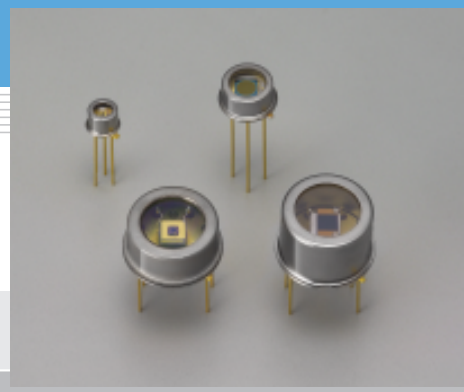


InGaAs PIN photodiode G8421/G8371/G5851 series

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

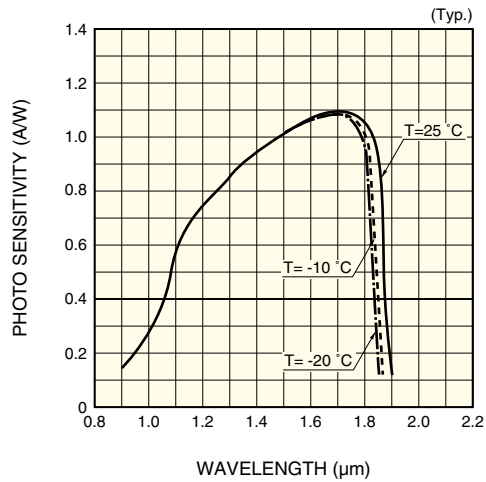
Specifications / Absolute maximum ratings

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 VR (V)	Operating temperature Topr (°C)	Storage temperature Tstg (°C)
G8421-03	①	TO-18	Non-cooled	φ0.3	-	-	2	-40 to +85	-55 to +125
G8421-05				φ0.5					
G8371-01				φ1					
G8371-03	②	TO-5		φ3					
G5851-103	③	TO-8	One-stage TE-cooled	φ0.3	0.2	1.5	2	-40 to +70	-55 to +85
G5851-11				φ1					
G5851-13				φ3					
G5851-203	④	TO-8	Two-stage TE-cooled	φ0.3		1.0			
G5851-21				φ1					
G5851-23				φ3					

Electrical and optical characteristics (Typ. unless otherwise noted)

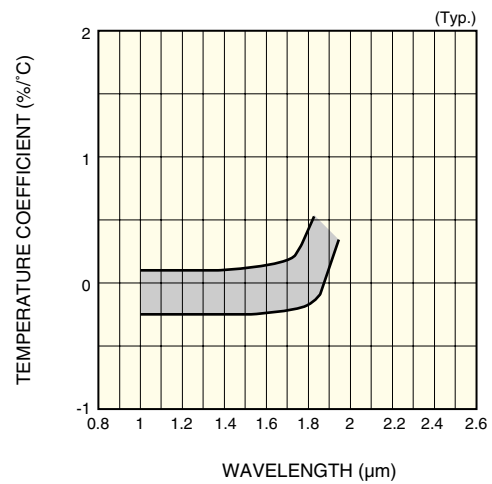
Type No.	Measurement Condition	Spectral response range λ	Peak sensitivity wavelength λ_p	Photo sensitivity $S_{\lambda=\lambda_p}$	Dark current I_D $V_R=1\text{ V}$		Cut-off frequency f_c $V_R=1\text{ V}$ $R_L=50\ \Omega$ -3 dB (MHz)	Terminal capacitance C_t $V_R=1\text{ V}$ $f=1\text{ MHz}$	Shunt resistance R_{sh} $V_R=10\text{ mV}$	D^* $\lambda=\lambda_p$	NEP $\lambda=\lambda_p$
	Element temperature (°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	1.75	1.1	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	1.75	1.1	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

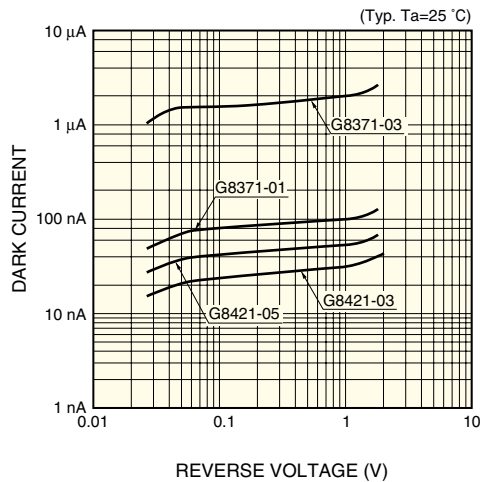
Photo sensitivity temperature characteristic



KIRDB0208EA

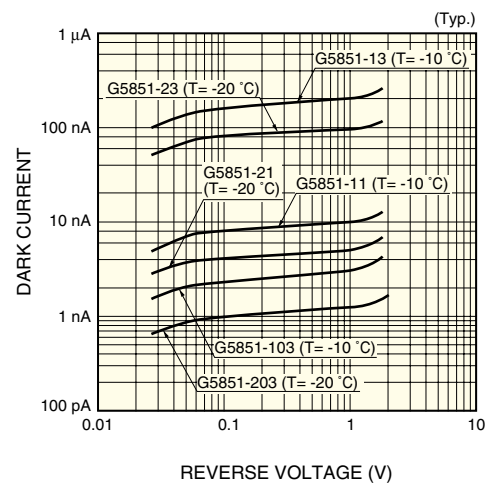
Dark current vs. reverse voltage

Non-cooled type



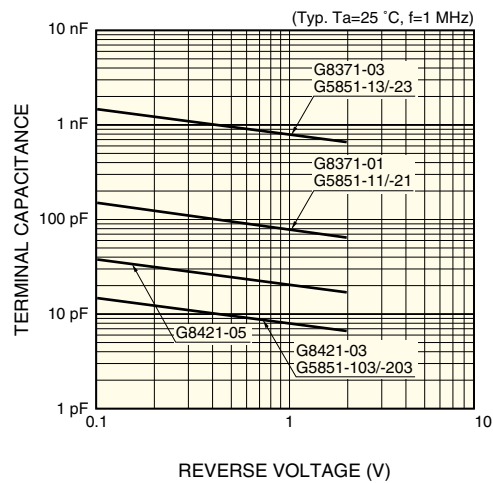
KIRDB0232EB

TE-cooled type



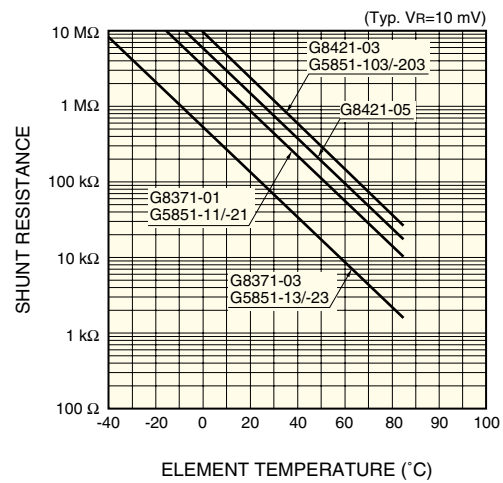
KIRDB0223EA

Terminal capacitance vs. reverse voltage



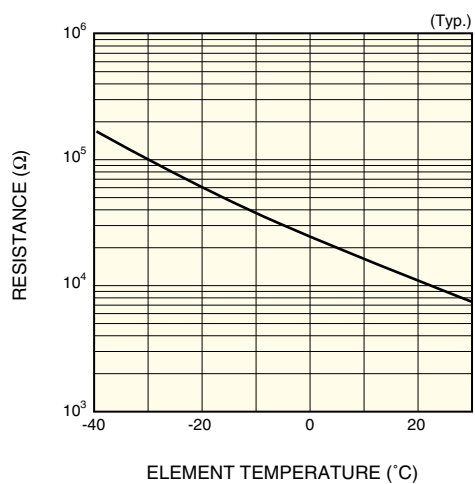
KIRDB0233EA

Shunt resistance vs. element temperature



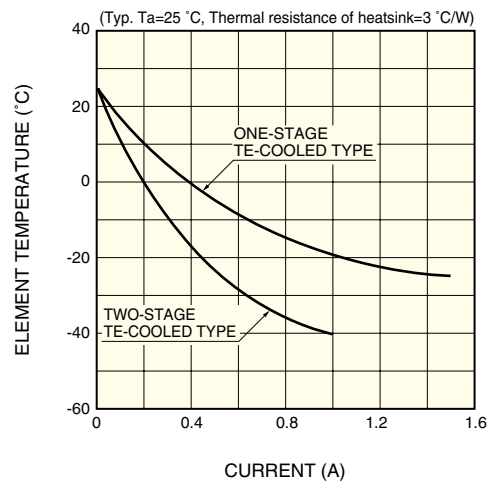
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■ Thermistor temperature characteristic



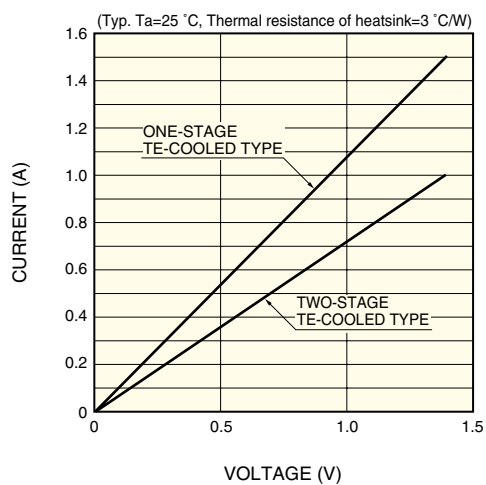
KIRDB0116EA

■ Cooling characteristics of TE-cooler



KIRDB0231EA

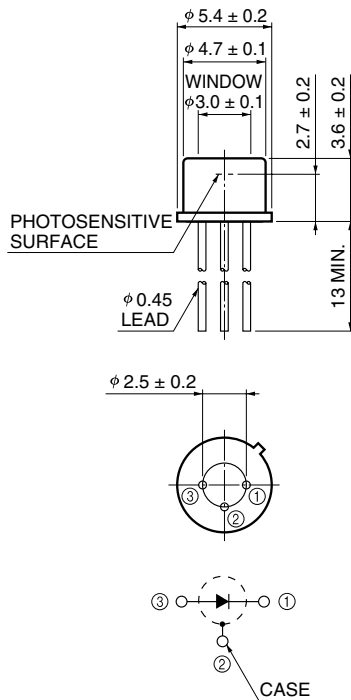
■ Current vs. voltage characteristics of TE-cooler



KIRDB0115EA

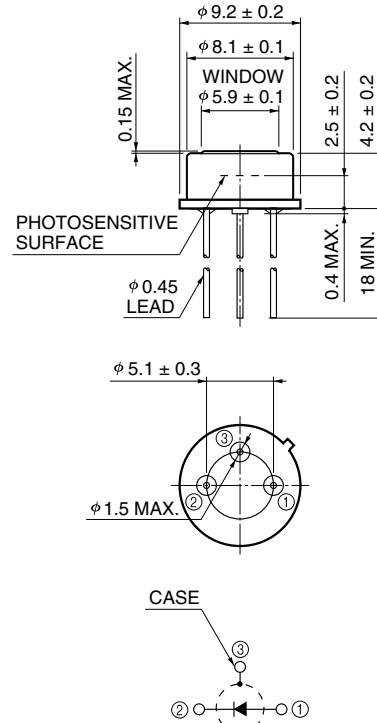
■ Dimensional outlines (unit: mm)

① G8421-03/-05, G8371-01



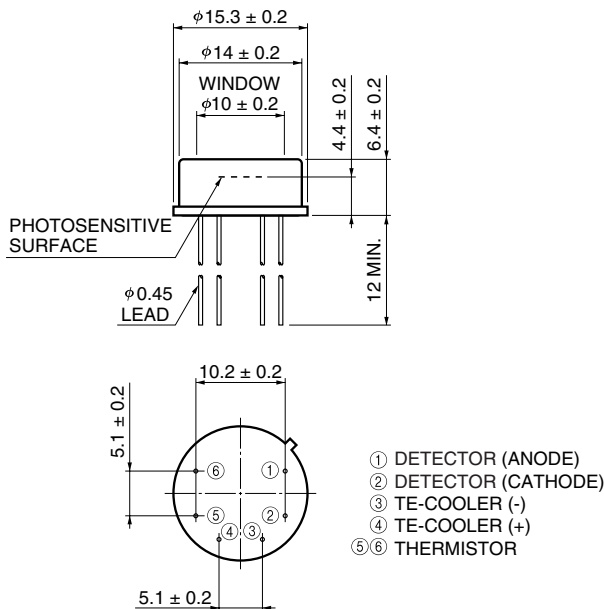
KIRDA0150EA

② G8371-03



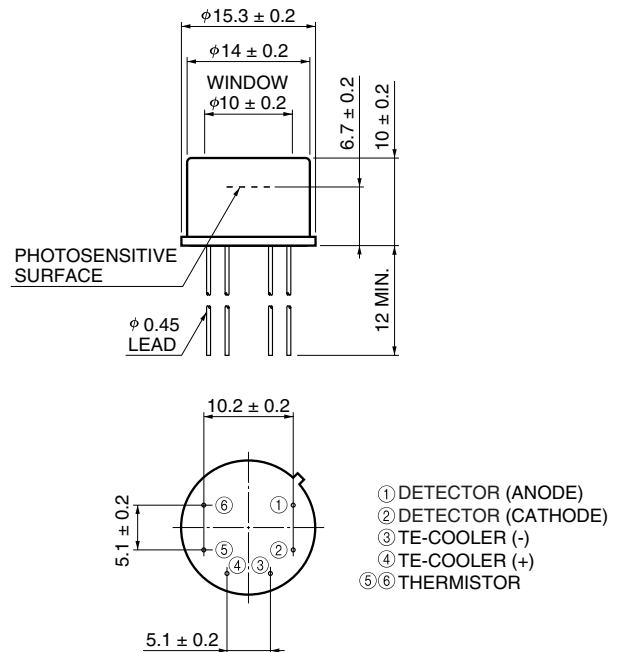
KIRDA0151EA

③ G5851-103/-11/-13



KIRDA0029EB

④ G5851-203/-21/-23



KIRDA0031EB

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