

Features

- Double encapsulation (thin-film and TO5)
- High durability for rugged operation
- Very high sensitivity
- Double encapsulation

Applications

- Flame monitoring
- Flame and spark detection
- Gas analysis
- Spectroscopy
- Temperature control
- Moisture measurement

Electrical and optical characteristics

Type No.	Active area [mm x mm]	Peak responsivity S [V/W]	
		Typ.	Min.
PbS005005TO5	0.5 x 0.5	$16 \cdot 10^5$	$10 \cdot 10^5$
PbS010010TO5	1 x 1	$8 \cdot 10^5$	$5.6 \cdot 10^5$
PbS020020TO5	2 x 2	$4 \cdot 10^5$	$2.8 \cdot 10^5$
PbS030030TO5	3 x 3	$3 \cdot 10^5$	$1.8 \cdot 10^5$
PbS060060TO5	6 x 6	$1.4 \cdot 10^5$	$0.9 \cdot 10^5$
PbS100100TO5	10 x 10	$0.6 \cdot 10^5$	$0.4 \cdot 10^5$
PbS010050TO5*	1 x 5	$3.5 \cdot 10^5$	$2 \cdot 10^5$

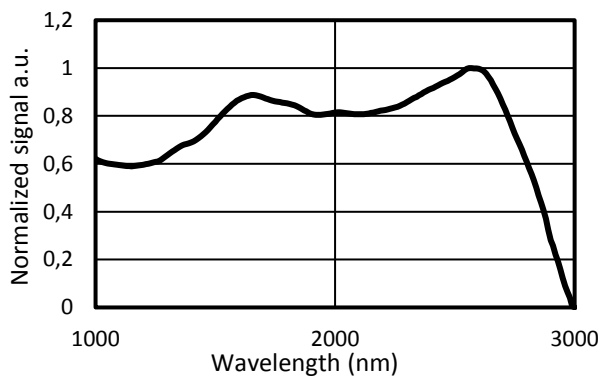


- Measured with 1550 nm LED, incident power $16 \mu\text{W}/\text{cm}^2$
- Measured in a voltage divider circuit with 50 V/mm
- Photo responsivity and detectivity are measured with constant load resistance ($R_L = 1 \text{ M}\Omega$) and calculated for matched resistance

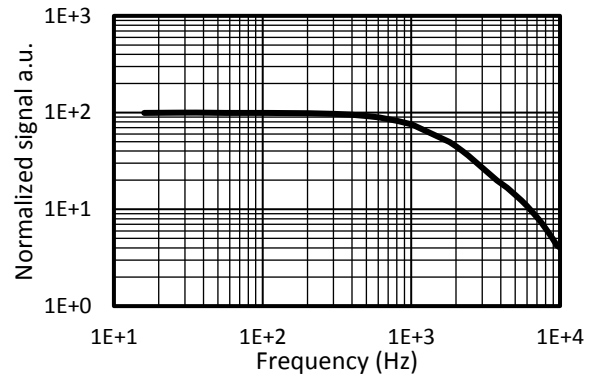
Element temperature [°C]	Peak wave-length λ_P [μm]	20% cut-off wavelength λ_C [μm]	Peak D* (620 Hz, 1 Hz) [$\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$]		Time constant [μs]	Dark resistance R_D [$\text{M}\Omega$]
	Typ.	Typ.	Typ.	Min.	Typ.	
22	2.7	2.9	$1.1 \cdot 10^{11}$	$0.8 \cdot 10^{11}$	200	0.3 – 3

* Dark resistance R_D [M Ω] = 0.05 - 1

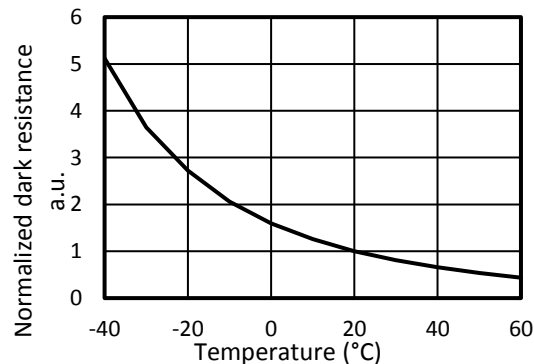
Typical spectral response



Typical frequency response



Typical resistance change over temperature



Storage

- Storage temperature: -55°C to 70°C
- Exposure to UV light results in permanent damage
- Prolonged exposure to visible light results in temporary low dark resistance

Handling

- Active area is scratch sensitive, protect top surface from any mechanical contact
- Ensure dust-free environment for device handling
- Operating temperature: -30°C to 70°C

Regulatory

For the use of HertzstückTM PbS and PbSe infrared photodetectors in medical devices, monitoring and control instruments and consumer applications RoHS exemptions apply.

For automotive applications HertzstückTM PbS and PbSe infrared photodetectors fall under ELV exemption.

List of mechanical outlines (dimensions in mm)

