

Infrared detector
PbS photoconductive detector
Double encapsulated TO-package

Features

- **Double encapsulation (thin film + TO)**
- High durability for rugged operation
- Very high sensitivity
- Sapphire window

Applications

- Gas analysis
- Spectroscopy
- Process control
- Temperature control

Specification

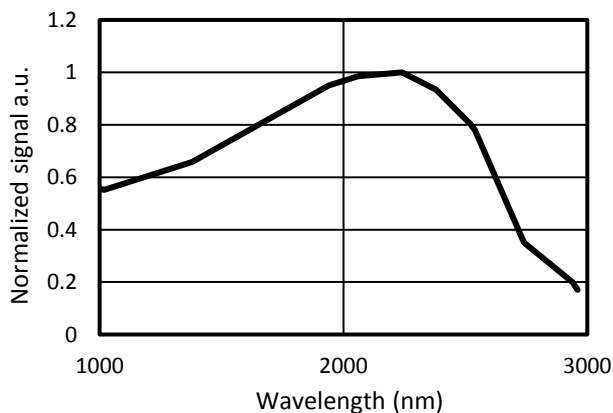
Type No.	Package	Active area [mm x mm]	Operating temperature [°C]	Storage temperature [°C]
PbS020020TO5	TO5	2 x 2	-30 to +70	-55 to +70

Electrical and optical characteristics

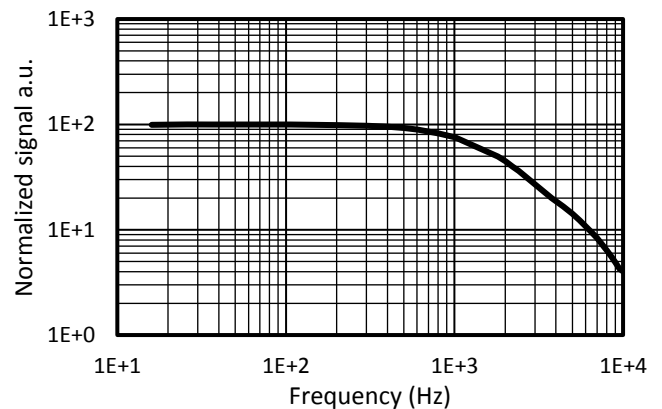
Type No.	Element temperature [°C]	Peak wavelength λ_p [μm]	20% cut-off wavelength λ_c [μm]	Peak responsivity S [V/W]		Peak D* (606 Hz, 1 Hz) [$\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$]		Time constant [μs]	Dark resistance R_D [M Ω]
				Typ.	Min.	Typ.	Min.		
PbS020020TO5	26	2.2	2.9	$4 \cdot 10^5$	$2 \cdot 10^5$	$1 \cdot 10^{11}$	$5 \cdot 10^{10}$	200	0.3 – 3

- Measured with 1550 nm LED, incident power 22 $\mu\text{W}/\text{cm}^2$
- Measured in a voltage divider circuit with 10 V/mm and linearly extrapolated to 50 V/mm
- Photo responsivity and detectivity are measured with matched load resistance ($R_L = R_D$)

Typical spectral response



Typical frequency response



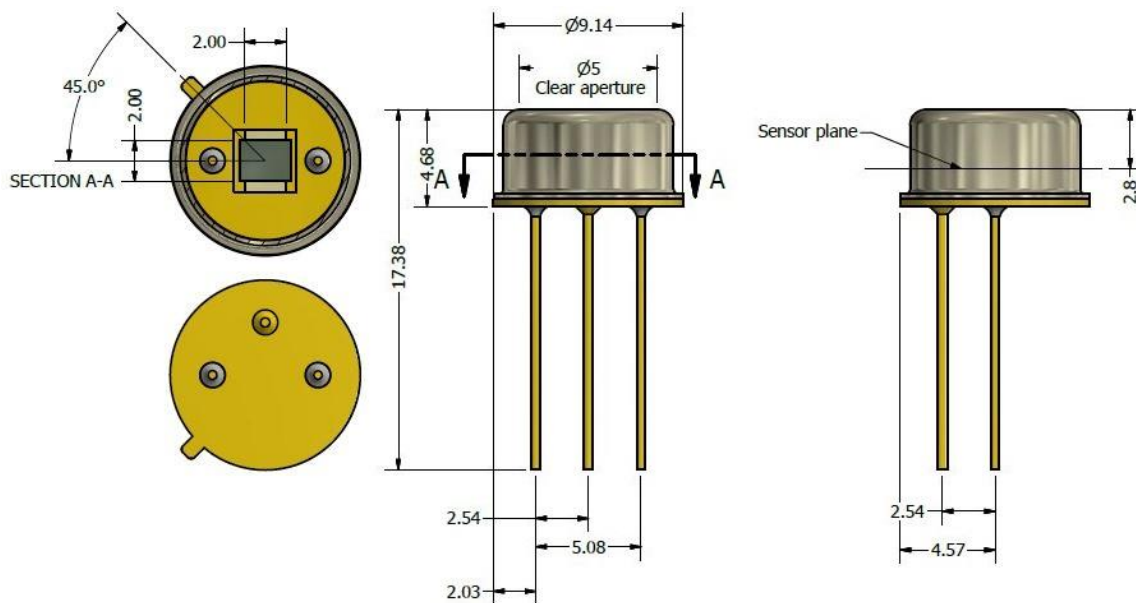
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Storage

- 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

Mechanical outline (dimensions in mm)

PbS020020T05



Regulatory

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

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