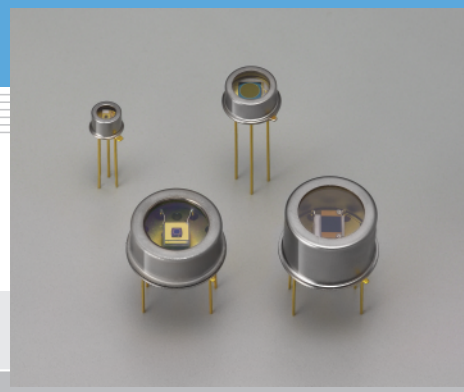


InGaAs PIN photodiode G8423/G8373/G5853 series

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

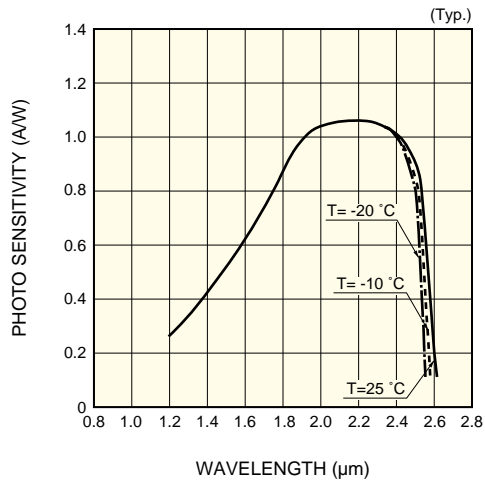
Specifications / Absolute maximum ratings

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	$\phi 0.3$	-	-	2	-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	$\phi 0.3$	0.2	1.0	2	-40 to +70	-55 to +85
G5853-21				$\phi 1$					
G5853-23				$\phi 3$					

Electrical and optical characteristics (Typ. unless otherwise noted)

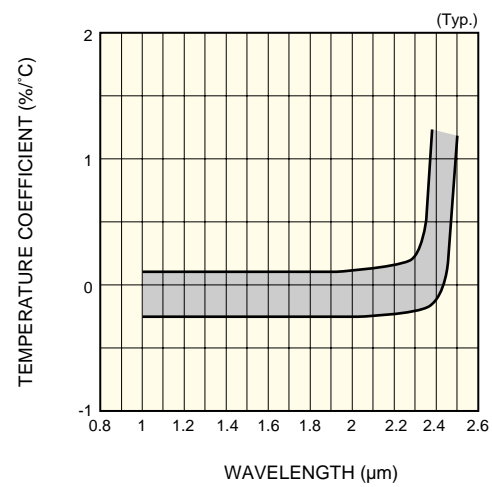
Type No.	Measurement condition	Spectral response range λ	Peak sensitivity wavelength λ_p	Photo sensitivity $S_{\lambda=\lambda_p}$	Dark current ID $V_R=1\text{ V}$		Cut-off frequency fc $V_R=1\text{ V}$ $R_L=50\ \Omega$ -3 dB (MHz)	Terminal capacitance Ct $V_R=1\text{ V}$ f=1 MHz (pF)	Shunt resistance Rsh $V_R=10\text{ mV}$ (k Ω)	D* $\lambda=\lambda_p$ (cm·Hz ^{1/2} /W)	NEP $\lambda=\lambda_p$ (W/Hz ^{1/2})
	Element temperature										
	(°C)	(μm)	(μm)	(A/W)	Typ. (μA)	Max. (μA)					
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			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			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

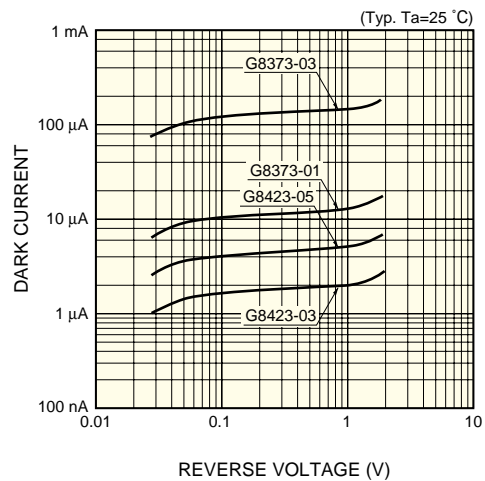
Photo sensitivity temperature characteristic



KIRDB0206EA

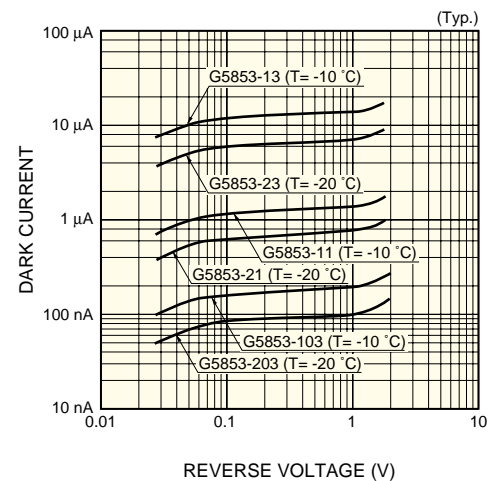
Dark current vs. reverse voltage

Non-cooled type



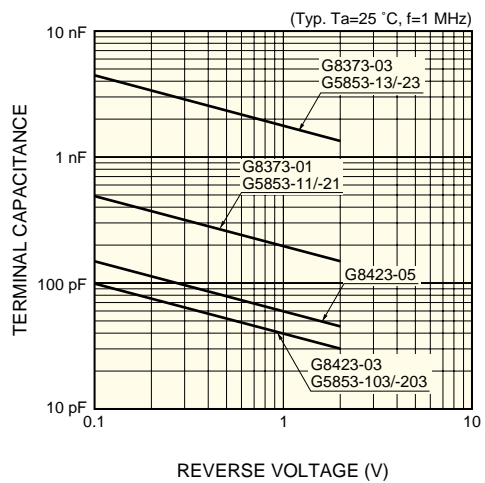
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TE-cooled type



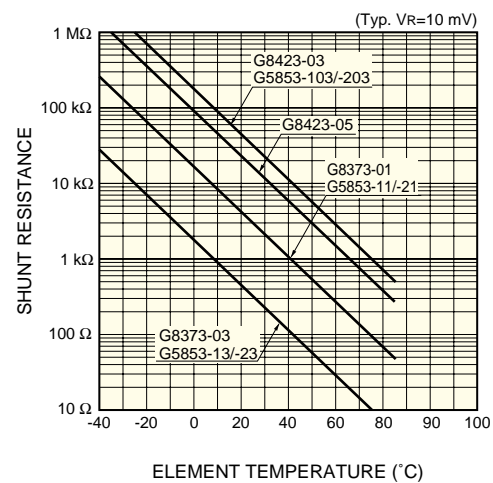
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Terminal capacitance vs. reverse voltage



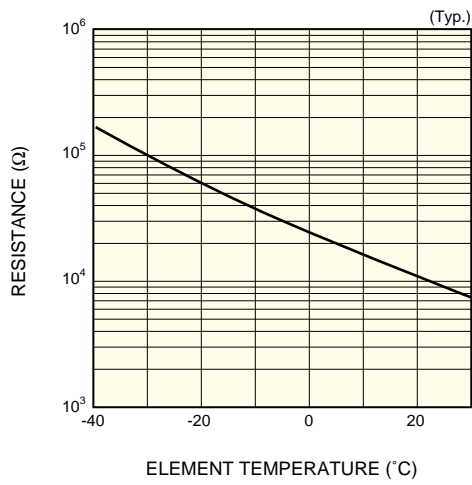
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Shunt resistance vs. element temperature



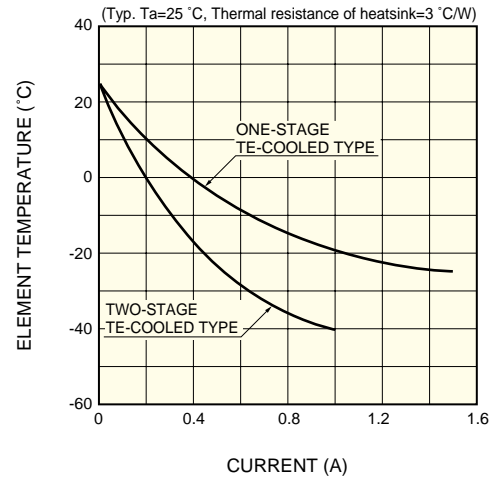
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■ Thermistor temperature characteristic



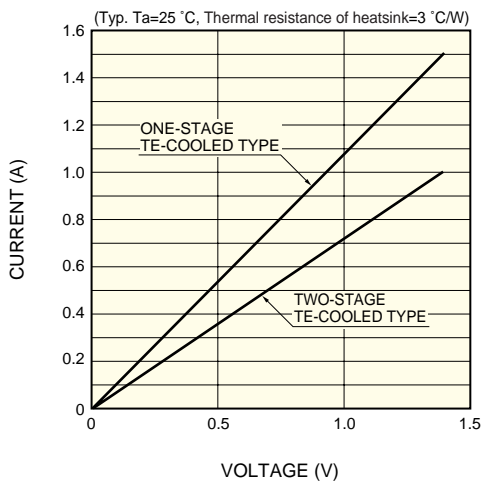
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■ Cooling characteristics of TE-cooler



KIRDB0231EA

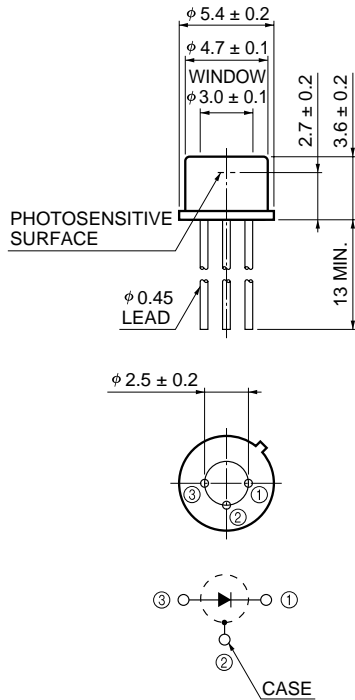
■ Current vs. voltage characteristics of TE-cooler



KIRDB0115EA

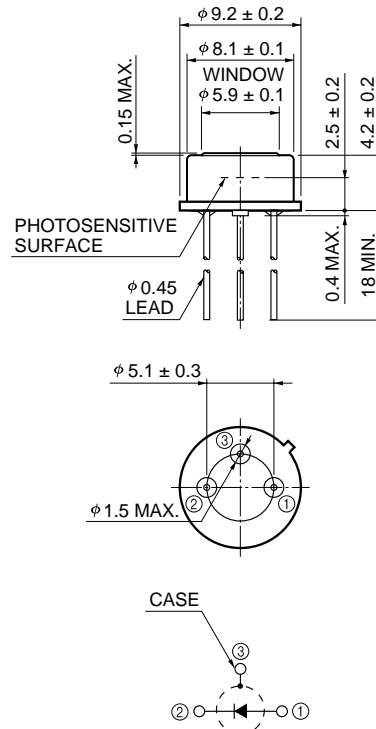
■ Dimensional outlines (unit: mm)

① G8423-03/-05, G8373-01



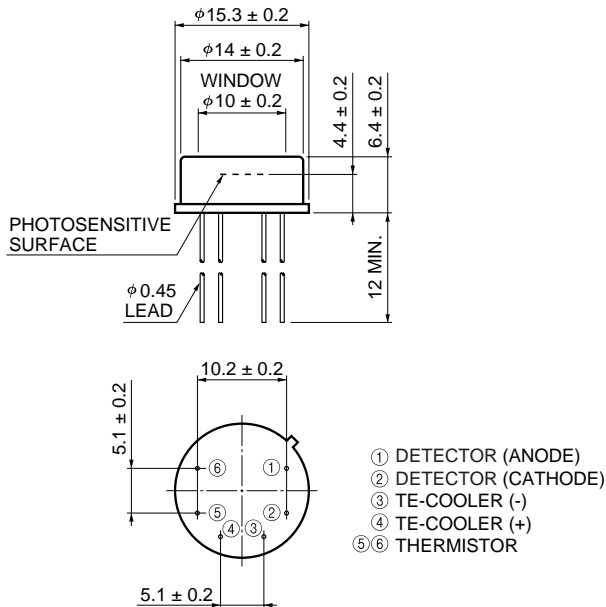
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② G8373-03



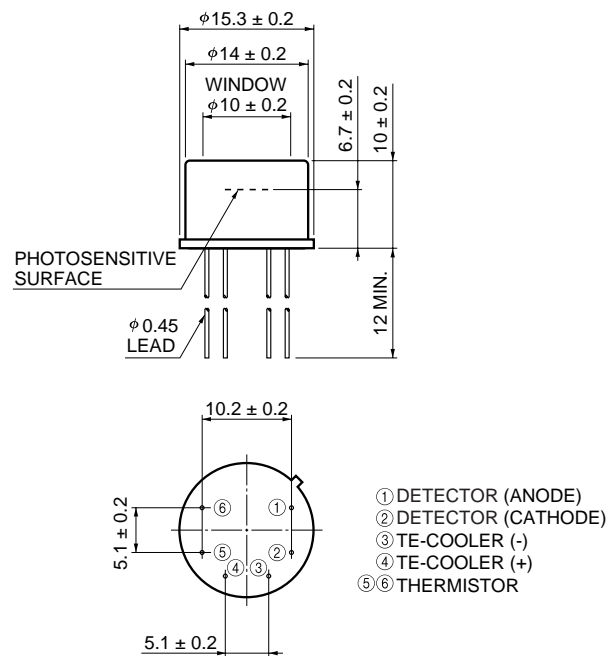
KIRDA0151EA

③ G5853-103/-11/-13



KIRDA0029EB

④ G5853-203/-21/-23



KIRDA0031EB

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