

Features

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

Applications

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

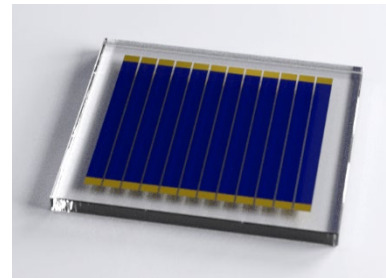
Electrical and optical characteristics

| Element temperature [°C] | Peak wave-length λ_p [μm] | 20% cut-off wavelength λ_c [μm] | Peak D* (620 Hz, 1 Hz) [cm·Hz ^{1/2} /W] | | Time constant [μs] | Dark resistance R _d [MΩ/sq] |
|--------------------------|-----------------------------------|---|--|------------------------|--------------------|--|
| | Typ. | Typ. | Typ. | Min. | Typ. | |
| 22 | 2.7 | 2.9 | 1 · 10 ¹¹ | 0.5 · 10 ¹¹ | 200 | 0.3 - 3 |

- Measured with 1550 nm LED, incident power 16 μW/cm²
- Measured in a voltage divider circuit with 50 V/mm
- Photo responsivity and detectivity are measured with constant load resistance (R_L = 1 MΩ) and calculated for matched resistance

Possible mechanical characteristics

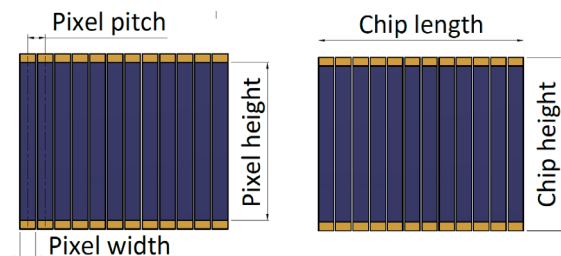
- Number of lines 1 – 4
- Number of pixels 2 – 16
- Minimum pixel width 20 μm
- Minimum pixel height 20 μm
- Minimum pixel gap 20 μm
- Minimal chip length 3000 μm
- Minimal chip height 3000 μm



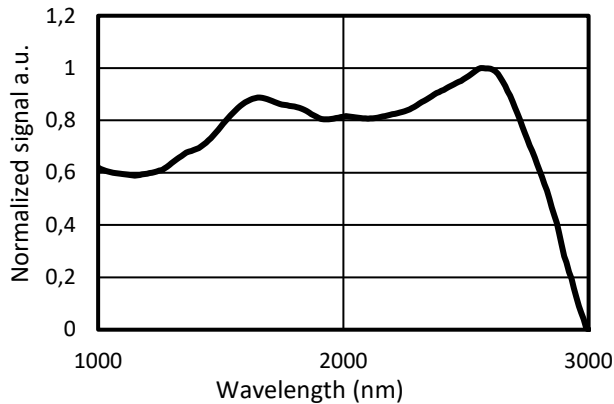
Please contact us to get an individual design: info@hertzstueck.de

Exemplary mechanical characteristics

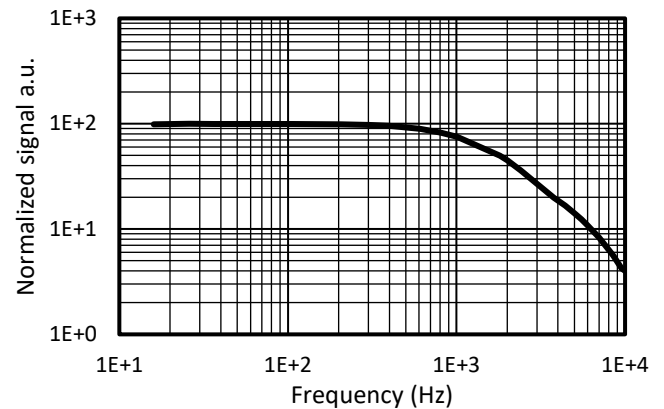
| Type No. | Number of lines | Number of pixels | Pixel pitch [μm] | Pixel width [μm] | Pixel height [μm] | Operating temperature [°C] |
|-----------------------------|-----------------|------------------|------------------|------------------|-------------------|----------------------------|
| PbS_MP_01x12_0200_0180x1800 | 1 | 12 | 200 | 180 | 1800 | -30 to 70 |



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.