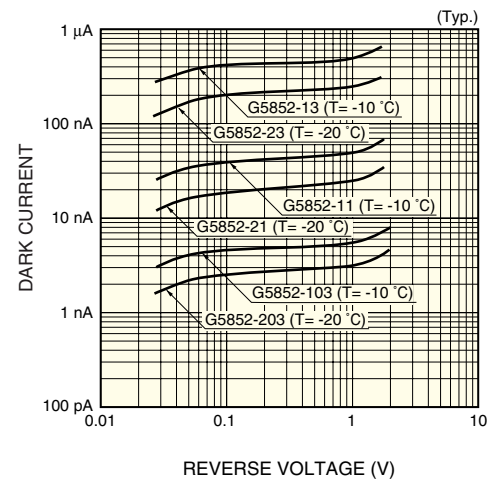
Dark current vs. reverse voltage

Non-cooled type



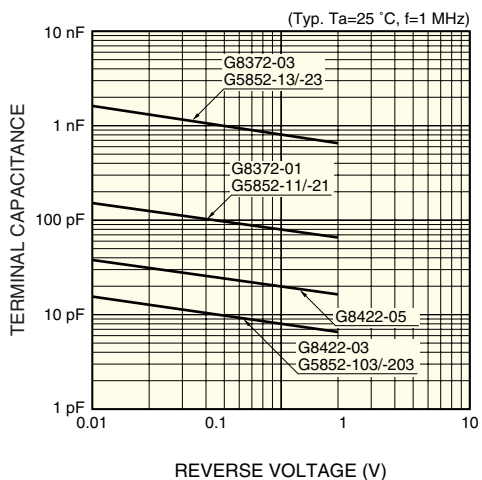
KIRDB0235EA

TE-cooled type



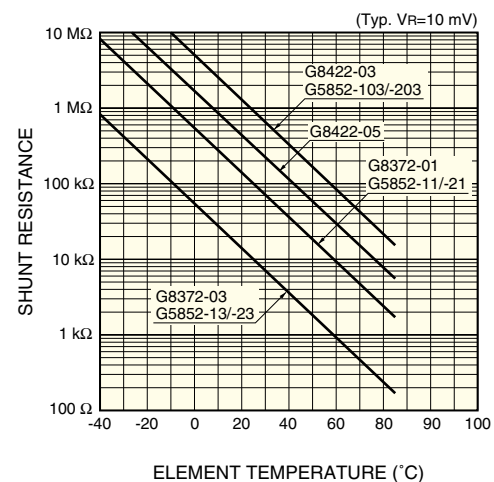
KIRDB0228EA

Terminal capacitance vs. reverse voltage



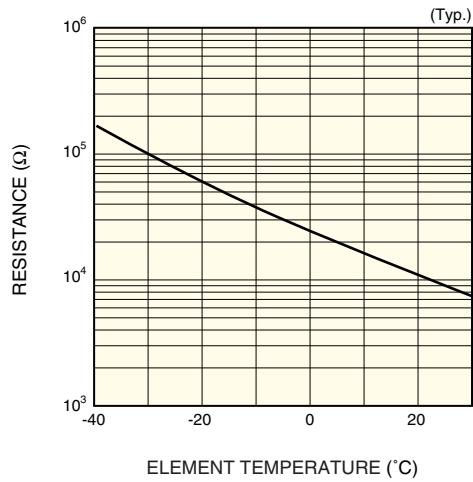
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Shunt resistance vs. element temperature



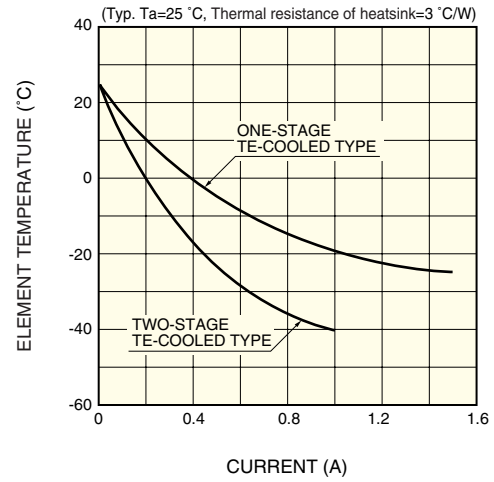
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■ Thermistor temperature characteristic



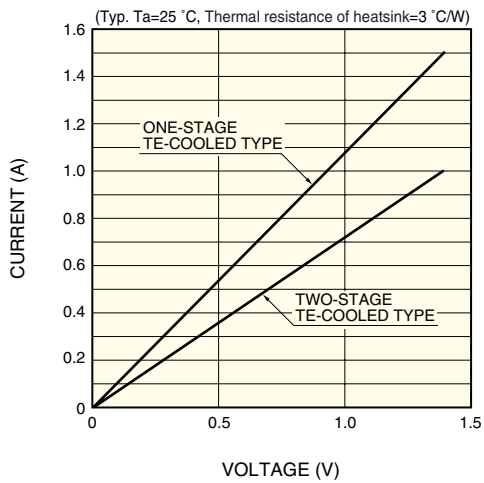
KIRDB0116EA

■ Cooling characteristics of TE-cooler



KIRDB0231EA

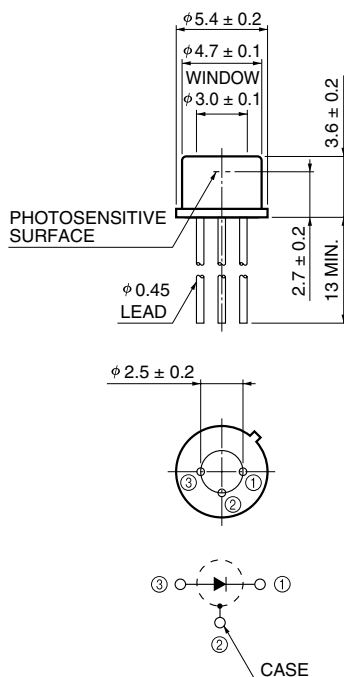
■ Current vs. voltage characteristics of TE-cooler



KIRDB0115EA

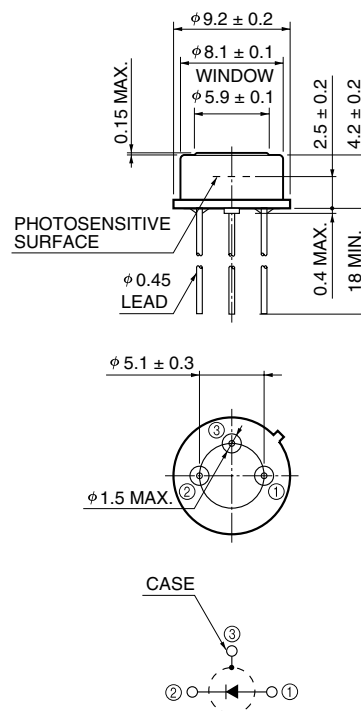
■ Dimensional outline (unit: mm)

① G8422-03/-05, G8372-01



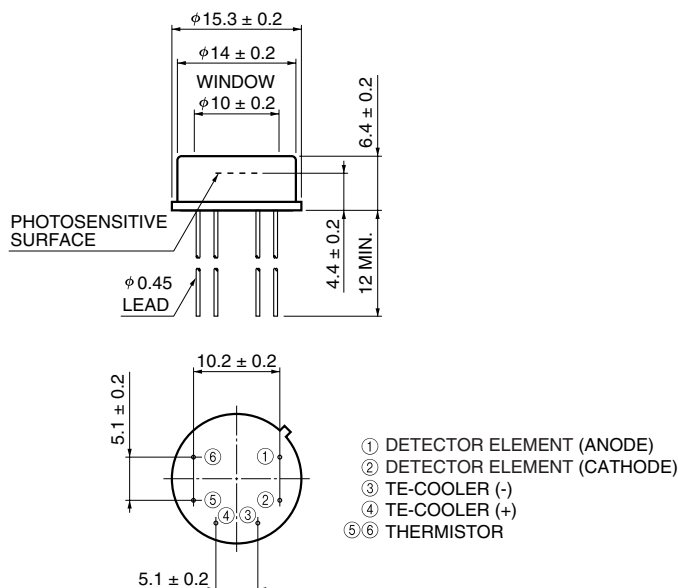
KIRDA0150EA

② G8372-03



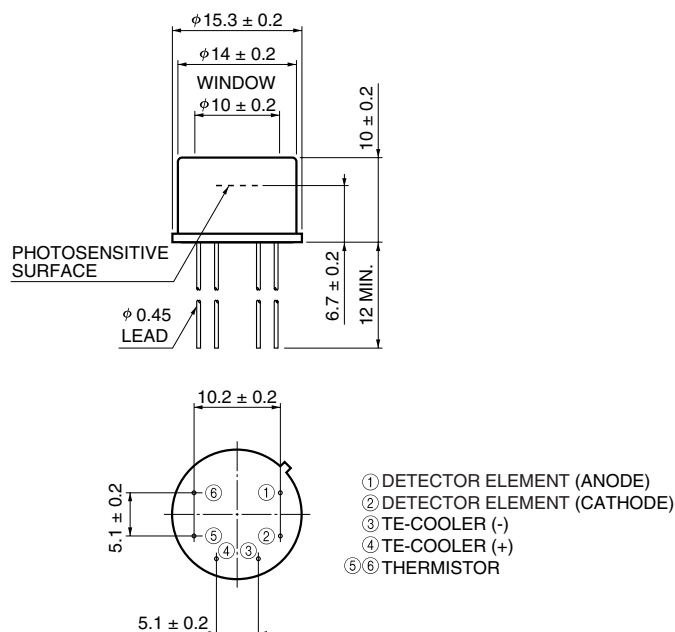
KIRDA0151EA

③ G5852-103/-11/-13



KIRDA0029EB

④ G5852-203/-21/-23



KIRDA0031EB

HAMAMATSU

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