

# PbSe near-infrared detector

## Single-Pixel thin-film encapsulated

**trinamiX**

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### Features

- Bare Chip
- Bondable electrode for COB mounting
- High durability for rugged operation
- Room temperature operation
- Custom filters available
- Custom packages upon request

### Applications

- Gas detection and analysis
- Spectroscopy
- Process control
- Temperature control
- Flame detector

### Electrical and optical characteristics

Type No.	Active area [mm x mm]	Peak responsivity S [V/W]	
		Typ.	Min.
PbSe010010BC	1 x 1	$4.5 \times 10^4$	$2.3 \times 10^4$
PbSe020020BC	2 x 2	$4.0 \times 10^4$	$2.0 \times 10^4$
PbSe030030BC	3 x 3	$1.5 \times 10^4$	$8 \times 10^3$
PbSe060060BC	6 x 6	$8 \times 10^3$	$4 \times 10^3$

Element temperature [°C]	Peak wave-length $\lambda_p$ [μm]	20% cut-off wavelength $\lambda_c$ [μm]	Peak D* (620 Hz, 1 Hz) [cm·Hz <sup>1/2</sup> /W]		Time constant [μs]	Dark resistance R <sub>D</sub> [MΩ]
	Typ.	Typ.	Typ.	Min.		
22	3.8	4.5	$1.8 \times 10^{10}$	$1.2 \times 10^{10}$	4	0.1 - 3

- Measured with 500K blackbody
- 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

### Storage

- Storage temperature: -55°C to 90°C

### 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 +90°C

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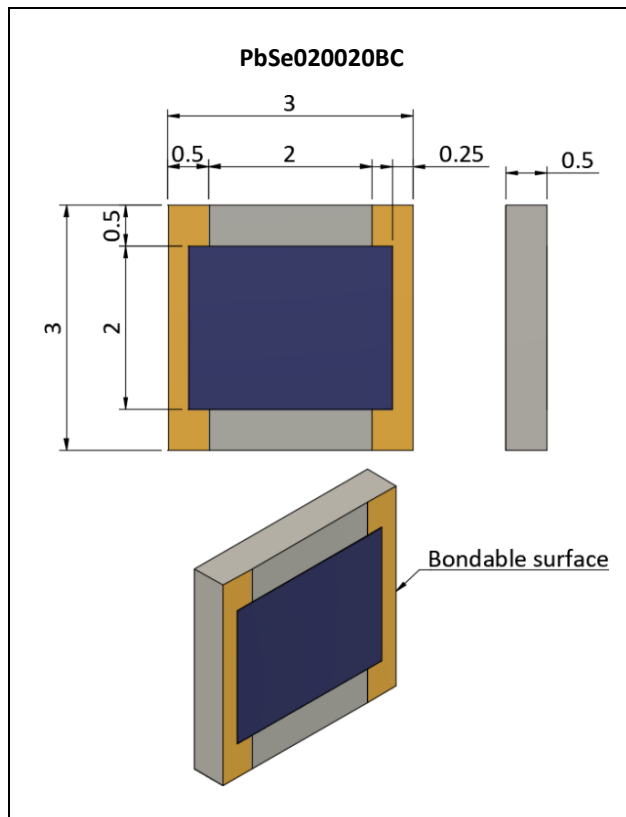
### Die attach

- Use clean, soft rubber tip for pick and place handling
- Element temperature should never exceed 90°C

### Wire-bonding

- Electrodes are optimized for room temperature Al-wire-bonding
- Element temperature should never exceed 90°C

### Mechanical outlines (dimensions in mm)



### 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.