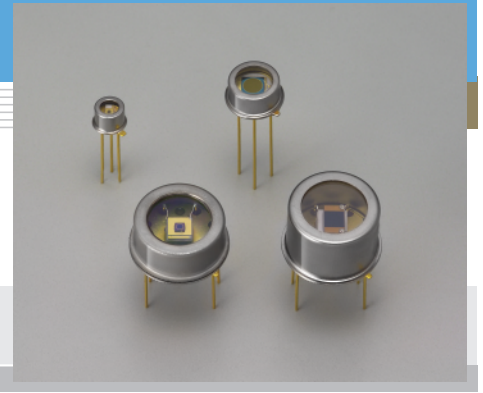


# InGaAs PIN photodiode G8423/G8373/G5853 series

Long wavelength type (up to 2.6  $\mu\text{m}$ )



## Features

- Long cut-off wavelength: 2.6  $\mu\text{m}$
- 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

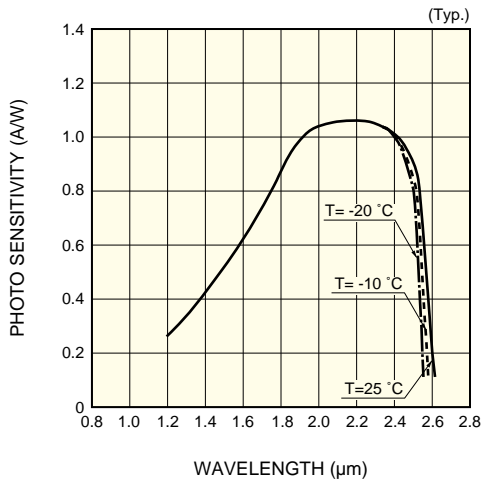
## Specifications / Absolute maximum ratings

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)

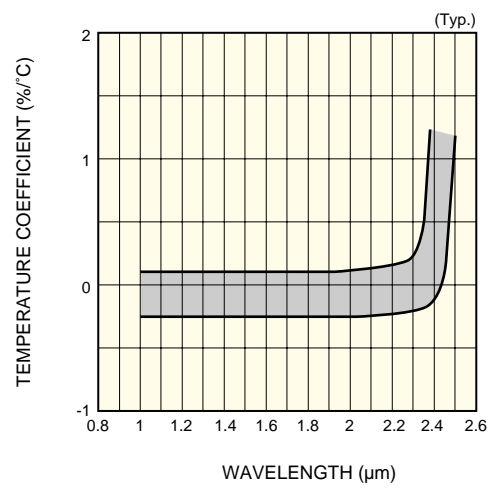
Type No.	Measurement condition	Spectral response range $\lambda$ ( $\mu\text{m}$ )	Peak sensitivity wavelength $\lambda_p$ ( $\mu\text{m}$ )	Photo sensitivity $S$ $\lambda = \lambda_p$ (A/W)	Dark current $I_D$ $V_R = 1$ V		Cut-off frequency $f_c$ $V_R = 1$ V $R_L = 50$ $\Omega$ -3 dB (MHz)	Terminal capacitance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

■ Spectral response



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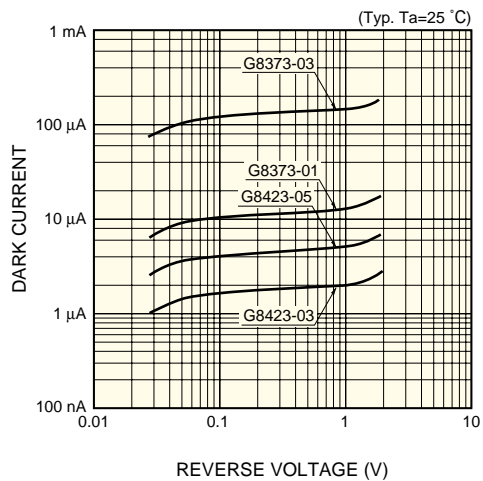
■ Photo sensitivity temperature characteristic



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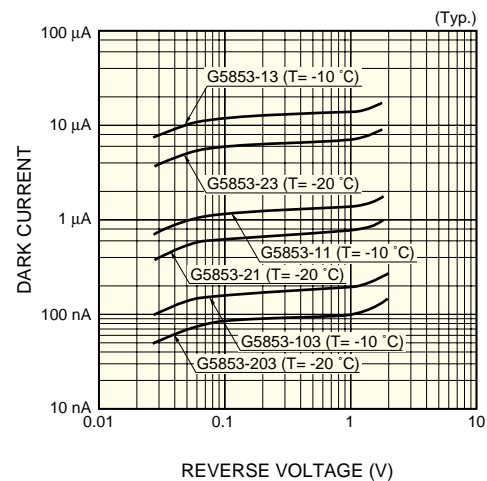
■ Dark current vs. reverse voltage

Non-cooled type



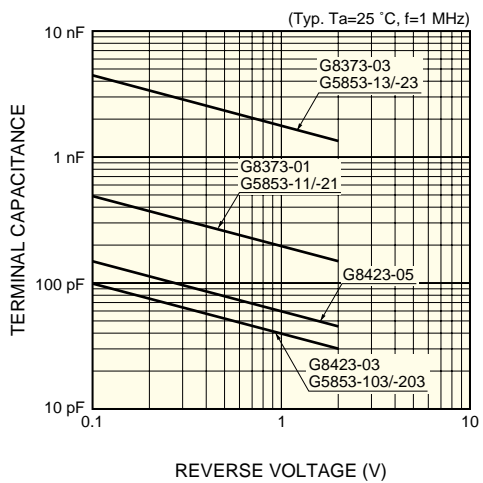
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TE-cooled type



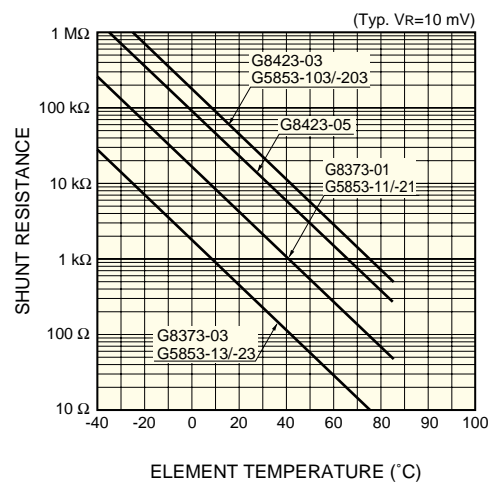
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■ Terminal capacitance vs. reverse voltage



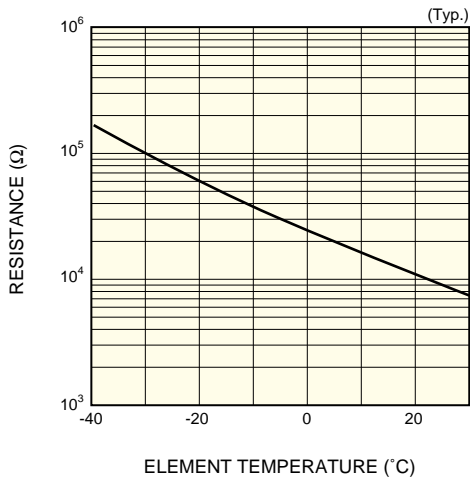
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■ Shunt resistance vs. element temperature



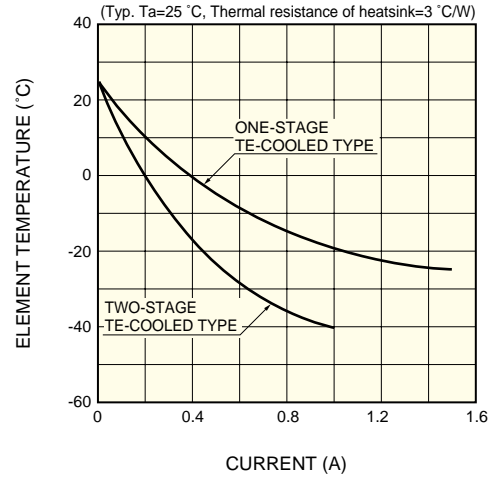
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■ Thermistor temperature characteristic



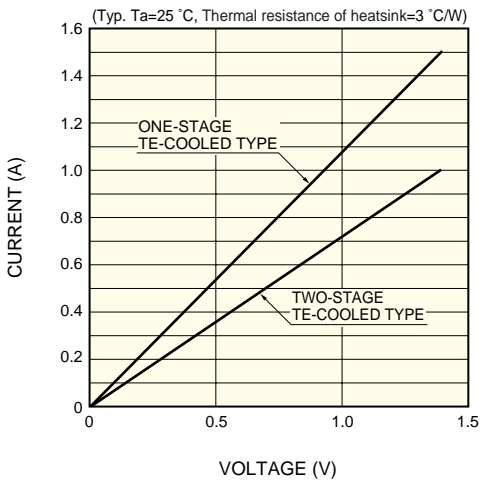
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■ Cooling characteristics of TE-cooler



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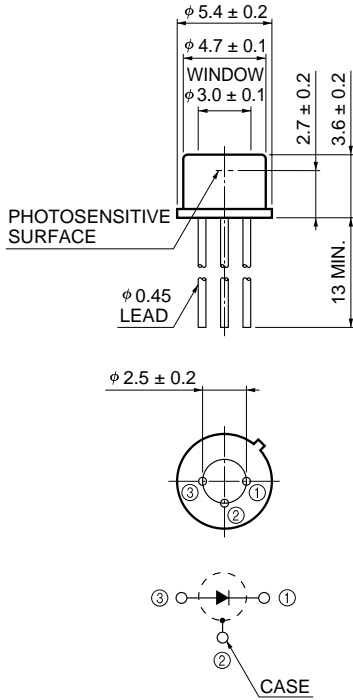
■ Current vs. voltage characteristics of TE-cooler



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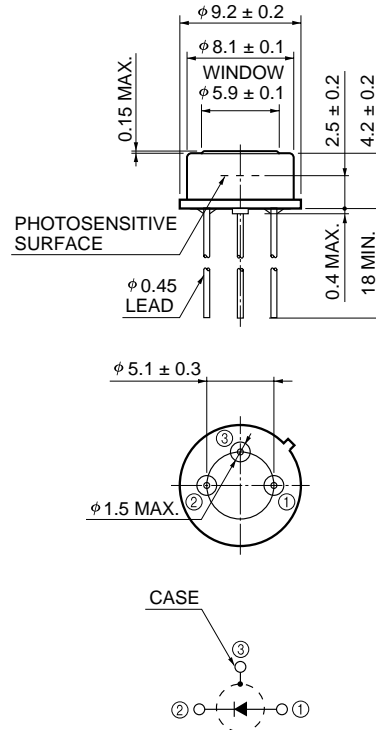
■ Dimensional outlines (unit: mm)

① G8423-03/-05, G8373-01



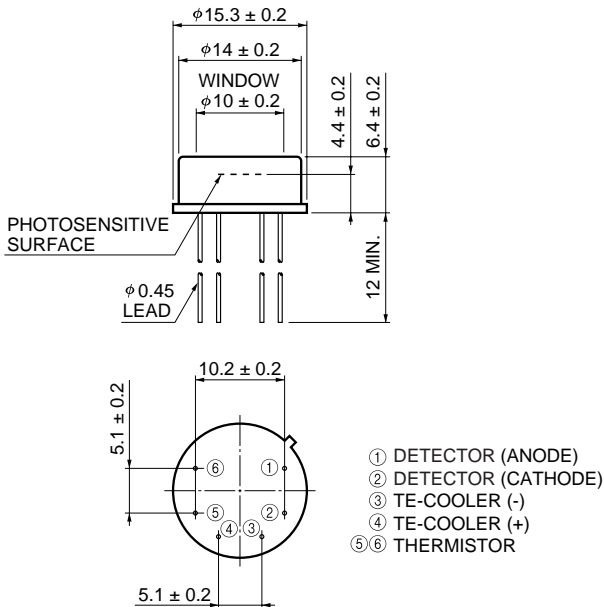
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② G8373-03



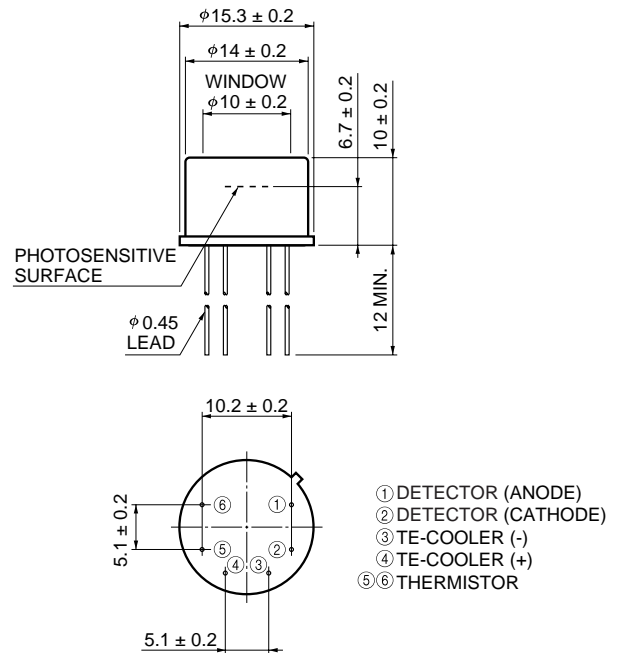
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③ G5853-103/-11/-13



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④ G5853-203/-21/-23



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