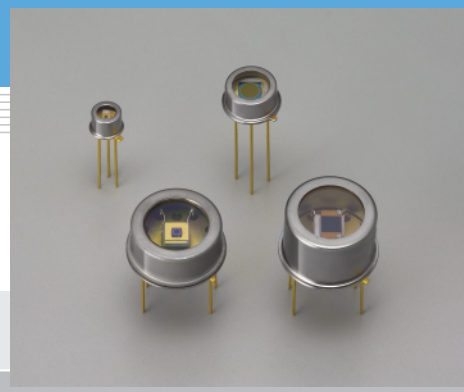


InGaAs PIN photodiode G8423/G8373/G5853 series

Long wavelength type (up to 2.6 μm)



Features

- Long cut-off wavelength: 2.6 μm
- 3-pin TO-18 package: low price
- Thermoelectrically cooled TO-8 package: low dark current
- Active area: $\phi 0.3$ to $\phi 3$ mm

Applications

- Gas analysis
- Spectrophotometer
- NIR (near infrared) photometry

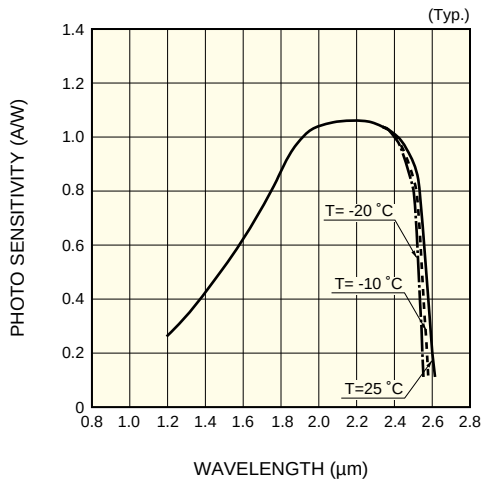
Specifications / Absolute maximum ratings

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} ($^{\circ}\text{C}$)
G8423-03	①	TO-18	Non-cooled	$\phi 0.3$	-	-		-40 to +85	-55 to +125
G8423-05				$\phi 0.5$					
G8373-01				$\phi 1$					
G8373-03	②	TO-5		$\phi 3$					
G5853-103	③	TO-8	One-stage TE-cooled	$\phi 0.3$	0.2	1.5	2	-40 to +70	-55 to +85
G5853-11				$\phi 1$					
G5853-13				$\phi 3$					
G5853-203	④	TO-8	Two-stage TE-cooled	$\phi 0.3$		1.0			
G5853-21				$\phi 1$					
G5853-23				$\phi 3$					

Electrical and optical characteristics (Typ. unless otherwise noted)

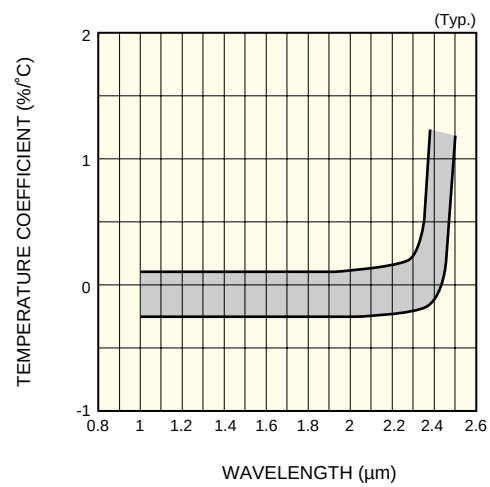
Type No.	Measurement condition	Spectral response range λ	Peak sensitivity wavelength λ_p	Photo sensitivity S $\lambda = \lambda_p$	Dark current I_D $V_R = 1 \text{ V}$		Cut-off frequency f_c $V_R = 1 \text{ V}$ $R_L = 50 \Omega$	Terminal capacitance C_t $V_R = 1 \text{ V}$ $f = 1 \text{ MHz}$	Shunt resistance R_{sh} $V_R = 10 \text{ mV}$	D^* $\lambda = \lambda_p$	NEP $\lambda = \lambda_p$
	Element temperature										
	($^{\circ}\text{C}$)	(μm)	(μm)	(A/W)	Typ. (μA)	Max. (μA)	-3 dB (MHz)	(pF)	(k Ω)	($\text{cm} \cdot \text{Hz}^{1/2}/\text{W}$)	($\text{W}/\text{Hz}^{1/2}$)
G8423-03	25	1.2 to 2.6	2.3	1.1	2	20	60	40	30	5×10^{10}	7×10^{-13}
G8423-05					5	50	50	60	15		1×10^{-12}
G8373-01					15	75	15	200	3		2×10^{-12}
G8373-03					150	1500	1.5	1800	0.3		8×10^{-12}
G5853-103	-10	1.2 to 2.57	2.3	1.1	0.2	2	60	40	300	1×10^{11}	3×10^{-13}
G5853-11					1.5	7.5	15	200	30		7×10^{-13}
G5853-13					15	150	1.5	1800	3		2×10^{-12}
G5853-203	-20	1.2 to 2.55	2.3	1.1	0.1	1	60	40	600	2×10^{11}	2×10^{-13}
G5853-21					0.8	4	15	200	60		5×10^{-13}
G5853-23					7.5	75	1.5	1800	6		1.8×10^{-12}

Spectral response



KIRDB0216EA

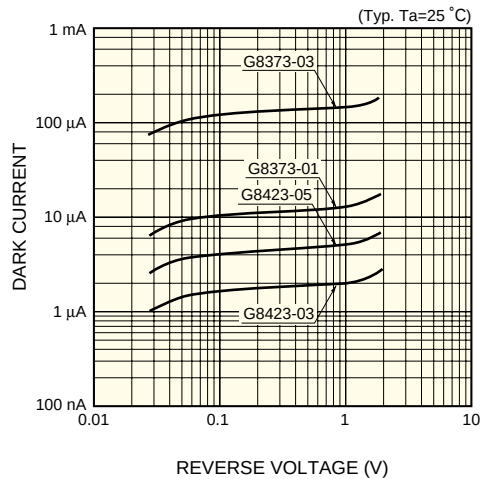
Photo sensitivity temperature characteristic



KIRDB0206EA

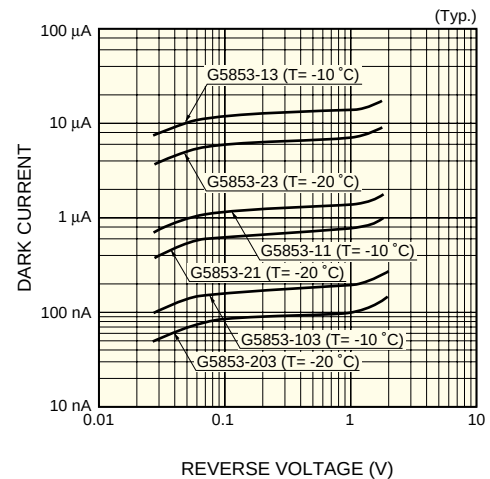
Dark current vs. reverse voltage

Non-cooled type



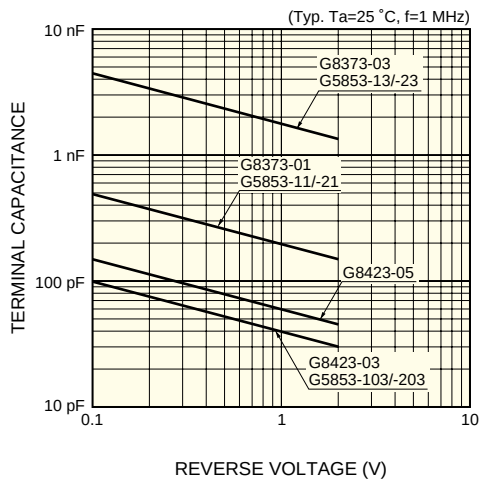
KIRDB0238EA

TE-cooled type



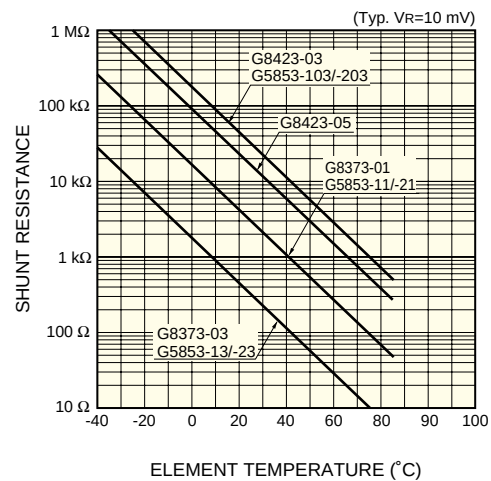
KIRDB0218EA

Terminal capacitance vs. reverse voltage



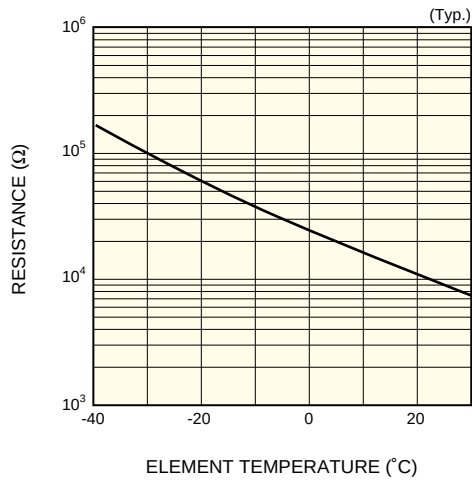
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Shunt resistance vs. element temperature

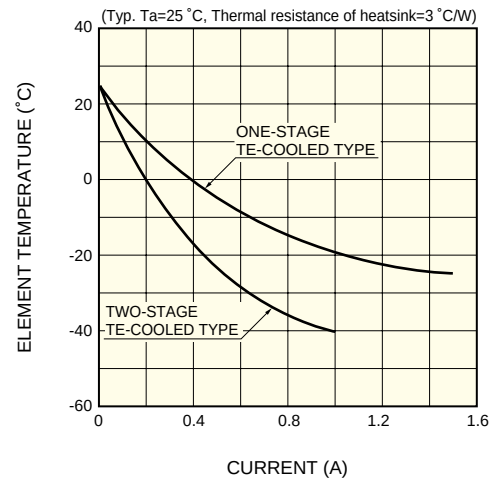


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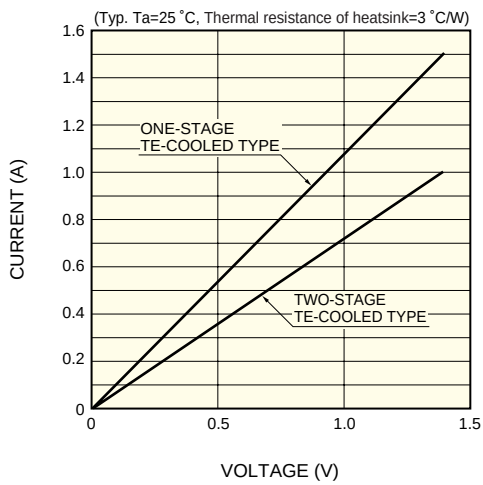
■ Thermistor temperature characteristic



■ Cooling characteristics of TE-cooler

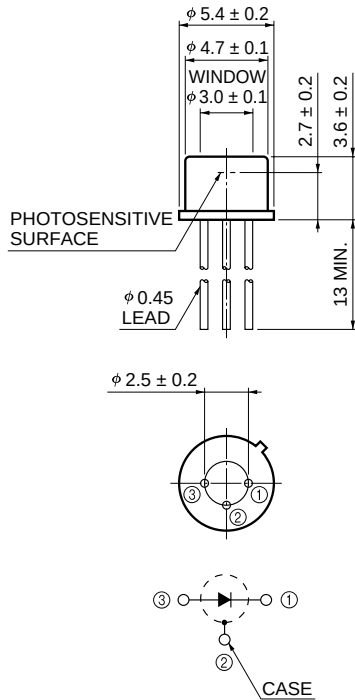


■ Current vs. voltage characteristics of TE-cooler



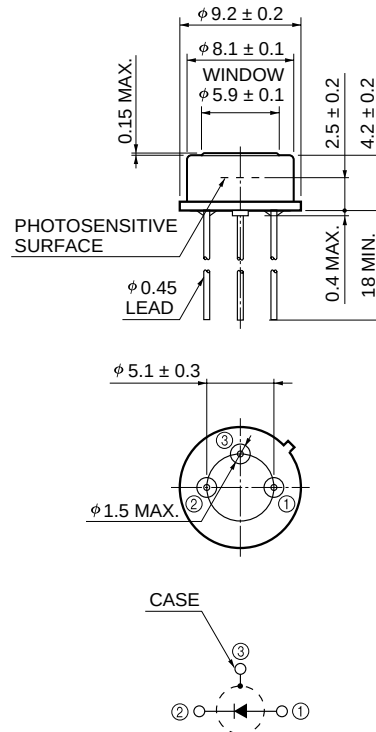
Dimensional outlines (unit: mm)

① G8423-03/-05, G8373-01



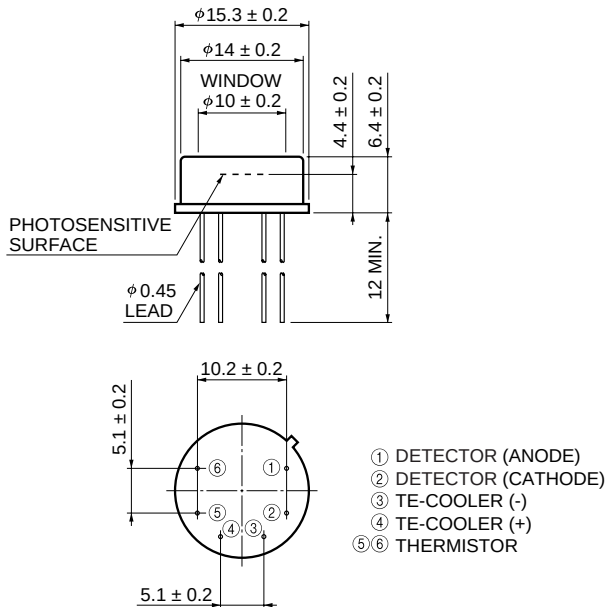
KIRDA0150EA

② G8373-03



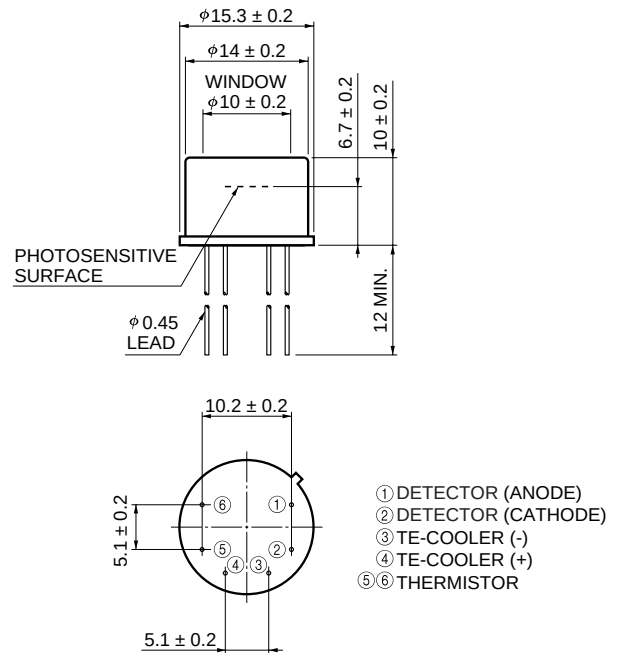
KIRDA0151EA

③ G5853-103/-11/-13



KIRDA0029EB

④ G5853-203/-21/-23



KIRDA0031EB

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