

## Features

- Thin-film encapsulation
- Very high sensitivity
- Suitable for automated wire-bonding

## Applications

- NIR spectrometry
- Fire and spark detection
- Flame and moisture monitoring

## Electrical and optical characteristics

Element temperature [°C]	Peak wavelength $\lambda_p$ [ $\mu\text{m}$ ]	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 $R_D$ [ $\text{M}\Omega/\text{sq}$ ]
	Typ.	Typ.	Typ.	Min.	Typ.	
22	2.7	2.9	$1 \cdot 10^{11}$	$0.5 \cdot 10^{11}$	200	0.3 - 3

- Measured with 1550 nm LED, incident power  $16 \mu\text{W}/\text{cm}^2$
- 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

## Possible mechanical characteristics

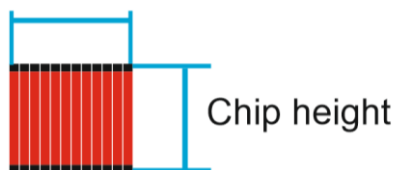
- Number of lines 1 – 4
- Number of pixels 2 – 16
- Minimum pixel width 20  $\mu\text{m}$
- Minimum pixel height 20  $\mu\text{m}$
- Minimum pixel gap 20  $\mu\text{m}$
- Minimal chip length 3000  $\mu\text{m}$
- Minimal chip height 3000  $\mu\text{m}$

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

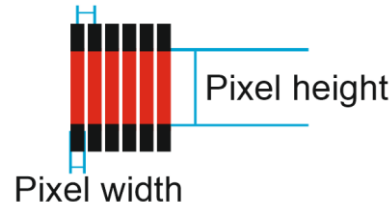
## Exemplary mechanical characteristics

Type No.	Number of lines	Number of pixels	Pixel pitch [ $\mu\text{m}$ ]	Pixel width [ $\mu\text{m}$ ]	Pixel height [ $\mu\text{m}$ ]	Operating temperature [°C]
PbS_MP_01x12_0200_0180x1800	1	12	200	180	x 1800	-30 to 70

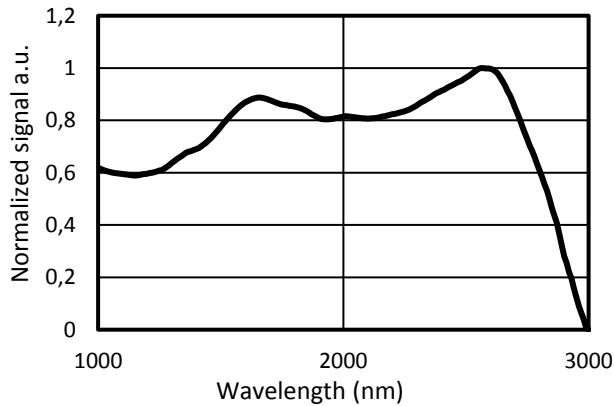
Chip length



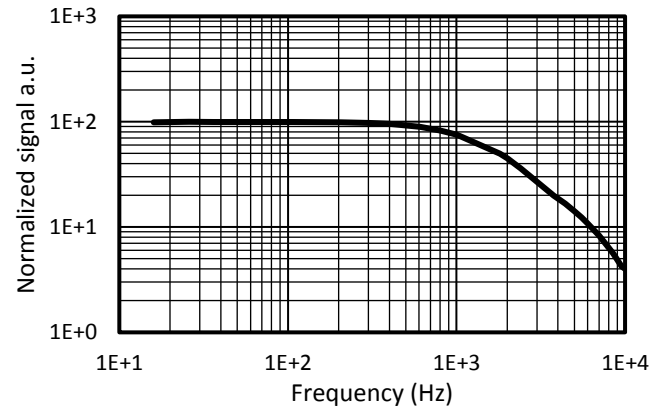
Pixel Pitch



### Typical spectral response per pixel



### Typical frequency response per pixel



### 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

### Options

- Individual housing
- Bonding on PCB
- Integrated optics

### Storage

- Storage temperature: -30°C to 70°C
- Exposure to UV light results in permanent damage
- Prolonged exposure to visible light results in low dark resistance

### 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.