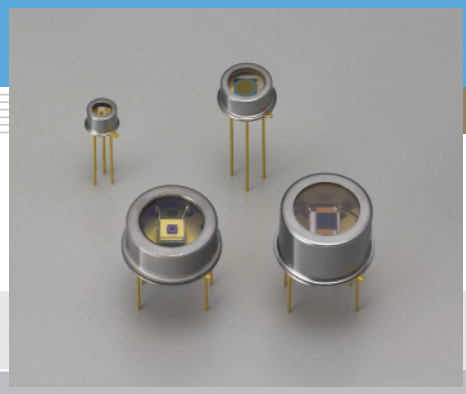


InGaAs PIN photodiode G8421/G8371/G5851 series

Long wavelength type



Features

- Long cut-off wavelength: 1.9 μm
- 3-pin TO-18 package: low price
- Thermoelectrically cooled TO-18 package: low dark current
- Active area: $\phi 0.3$ to $\phi 3$ mm

Applications

- Optical power meter
- Gas analyzer
- NIR (near infrared) photometry

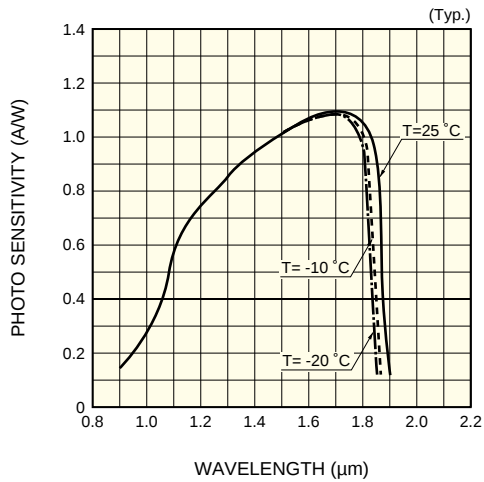
Specifications / Absolute maximum ratings

Type No.	Dimensional outline/ Window material	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)
G8421-03	①	TO-18	Non-cooled	$\phi 0.3$	-	-		-40 to +85	-55 to +125
G8421-05				$\phi 0.5$					
G8371-01				$\phi 1$					
G8371-03	②	TO-5		$\phi 3$					
G5851-103	③	TO-8	One-stage TE-cooled	$\phi 0.3$	0.2	1.5	2	-40 to +70	-55 to +85
G5851-11				$\phi 1$					
G5851-13				$\phi 3$					
G5851-203	④	TO-8	Two-stage TE-cooled	$\phi 0.3$	0.2	1.0			
G5851-21				$\phi 1$					
G5851-23				$\phi 3$					

Electrical and optical characteristics (Typ. unless otherwise noted)

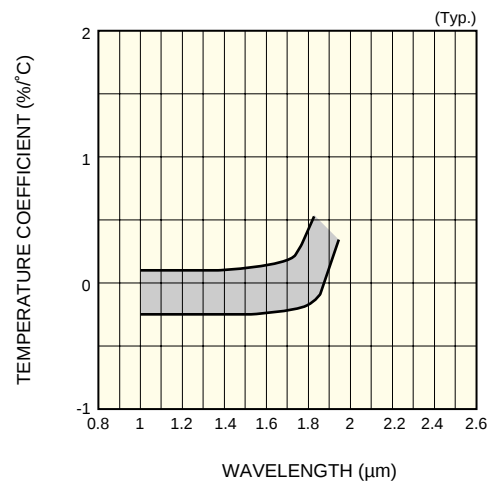
Type No.	Measurement Condition	Spectral response range λ	Peak sensitivity wavelength λ_p	Photo sensitivity S $\lambda=\lambda_p$	Dark current ID VR=1 V		Cut-off frequency fc VR=1 V RL=50 Ω -3 dB (MHz)	Terminal capacitance Ct VR=1 V f=1 MHz	Shunt resistance Rsh VR=10 mV	D* $\lambda=\lambda_p$	NEP $\lambda=\lambda_p$
	Element temperature (°C)				Typ. (nA)	Max. (nA)					
G8421-03	25	0.9 to 1.9	1.75	1.1	30	300	100	8	1.5	5 × 10 ¹¹	9 × 10 ⁻¹⁴
G8421-05					50	500	80	20	1		1.5 × 10 ⁻¹³
G8371-01					100	1000	40	80	0.5		2 × 10 ⁻¹³
G8371-03					2000	20000	3	800	0.05		8 × 10 ⁻¹³
G5851-103	-10	0.9 to 1.87			3	30	100	8	15	1.5 × 10 ¹²	3 × 10 ⁻¹⁴
G5851-11					10	100	40	80	5		6 × 10 ⁻¹⁴
G5851-13					200	2000	3	800	0.5		2 × 10 ⁻¹³
G5851-203	-20	0.9 to 1.85			1.5	15	100	8	35	2.5 × 10 ¹²	2 × 10 ⁻¹⁴
G5851-21					5	50	40	80	10		4 × 10 ⁻¹⁴
G5851-23					100	1000	3	800	1		1.5 × 10 ⁻¹³

Spectral response



KIRDB0221EA

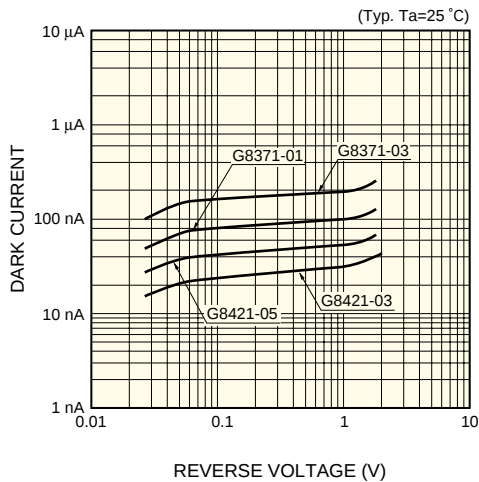
Photo sensitivity temperature characteristic



KIRDB0208EA

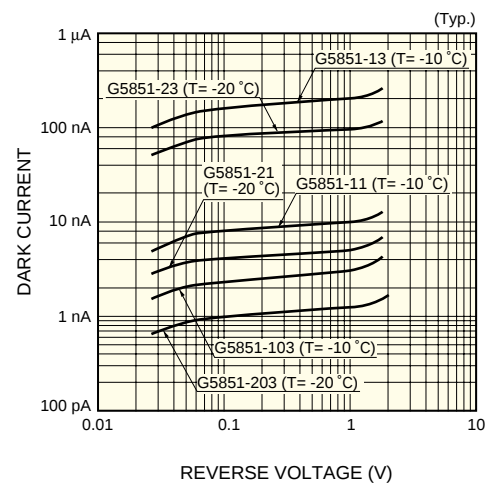
Dark current vs. reverse voltage

Non-cooled type



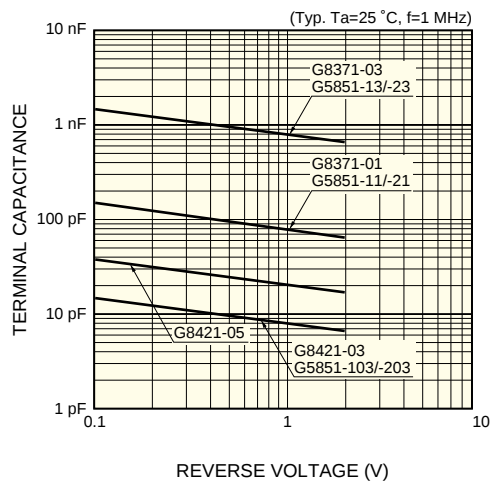
KIRDB0232EA

TE-cooled type



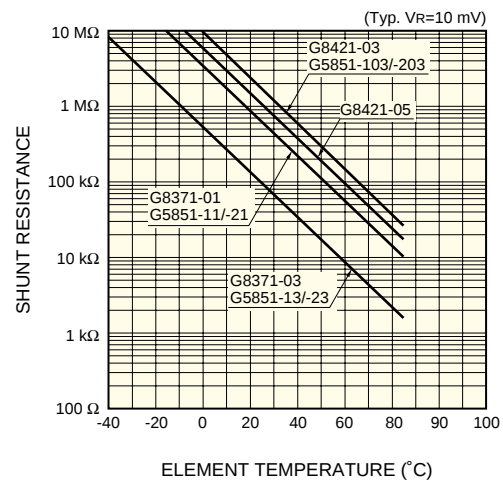
KIRDB0233EA

Terminal capacitance vs. reverse voltage



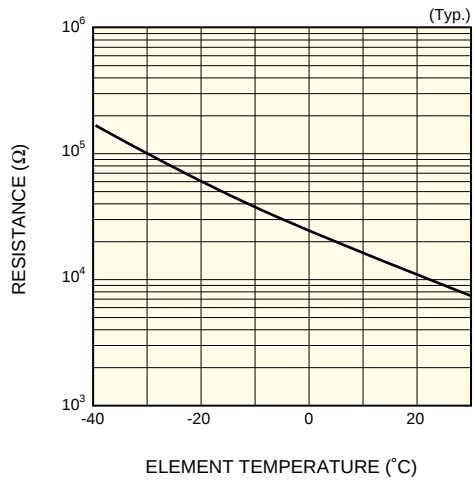
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Shunt resistance vs. element temperature



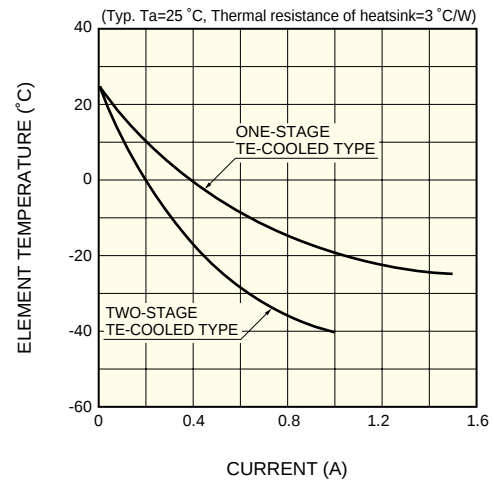
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■ Thermistor temperature characteristic



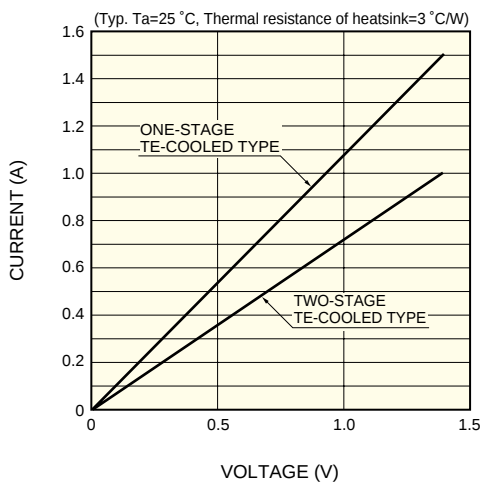
KIRDB0116EA

■ Cooling characteristics of TE-cooler



KIRDB0231EA

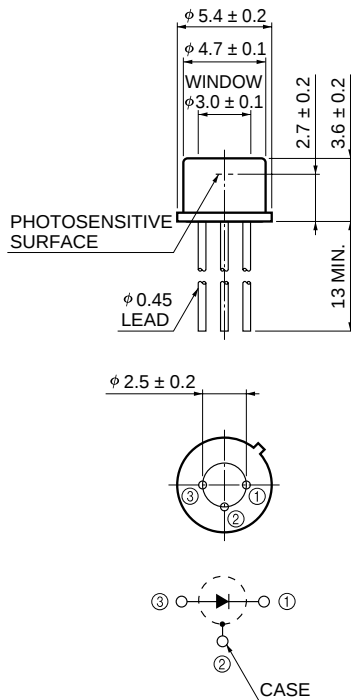
■ Current vs. voltage characteristics of TE-cooler



KIRDB0115EA

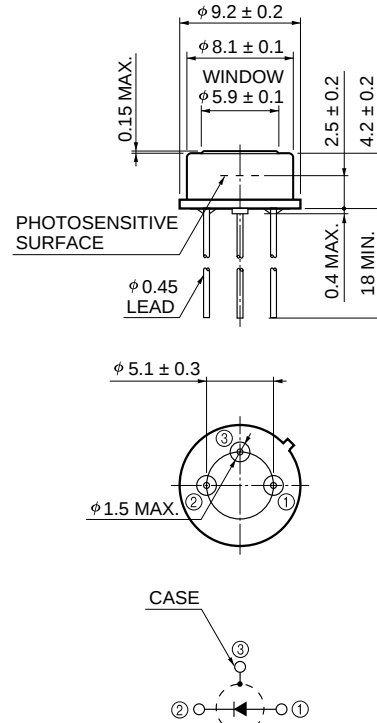
■ Dimensional outlines (unit: mm)

① G8421-03/-05, G8371-01



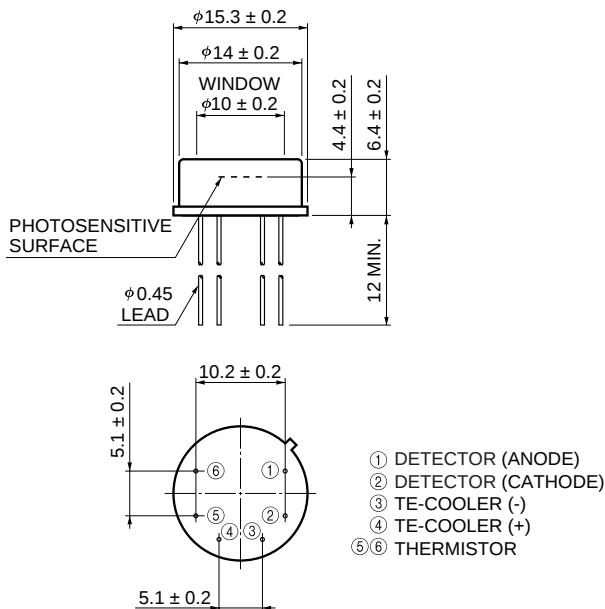
KIRDA0150EA

② G8371-03



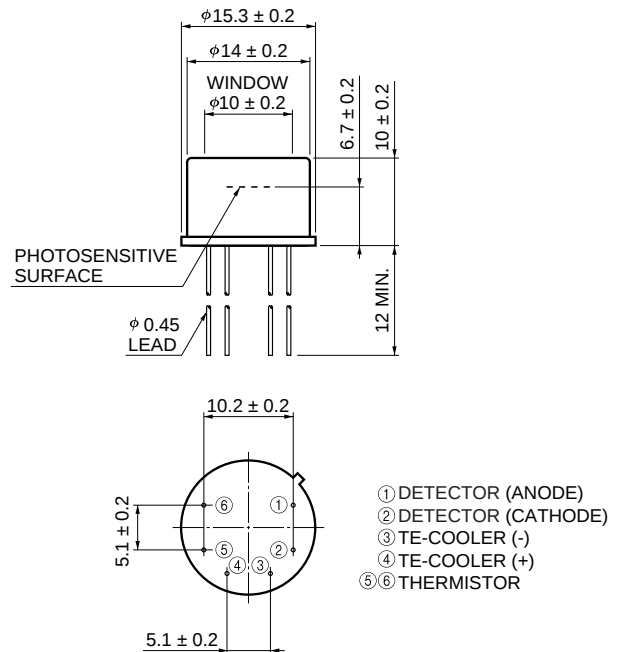
KIRDA0151EA

③ G5851-103/-11/-13



KIRDA0029EB

④ G5851-203/-21/-23



KIRDA0031EB

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