

Infrared detector
PbS photoconductive detector
Bondable bare chip

Features

- Bondable electrodes for COB mounting
- Very high sensitivity
- High durability for rugged operation

Applications

- Gas analysis
- Spectroscopy
- Process control
- Temperature control

Specification

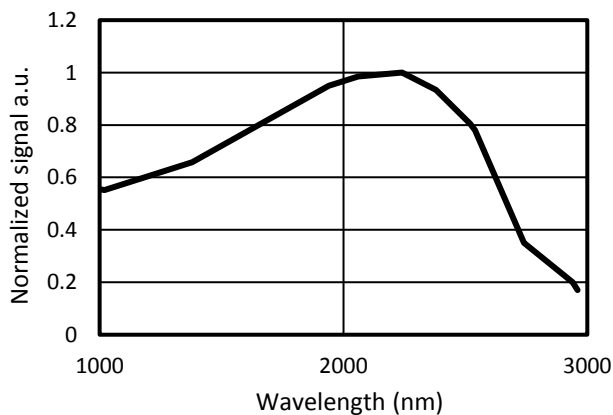
Type No.	Package	Active area [mm x mm]	Operating temperature [°C]	Storage temperature [°C]
PbS060060BC	Bare chip / thin film encapsulation	6 x 6	-30 to +70	-55 to +70

Electrical and optical characteristics

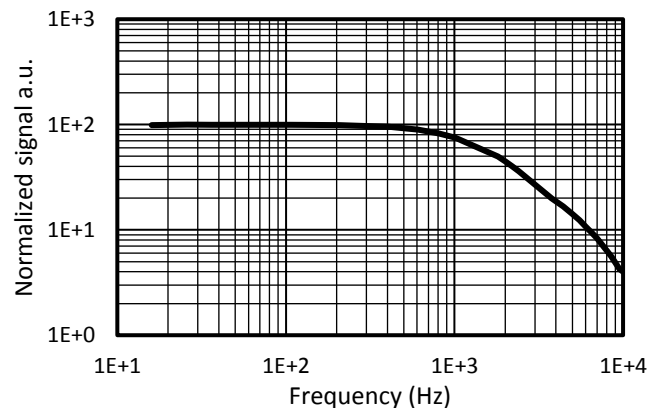
Type No.	Element temperature [°C]	Peak wavelength λ_p [μm]	20% cut-off wavelength λ_c [μm]	Peak responsivity S [V/W]		Peak D* (606 Hz, 1 Hz) [$\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$]		Time constant [μs]	Dark resistance R_D [M Ω]
				Typ.	Min.	Typ.	Min.		
PbS060060BC	26	2.2	2.9	$1.4 \cdot 10^5$	$0.9 \cdot 10^5$	$1.0 \cdot 10^{11}$	$6.0 \cdot 10^{10}$	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 ($R_L = R_D$)
- Without filter or window

Typical spectral response



Typical frequency response



Storage

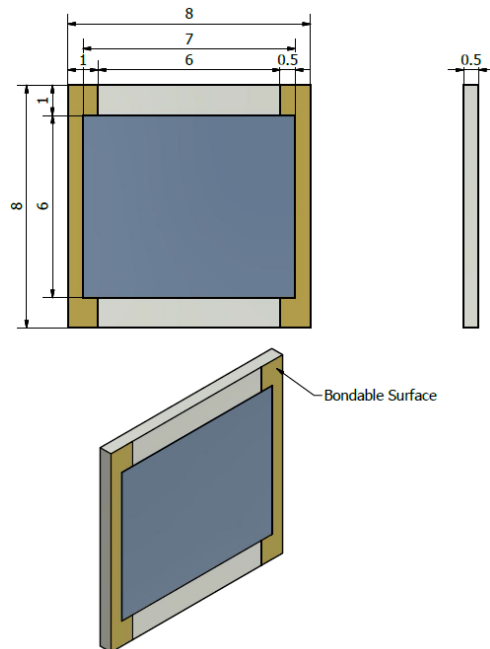
- Storage temperature: -55°C to 70°C
- Exposure to UV light results in permanent damage
- Prolonged exposure to visible light results in temporary low dark resistance

Handling

- Active area is scratch sensitive, protect top surface from any mechanical contact
- Ensure dust-free environment for device handling

Mechanical outline (dimensions in mm)

PbS060060BC



Die attach

- Use clean, soft rubber tip for pick-and place handling
- UV-curing is not suitable due to permanent damage by UV light exposure
- Element temperature should never exceed 70°C

Wire bonding

- Electrodes are optimized for room temperature Al-wire bonding
- Element temperature should never exceed 70°C

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.