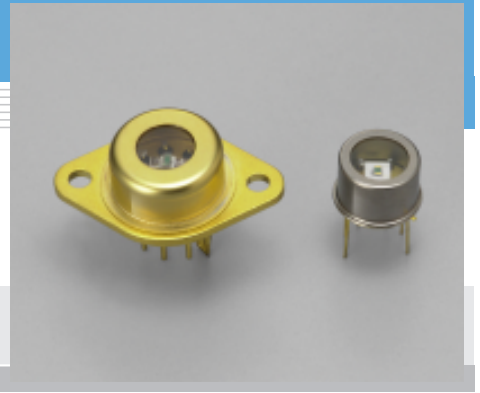


# InSb photoconductive detector P6606 series

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     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			

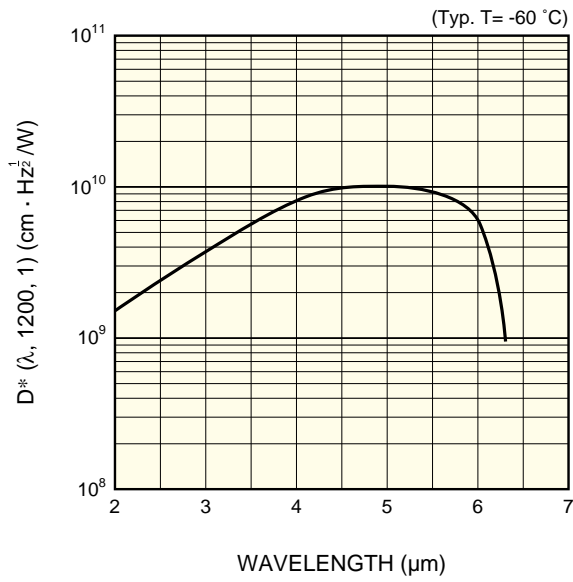
\*1: Window material S: Sapphire glass

### Electrical and optical characteristics (Typ. unless otherwise noted)

Type No.	Measurement condition	Peak sensitivity wavelength $\lambda_p$ ( $\mu\text{m}$ )	Cut-off wavelength $\lambda_c$ ( $\mu\text{m}$ )	Photo *2 sensitivity S $\lambda = \lambda_p$ (V/W)	D* (500, 1200, 1)		D* ( $\lambda_p$ , 1200, 1) (cm·Hz <sup>1/2</sup> /W)	Rise time tr 0 to 63 % ( $\mu\text{s}$ )	Dark resistance Rd ( $\Omega$ )
	Element temperature T (°C)				Min. (cm·Hz <sup>1/2</sup> /W)	Typ. (cm·Hz <sup>1/2</sup> /W)			
	P6606-110	-10	5.5	6.7	10	$7 \times 10^7$	$2 \times 10^8$	$1 \times 10^9$	0.4
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		

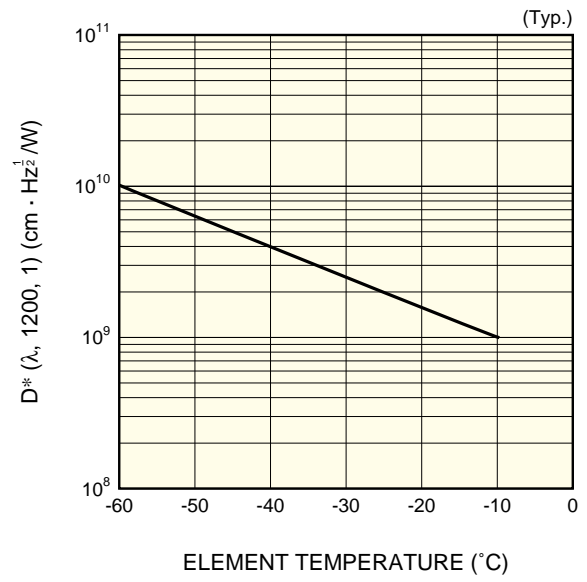
\*2: Photo sensitivity changes with the bias current. The values in the above table are measured with the optimum bias current.

■ Spectral response



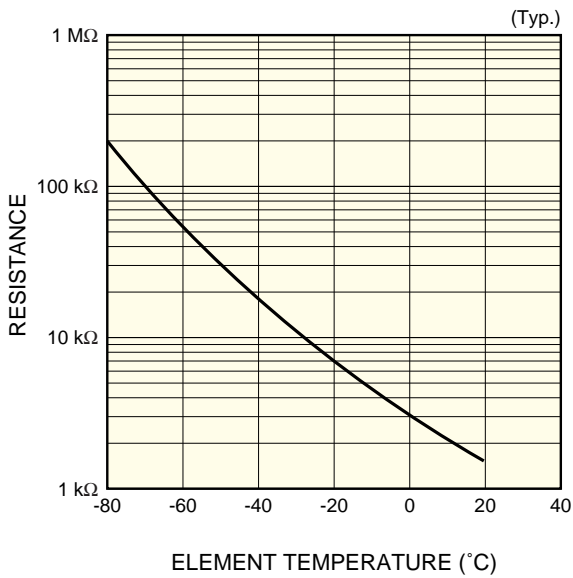
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■  $D^*$  vs. element temperature



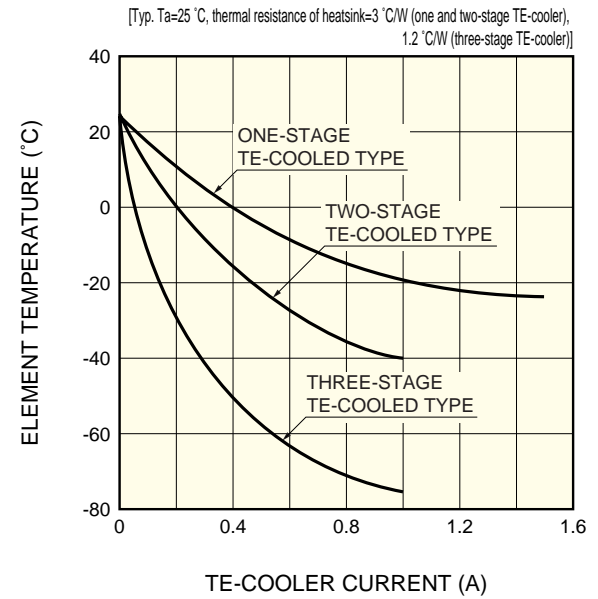
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■ Thermistor temperature characteristic



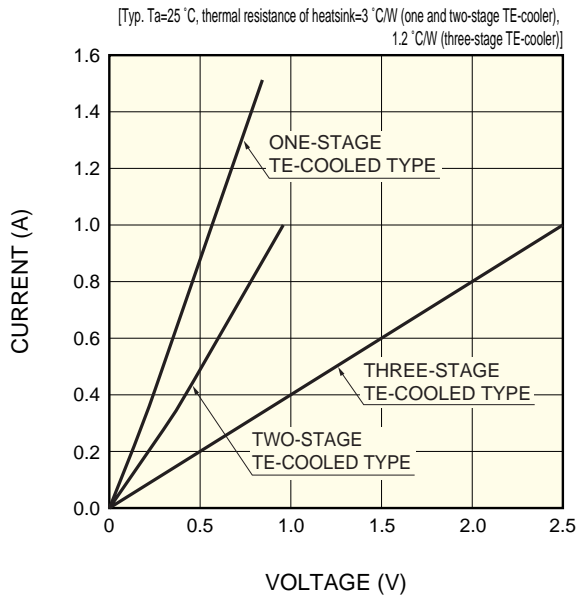
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■ Cooling characteristics of TE-cooler



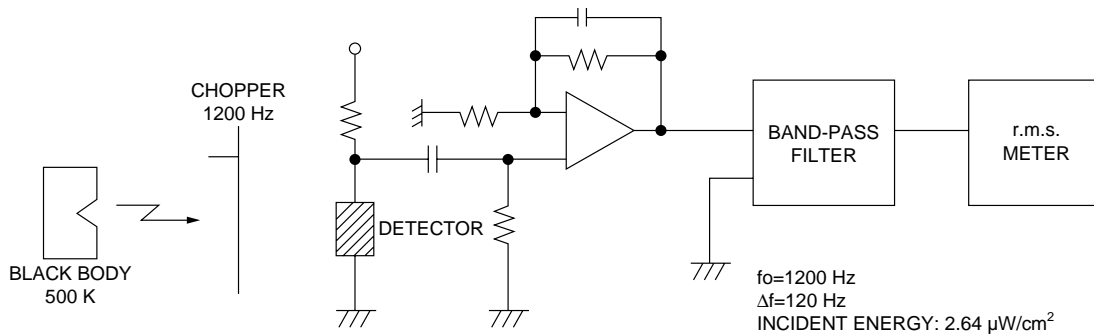
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■ Current vs. voltage of TE-cooler



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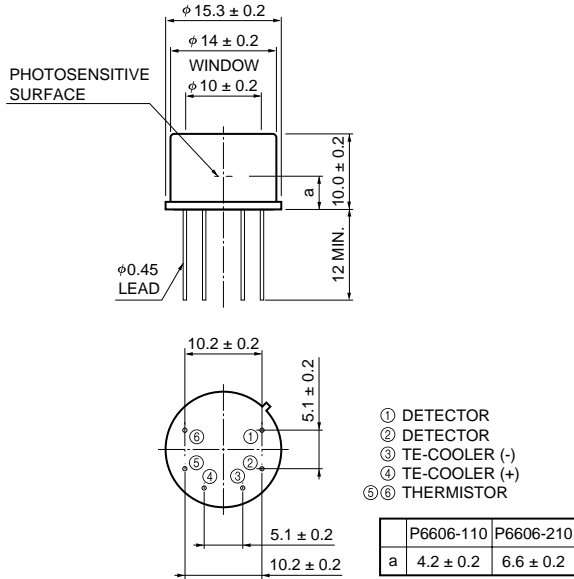
■ Measurement circuit



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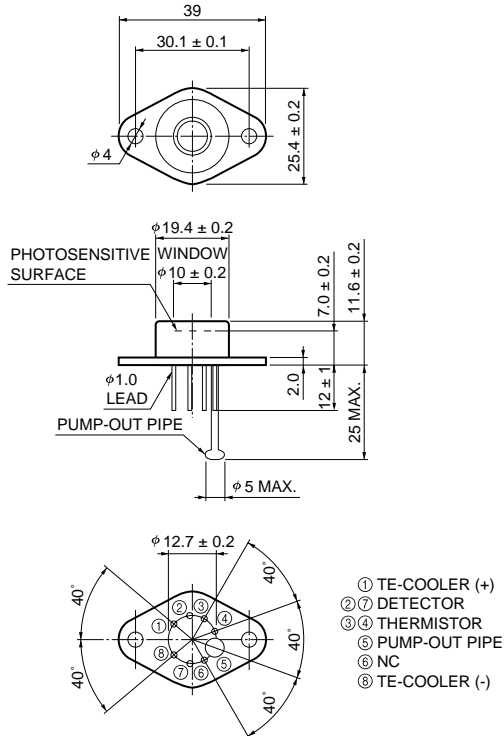
## Dimensional outlines (unit: mm)

### ① P6606-110/-210



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### ② P6606-305/-310/-320



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HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Higashi-ku, Hamamatsu City, 435-8558 Japan, Telephone: (81) 53-434-3311, Fax: (81) 53-434-5184, <http://www.hamamatsu.com>

U.S.A.: Hamamatsu Corporation, 360 Foothill Road, P.O.Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1) 908-231-0960, Fax: (1) 908-231-1218

Germany: Hamamatsu Photonics Deutschland GmbH, Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49) 08152-3750, Fax: (49) 08152-2658

France: Hamamatsu Photonics France S.A.R.L.: 19, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: 33-(1) 69 53 71 00, Fax: 33-(1) 69 53 71 10

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, United Kingdom, Telephone: (44) 1707-294888, Fax: (44) 1707-325777

North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171 41 Solna, Sweden, Telephone: (46) 8-509-031-00, Fax: (46) 8-509-031-01

Italy: Hamamatsu Photonics Italia S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39) 02-935-81-733, Fax: (39) 02-935-81-741