

**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**

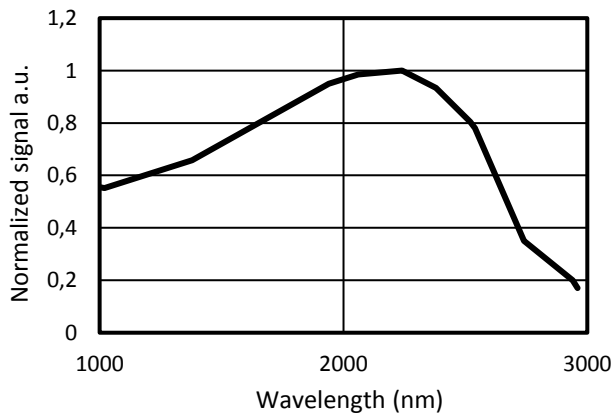
Type No.	Package	Active area [mm x mm]	Operating temperature [°C]	Storage temperature [°C]
PbS060060BC	Bare chip / thin film encapsulation	6 x 6	-30 to +70	-55 to +70

**Electrical and optical characteristics**

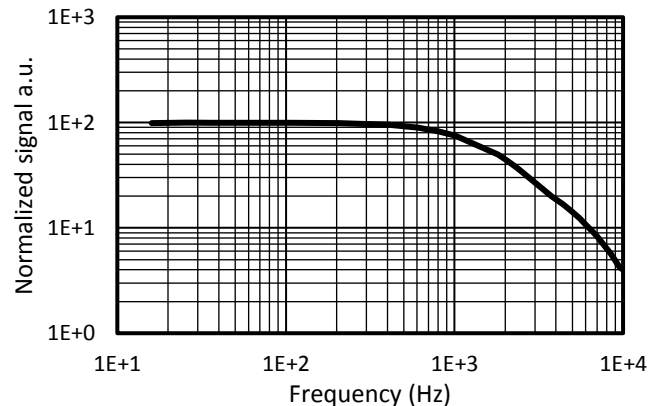
Type No.	Element temperature [°C]	Peak wavelength $\lambda_p$ [μm]	20% cut-off wavelength $\lambda_c$ [μm]	Peak responsivity S [V/W]		Peak D* (606 Hz, 1 Hz) [cm·Hz <sup>1/2</sup> /W]		Time constant [μs]	Dark resistance R <sub>D</sub> [MΩ]
				Typ.	Min.	Typ.	Min.		
PbS060060BC	26	2.2	2.9	1.4 · 10 <sup>5</sup>	0.9 · 10 <sup>5</sup>	1.0 · 10 <sup>11</sup>	6.0 · 10 <sup>10</sup>	200	0.3 – 3

- Measured with 1550 nm LED, incident power 22 μW/cm<sup>2</sup>
- 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<sub>L</sub> = R<sub>D</sub>)
- Without filter or window

**Typical spectral response**



**Typical frequency response**



# Infrared detector PbS photoconductive detector Bondable bare chip

## Storage

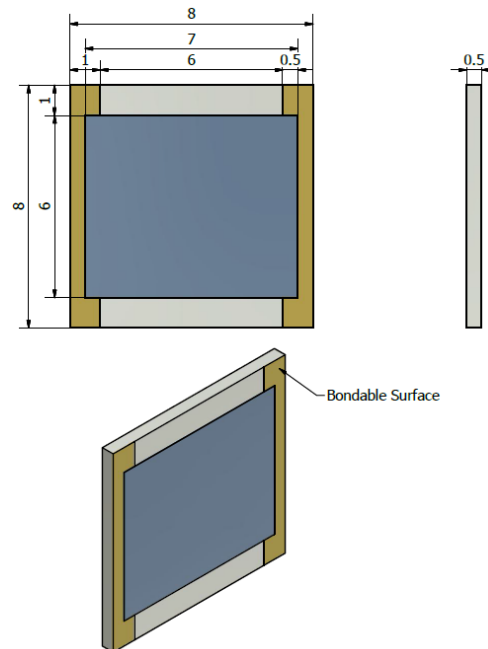
- Storage temperature: -55°C to 70°C
- Exposure to UV light results in permanent damage
- Prolonged exposure to visible light results in low dark resistance

## 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