

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-stage TE-cooled type A3179
- Heatsink for two-stage TE-cooled type A3179-01
- Heatsink for three-stage TE-cooled type A3179-04
- Temperature controller C1103-05 (-75 to -25 °C)
C1103-07 (-30 to +20 °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 (°C)	Storage temperature Tstg (°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	-40 to +60	-55 to +60	
P6606-310				1 × 1		40			
P6606-320				2 × 2		60			

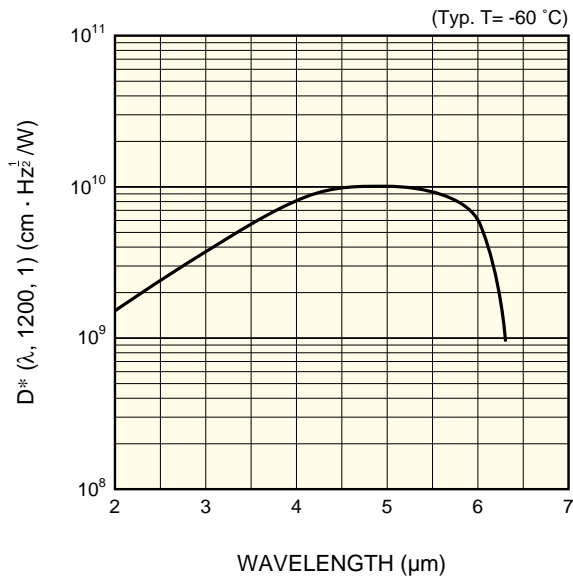
*1: Window material S: Sapphire glass

Electrical and optical characteristics (Typ. unless otherwise noted)

Type No.	Measurement condition Element temperature T (°C)	Peak sensitivity wavelength λ_p (μm)	Cut-off wavelength λ_c (μm)	Photo *2 sensitivity S $\lambda = \lambda_p$ (V/W)	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)
					Min. (cm·Hz ^{1/2} /W)	Typ. (cm·Hz ^{1/2} /W)			
	P6606-110	-10	5.5	6.7	10	7×10^7	2×10^8	1×10^9	0.4
P6606-210	-30	6.5		50	1.5×10^8	5×10^8	2.5×10^9	25	
P6606-305	-60	2500		1×10^9	2×10^9	1×10^{10}	150		
P6606-310		6.3		650	1×10^9	2×10^9	1×10^{10}	80	
P6606-320		150		5×10^8	1×10^9	5×10^9	80		

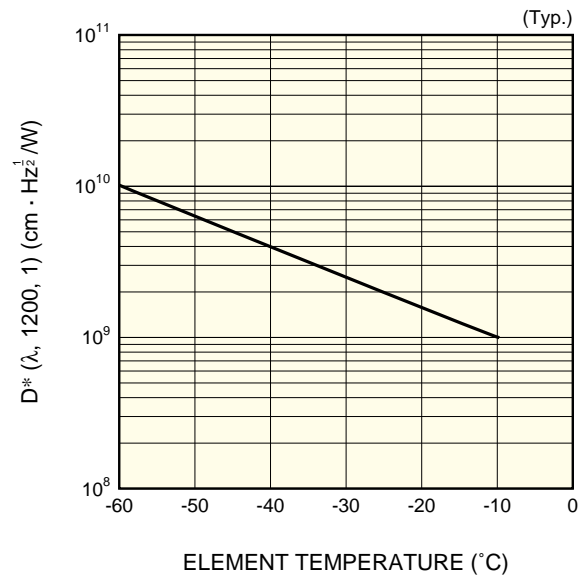
*2: Photo sensitivity changes with the bias current. The values in the above table are measured with the optimum bias current.

■ Spectral response



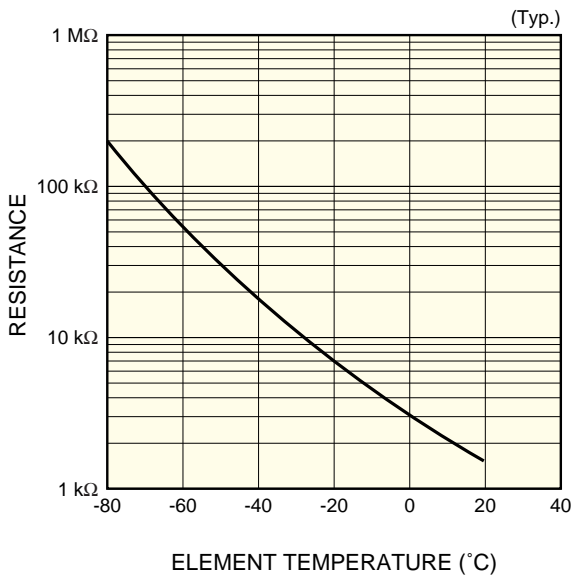
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■ D^* vs. element temperature



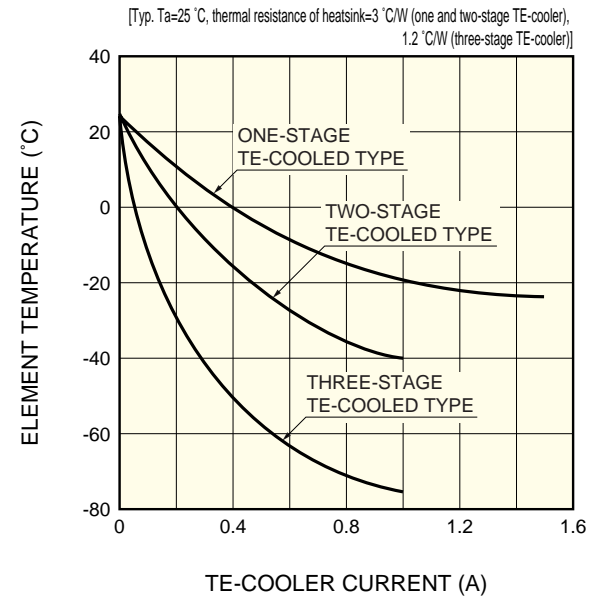
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■ Thermistor temperature characteristic



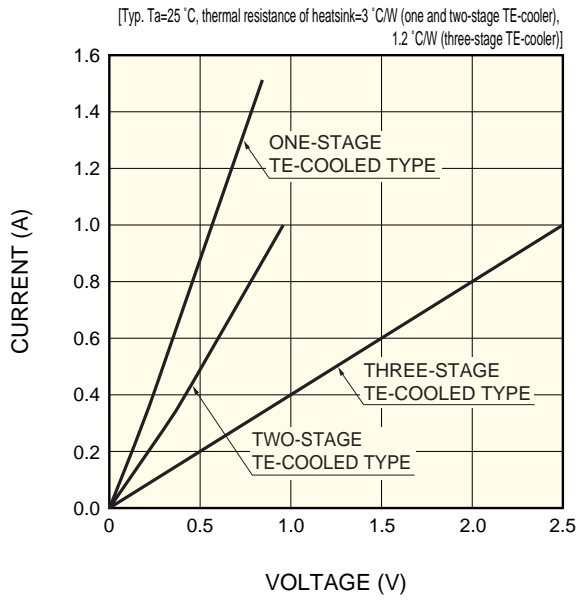
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■ Cooling characteristics of TE-cooler



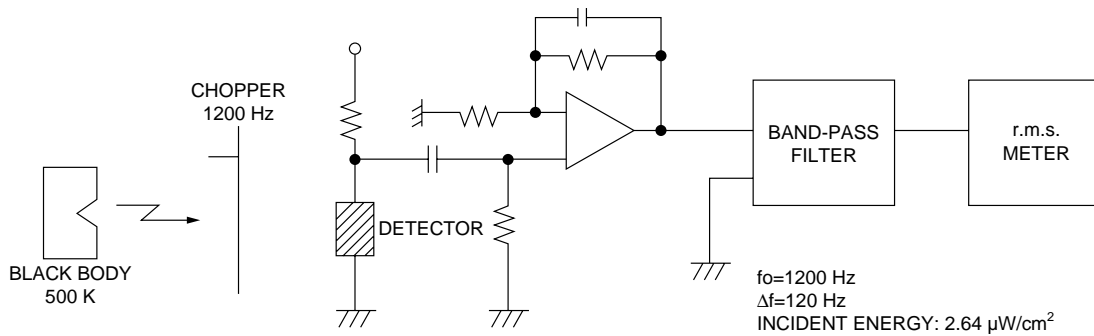
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■ Current vs. voltage of TE-cooler



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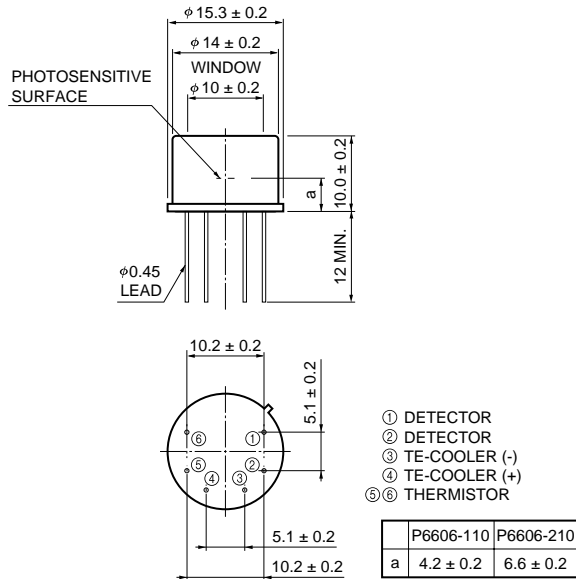
■ Measurement circuit



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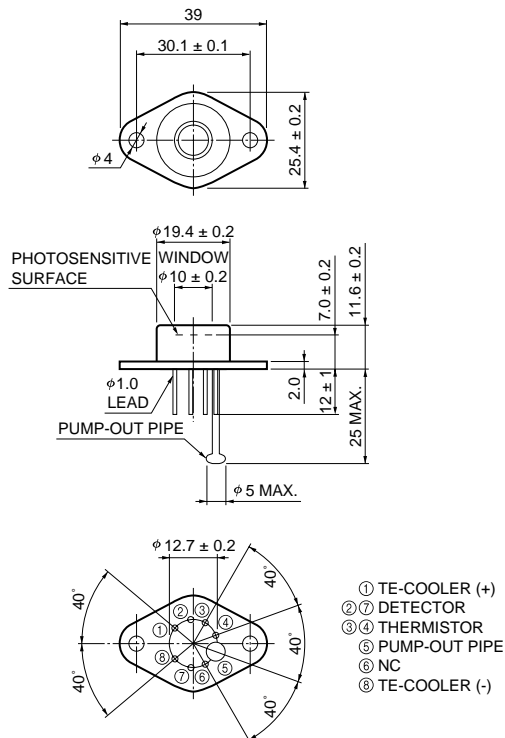
Dimensional outlines (unit: mm)

① P6606-110/-210



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② P6606-305/-310/-320



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