

# PbSe near-infrared detector

## Multi-Single-Pixel thin-film encapsulated

### Features

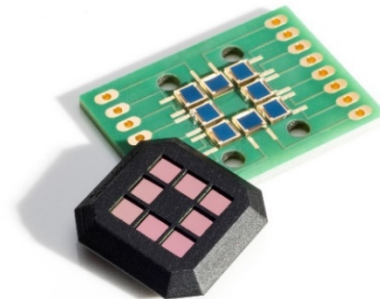
- Wire-bonded on PCB
- High durability for rugged operation
- Room temperature operation

### Applications

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

### Electrical and optical characteristics per pixel

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



- 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

Element temperature [°C]	Peak wave-length $\lambda_P$ [ $\mu\text{m}$ ]	20% cut-off wavelength $\lambda_C$ [ $\mu\text{m}$ ]	Peak $D^*$ (620 Hz, 1 Hz) [ $\text{cm} \cdot \text{Hz}^{1/2} / \text{W}$ ]		Time constant [ $\mu\text{s}$ ]	Dark resistance $R_D$ [ $\text{M}\Omega$ ]
	Typ.	Typ.	Typ.	Min.	Typ.	
22	3.8	4.5	$1.8 \cdot 10^{10}$	$1.2 \cdot 10^{10}$	4	0.1 - 3

### Mechanical characteristics

- Number of lines 1 - 3
- Number of pixels 2 - 8
- Minimum pixel width 1000  $\mu\text{m}$
- Minimum pixel height 1000  $\mu\text{m}$

Please contact us for an individual design: [info@hertzstueck.de](mailto:info@hertzstueck.de)

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**trinamiX**

A brand of  
BASF – We create chemistry

### Options

- Individual housing
- Integrated filters
- Individual PCB
- Evaluation Kit available

### Storage

- Storage temperature: -55°C to +90°C
- Exposure to UV light results in permanent damage
- Prevent exposure to UV and visible light

### 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

### 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.