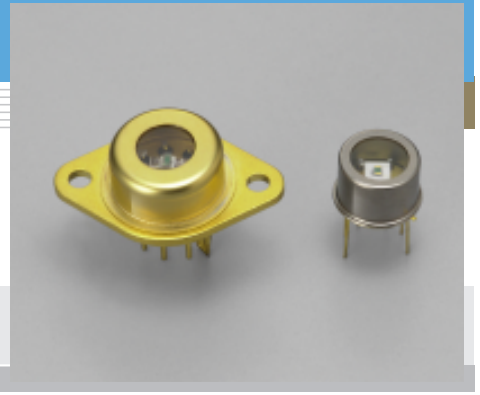


# InSb photoconductive detector P6606 series

Thermoelectrically cooled detectors capable of long-term measurements



### Features

- Thermoelectric cooling ensures high speed and high sensitivity up to 6.5  $\mu\text{m}$ .
- 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  $\mu\text{m}$  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      C4631-03 (P6606-310)

### Specifications / Absolute maximum ratings

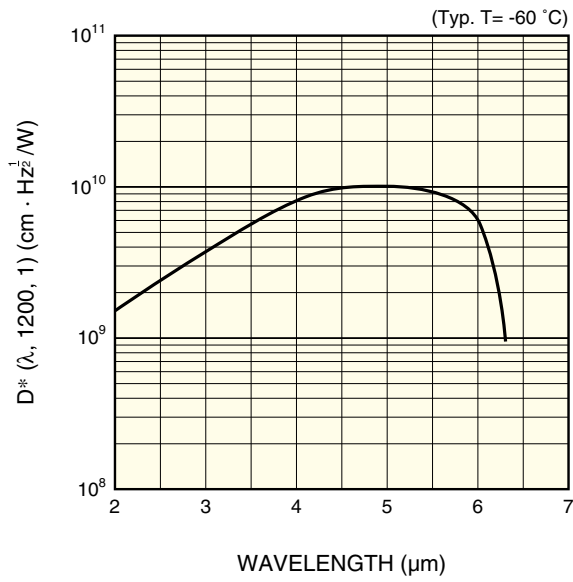
Type No.	Dimensional outline/ Window material *1	Package	Cooling	Active area (mm)	Absolute maximum ratings				
					Thermistor power dissipation (mW)	TE-cooler power dissipation (A)	Allowable current (mA)	Operating temperature Topr (°C)	Storage temperature Tstg (°C)
P6606-110	①/S	TO-8	One-stage TE-cooled	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	0.2	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)

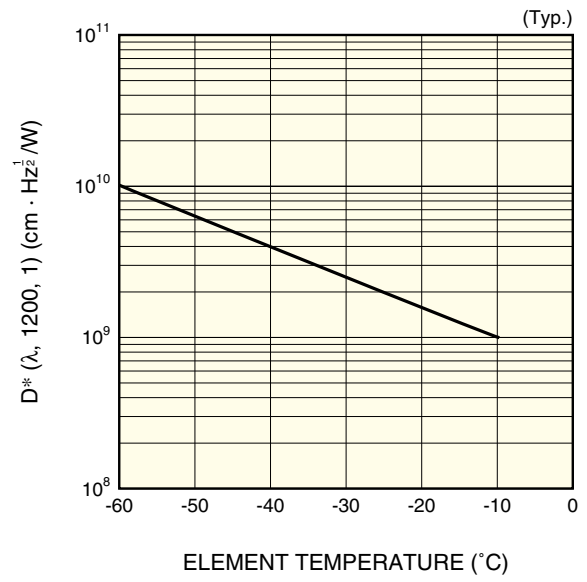
Type No.	Measurement condition Element temperature T (°C)	Peak sensitivity wavelength $\lambda_p$ ( $\mu\text{m}$ )	Cut-off wavelength $\lambda_c$ ( $\mu\text{m}$ )	Photo sensitivity S $\lambda = \lambda_p$ Vs=15 V (V/W)	D* (500, 1200, 1)		D* ( $\lambda_p$ , 1200, 1) ( $\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$ )	Rise time tr 0 to 63 % ( $\mu\text{s}$ )	Dark resistance Rd ( $\Omega$ )	
					Min. ( $\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$ )	Typ. ( $\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$ )				
	P6606-110	-10	5.5	6.7	10	$7 \times 10^7$	$2 \times 10^8$	$1 \times 10^9$	0.4	20
P6606-210	-30	6.5		50	$1.5 \times 10^8$	$5 \times 10^8$	$2.5 \times 10^9$	25		
P6606-305	-60	2500		$1 \times 10^9$	$2 \times 10^9$	$1 \times 10^{10}$	150			
P6606-310		6.3		650	$1 \times 10^9$	$2 \times 10^9$		$1 \times 10^{10}$		80
P6606-320		150		$5 \times 10^8$	$1 \times 10^9$	$5 \times 10^9$		80		

■ Spectral response



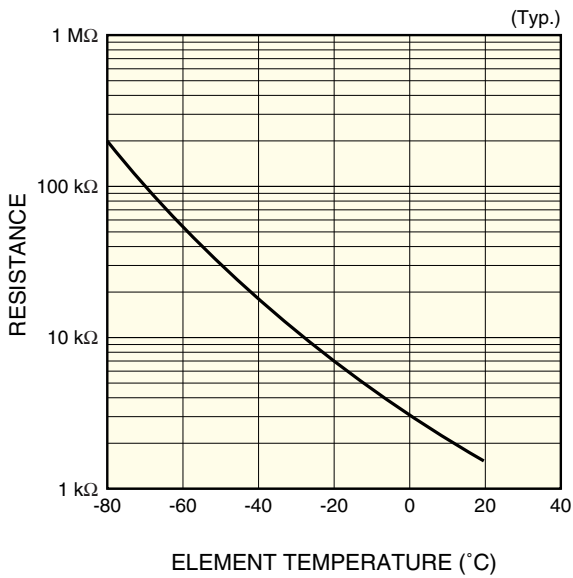
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■  $D^*$  vs. element temperature



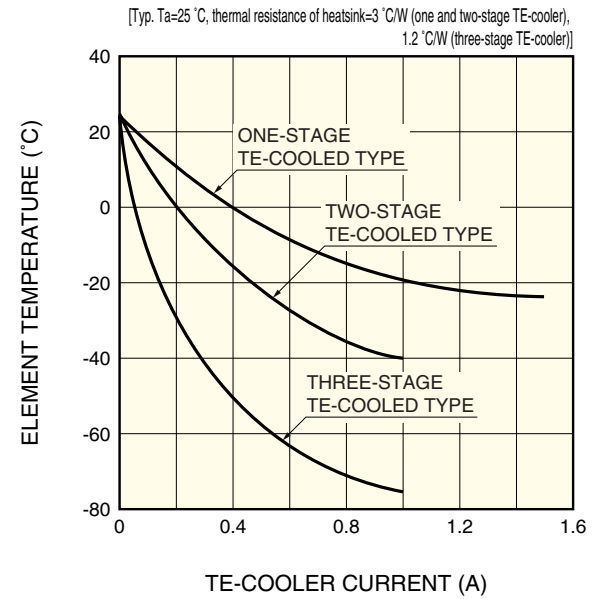
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■ Thermistor temperature characteristic



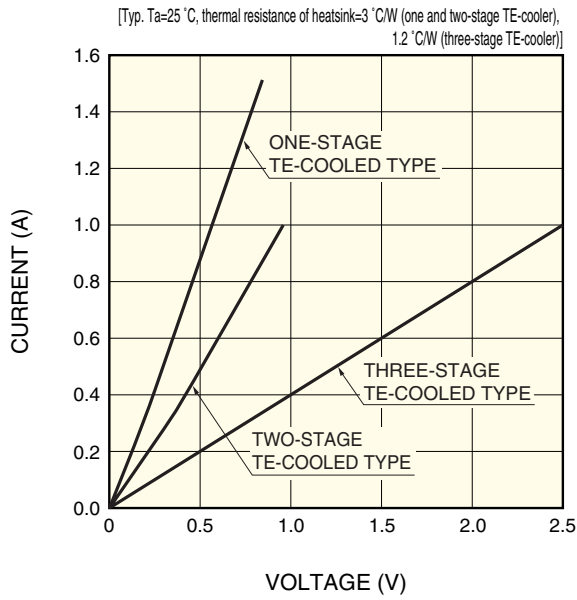
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■ Cooling characteristics of TE-cooler



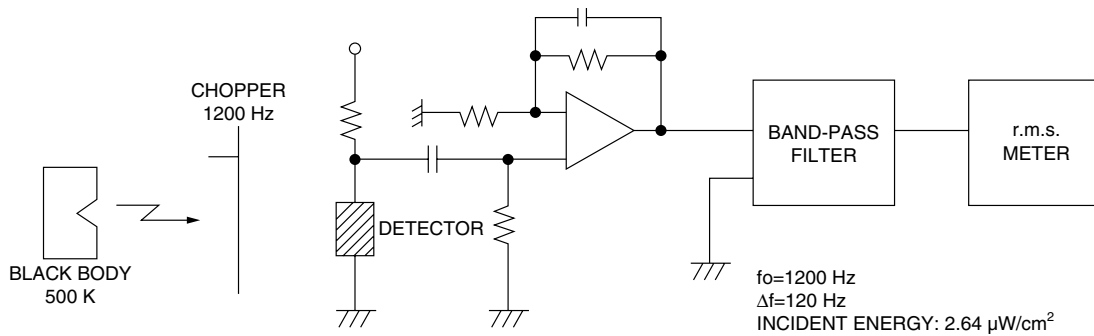
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■ Current vs. voltage characteristics of TE-cooler



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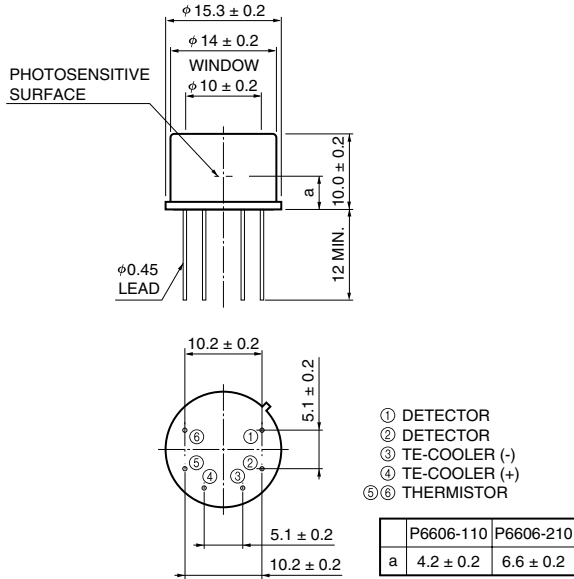
■ Measurement circuit



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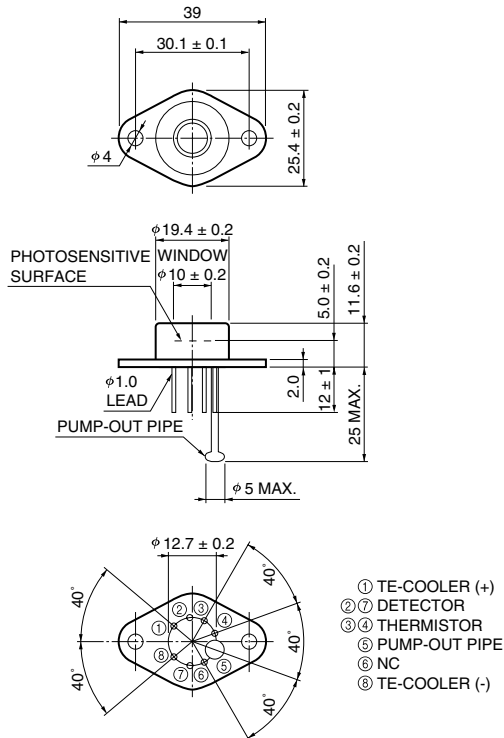
## Dimensional outlines (unit: mm)

### ① P6606-110/-210



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### ② P6606-305/-310/-320



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