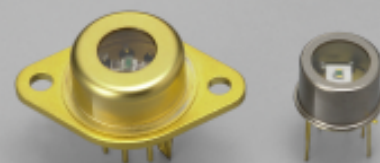


InSb photoconductive detector P6606 series

Thermoelectrically cooled detectors capable of long-term measurements



Features

- Thermoelectric cooling ensures high speed and high sensitivity up to 6.5 μm .
- Photoconductive element that changes electrical resistance by input of IR radiation
- Easy-to-use detector/preamp modules are also available.

Applications

- Environment measurements (gas analysis, etc.)
- Radiation thermometers (5 μm band)
- FTIR
- IR laser detection

Accessories (optional)

- Heatsink for one/two-stage TE-cooled type A3179-01
- Heatsink for three-stage TE-cooled type A3179-04
- Temperature controller C1103-05 (-75 to -25 $^{\circ}\text{C}$)
C1103-07 (-30 to +20 $^{\circ}\text{C}$)
- Preamp C5185
- Infrared detector module with preamp P4631-03 (P6606-310)

Specifications / Absolute maximum ratings

Type No.	Dimensional outline/ Window material *1	Package	Cooling	Active area (mm)	Absolute maximum ratings				
					Thermistor power dissipation (mW)	TE-cooler power dissipation (A)	Allowable current (mA)	Operating temperature Topr ($^{\circ}\text{C}$)	Storage temperature Tstg ($^{\circ}\text{C}$)
P6606-110	①/S	TO-8	One-stage TE-cooled	1 × 1	0.2	1.5	40	-40 to +60	-55 to +60
P6606-210			Two-stage TE-cooled			1.0			
P6606-305	②/S	TO-3	Three-stage TE-cooled	0.5 × 0.5		1.0	20		
P6606-310				1 × 1			40		
P6606-320				2 × 2			60		

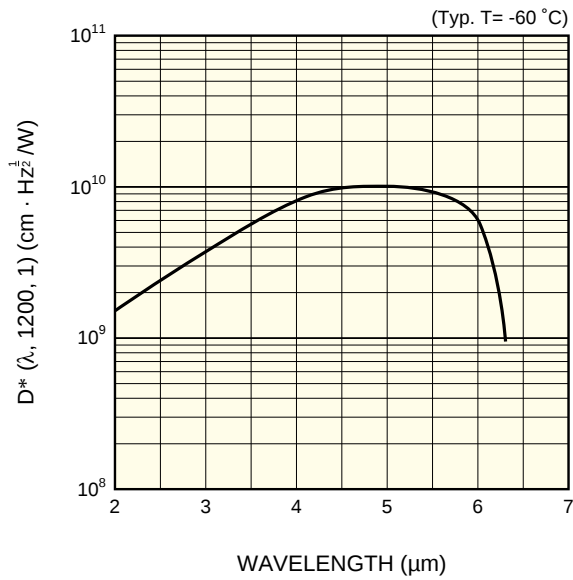
*1: Window material S: Sapphire glass

Electrical and optical characteristics (Typ. unless otherwise noted)

Type No.	Measurement condition	Peak sensitivity wavelength λ_p	Cut-off wavelength λ_c	Photo *2 sensitivity S $\lambda=\lambda_p$	D* (500, 1200, 1)		D* (λ_p , 1200, 1) (cm·Hz ^{1/2} /W)	Rise time tr 0 to 63 % (μs)	Dark resistance Rd (Ω)
	Element temperature T								
	(°C)	(μm)	(μm)	(V/W)	Min. (cm·Hz ^{1/2} /W)	Typ. (cm·Hz ^{1/2} /W)			
P6606-110	-10	4.5	6.7	10	7 × 10 ⁷	2 × 10 ⁸	1 × 10 ⁹	0.4	20
P6606-210	-30		6.5	50	1.5 × 10 ⁸	5 × 10 ⁸	2.5 × 10 ⁹		25
P6606-305	-60		6.3	2500	1 × 10 ⁹	2 × 10 ⁹	1 × 10 ¹⁰		150
P6606-310				650	1 × 10 ⁹	2 × 10 ⁹	1 × 10 ¹⁰		80
P6606-320				150	5 × 10 ⁸	1 × 10 ⁹	5 × 10 ⁹		80

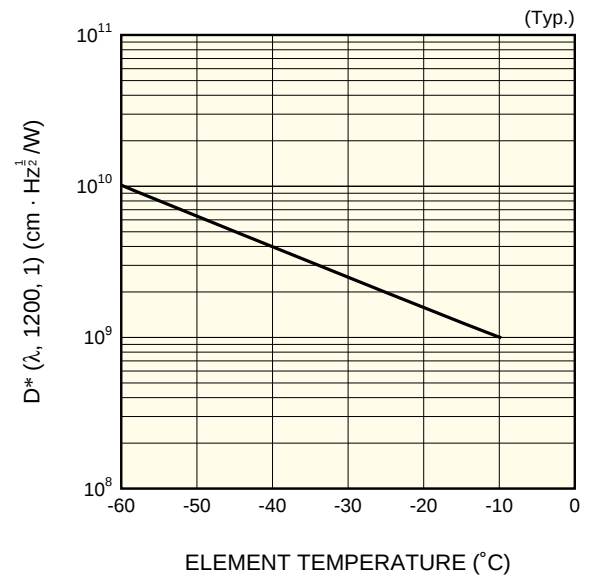
*2: Photo sensitivity changes with the bias current. The values in the above table are measured with the optimum bias current.

■ Spectral response



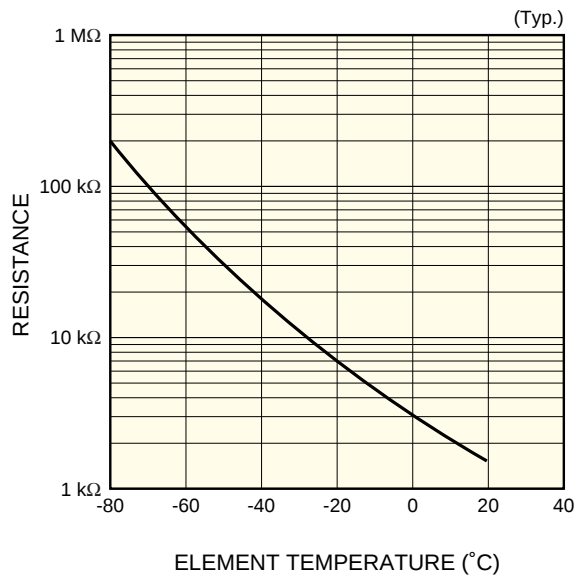
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■ D^* vs. element temperature



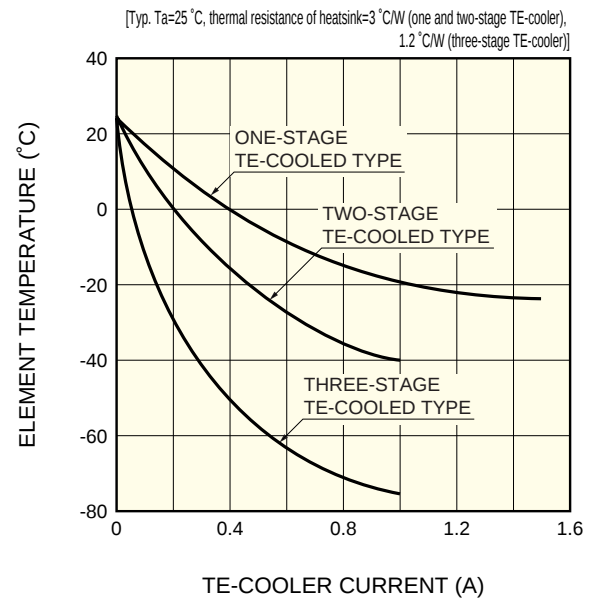
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■ Thermistor temperature characteristic



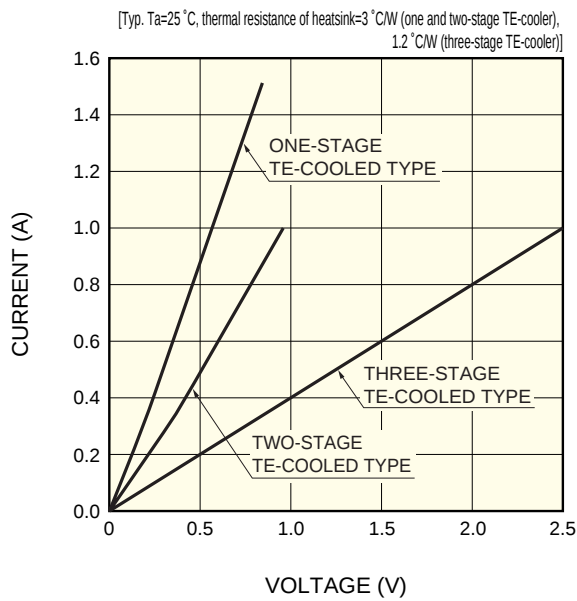
KIRDB0168EA

■ Cooling characteristics of TE-cooler



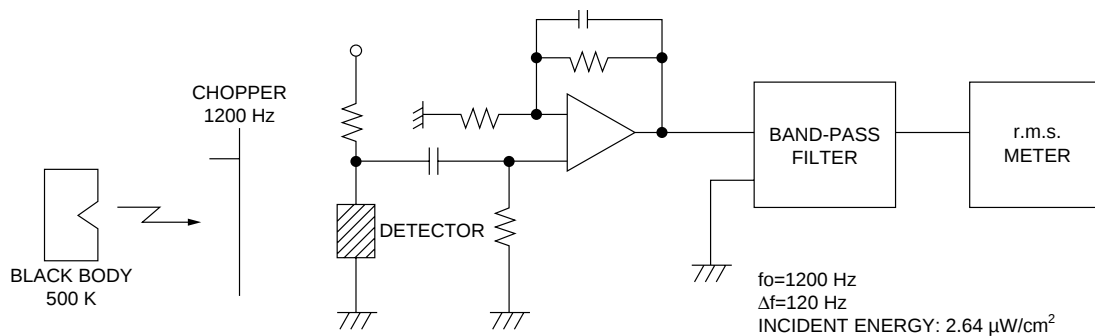
KIRDB0177EA

■ Current vs. voltage of TE-cooler



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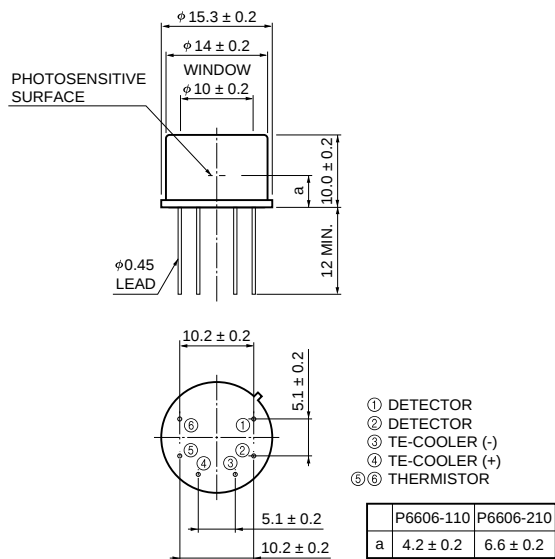
■ Measurement circuit



KIRDC0005EA

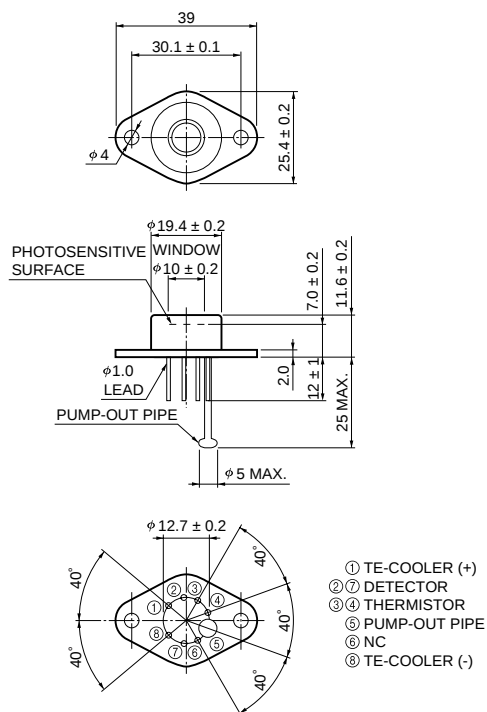
■ Dimensional outlines (unit: mm)

① P6606-110/-210



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② P6606-305/-310/-320



KIRDA0127EB

Information described in this material is current as of January, 2011. Product specifications are subject to change without prior notice due to improvements or other reasons. Before assembly into final products, please contact us for the delivery specification sheet to check the latest information.

Type numbers of products listed in the delivery specification sheets or supplied as samples may have a suffix "(X)" which means preliminary specifications or a suffix "(Z)" which means developmental specifications.

The product warranty is valid for one year after delivery and is limited to product repair or replacement for defects discovered and reported to us within that one year period. However, even if within the warranty period we accept absolutely no liability for any loss caused by natural disasters or improper product use.

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