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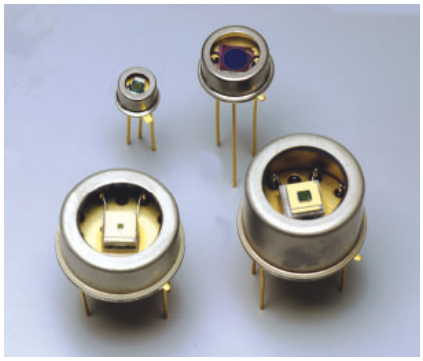
InGaAs PIN photodiodes



G8422/G8372/G5852 series

Long wavelength type (Cut-off wavelength: 2.05 to 2.1 µm)

Features

- **Cut-off wavelength: 2.05 to 2.1 µm**
- **3-pin TO-18 package: low price**
  TE-cooled type TO-8 package: low dark current
- **Active area: ϕ0.3 to ϕ3 mm**

Applications

- **Gas analyzer**
- **Water content analyzer**
- **NIR (near infrared) photometry**

Accessories (Optional)

- **Preamp for InGaAs PIN photodiode** **C4159-03**
- **Heatsink for one-stage TE-cooled type** **A3179**
- **Heatsink for two-stage TE-cooled type** **A3179-01**
- **Temperature controller for TE-cooled type** **C1103-04**

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 Topr (°C)	Storage temperature Tstg (°C)
G8422-03	①	TO-18	Non-cooled	ϕ0.3	-	-	2	-40 to +85	-55 to +125
G8422-05				ϕ0.5					
G8372-01				ϕ1					
G8372-03	②	TO-5		ϕ3					
G5852-103	③	TO-8	One-stage TE-cooled	ϕ0.3	0.2	1.5		-40 to +70	-55 to +85
G5852-11				ϕ1					
G5852-13				ϕ3					
G5852-203	④	TO-8	Two-stage TE-cooled	ϕ0.3		1.0			
G5852-21				ϕ1					
G5852-23				ϕ3					

Electrical and optical characteristics (Typ. unless otherwise noted)

Type No.	Measurement condition Element Temperature T (°C)	Spectral response range λ (µm)	Peak sensitivity wavelength λp (µm)	Photo sensitivity S λ=λp		Dark current I_D V_R=1 V		Cut-off frequency fc V_R=1 V R_L=50 Ω (MHz)	Terminal capacitance Ct V_R=1 V f=1 MHz (pF)	Shunt resistance Rsh V_R=10 mV (MΩ)	D* λ=λp (cm·Hz$^{1/2}$/W)	NEP λ=λp (W/Hz$^{1/2}$)
				Min. (A/W)	Typ. (A/W)	Typ. (nA)	Max. (nA)					
G8422-03	25	0.9 to 2.1	1.95	0.9	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 2.07				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 2.05				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}

The G8422/G8372/G5852 series may be damaged by electrostatic discharge, etc. Be carefull when using the G8422/G8372/G5852 series.

Spectral response

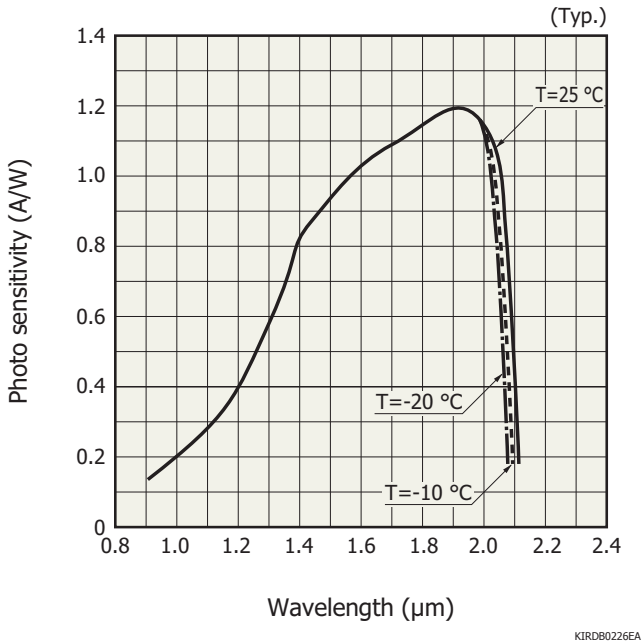
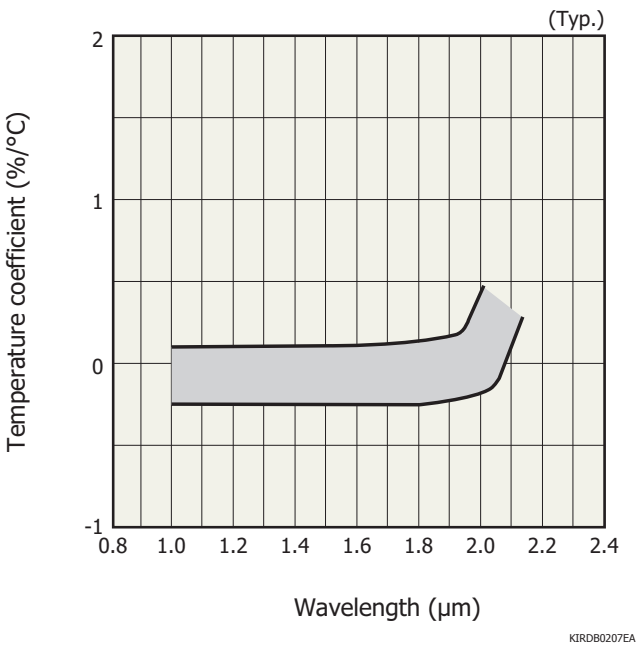
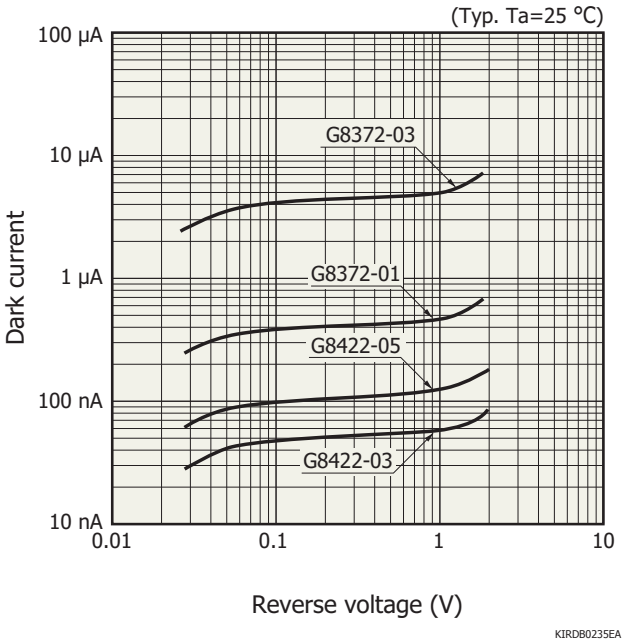


Photo sensitivity temperature characteristic

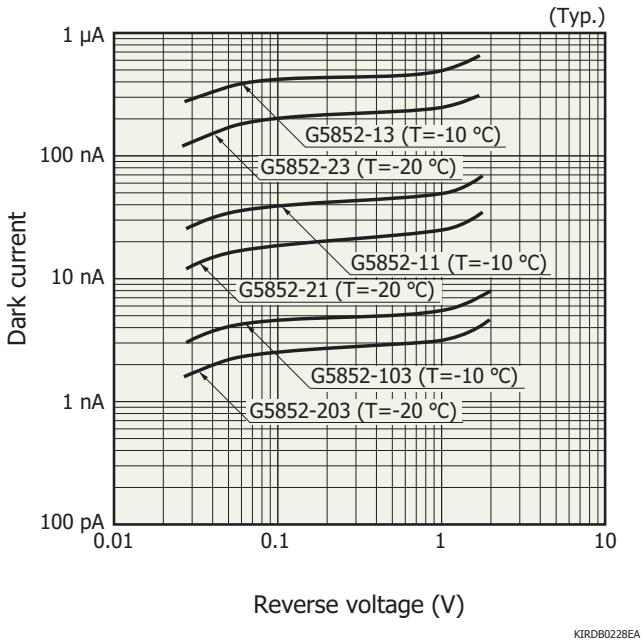


Dark current vs. reverse voltage

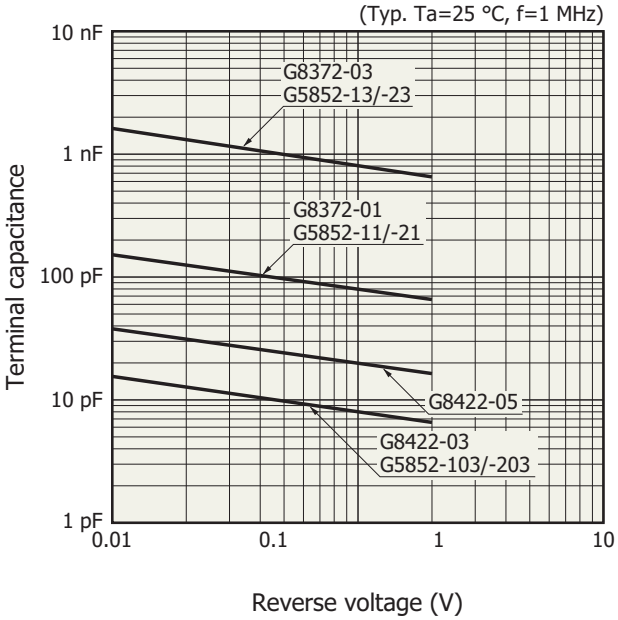
Non-cooled type



TE-cooled type



Terminal capacitance vs. reverse voltage



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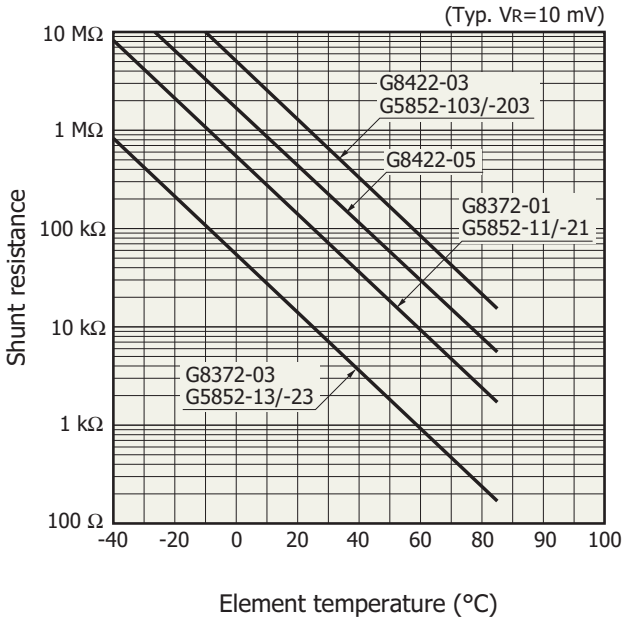
Shunt resistance vs. element temperature



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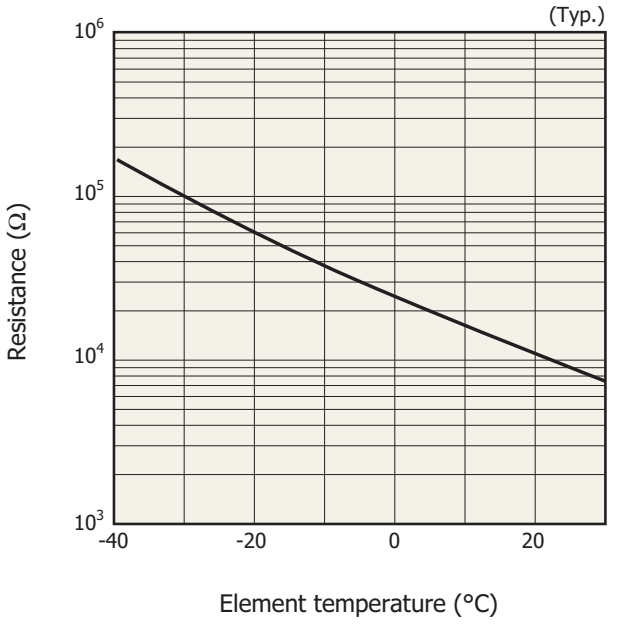
Thermistor temperature characteristic



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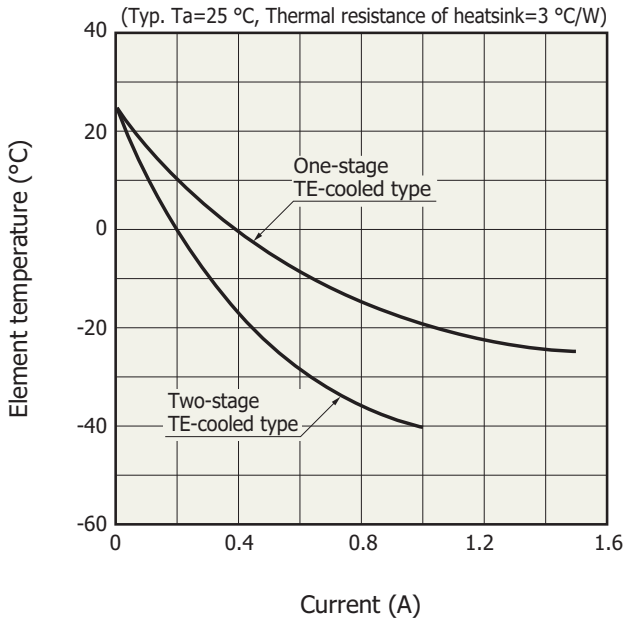
Cooling characteristics of TE-cooler



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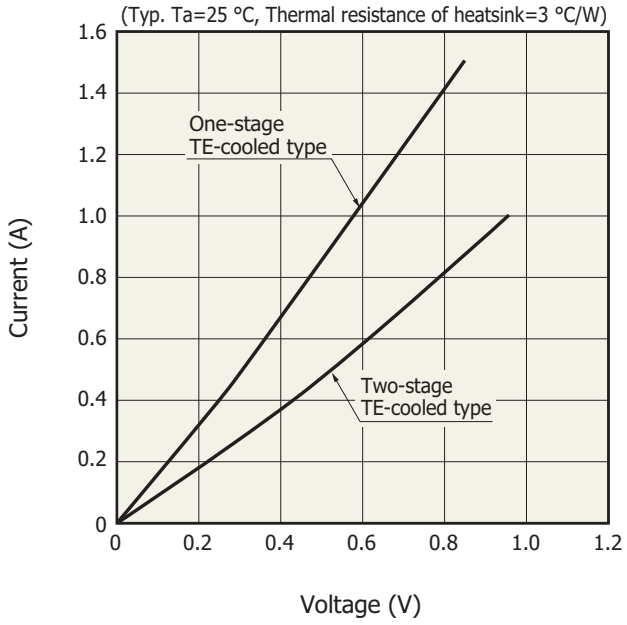
Current vs. voltage (TE-cooler)



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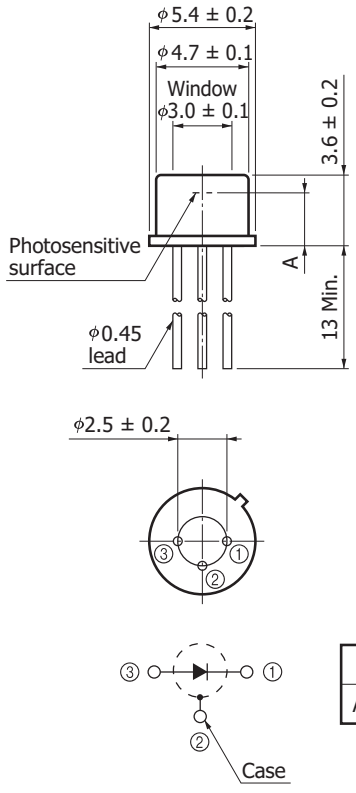
Dimensional outlines (unit: mm)

① G8422-03/-05, G8372-01



	G8422-03/-05	G8372-01
A	2.6 ± 0.2	2.7 ± 0.2

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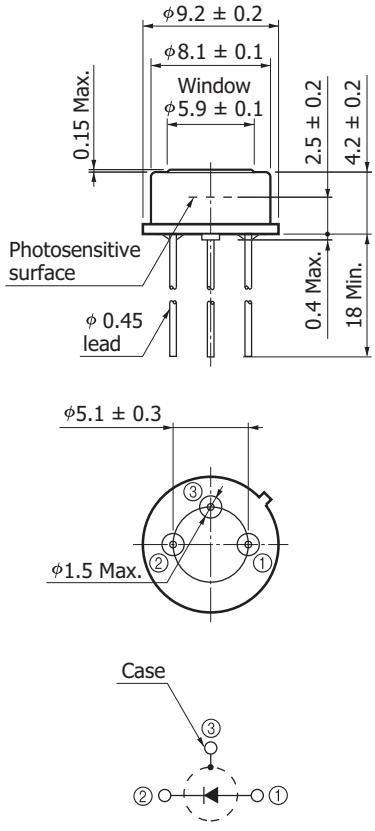
② G8372-03



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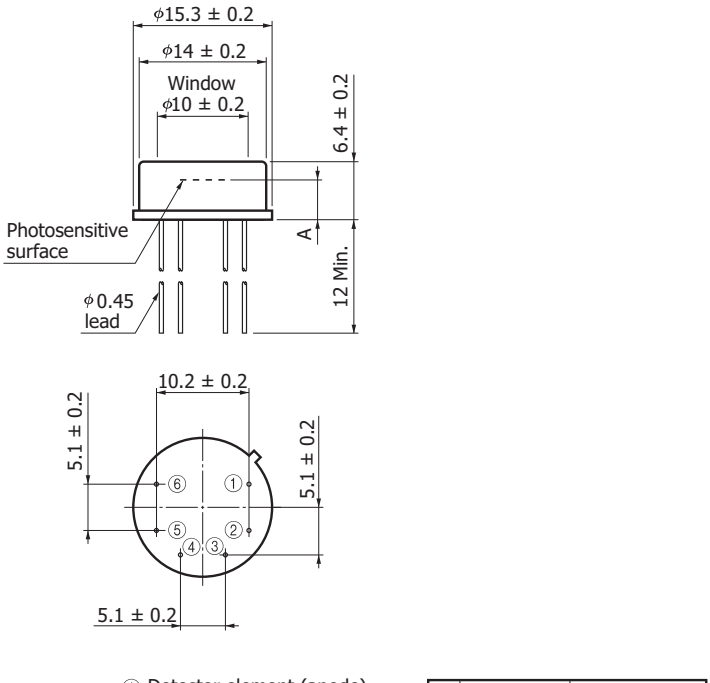
③ G5852-103/-11/-13



	G5852-103	G5852-11/-13
A	4.3 ± 0.2	4.4 ± 0.2

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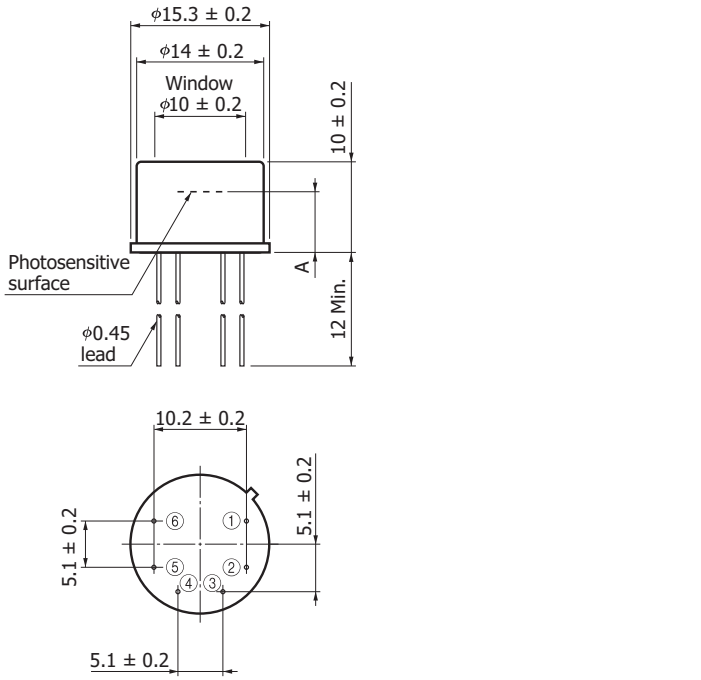
④ G5852-203/-21/-23



	G5852-203	G5852-21/-23
A	6.6 ± 0.2	6.7 ± 0.2

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