



trinamiX

A brand of
BASF – We create chemistry

PbS near-infrared detector

Line array bare chip

Features

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

Applications

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

Electrical and optical characteristics per pixel

Element temperature [°C]	Peak wave-length λ_P [μm]	20% cut-off wavelength λ_C [μm]	Peak D* (620 Hz, 1 Hz) [$\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$]		Time constant [μs]	Dark resistance R_D [$\text{M}\Omega$]
	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 pixels 1 - 512
- Minimum pixel width 20 μm
- Minimum pixel height 20 μm
- Minimum pixel pitch 50 μm
- Minimal chip length 3000 μm
- Minimal chip height 3000 μm

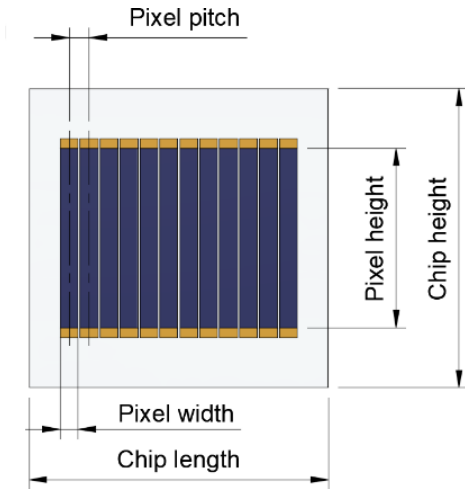


Please contact us for an individual design: info@hertzstueck.de

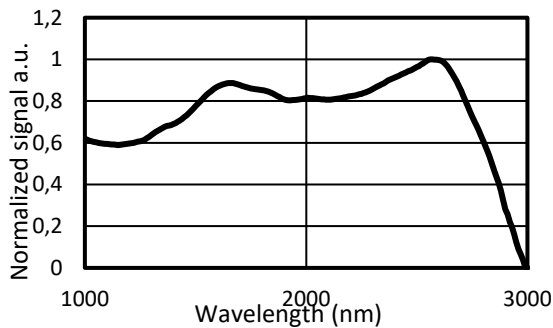
PbS near-infrared detector
Line array bare chip

Exemplary mechanical characteristics

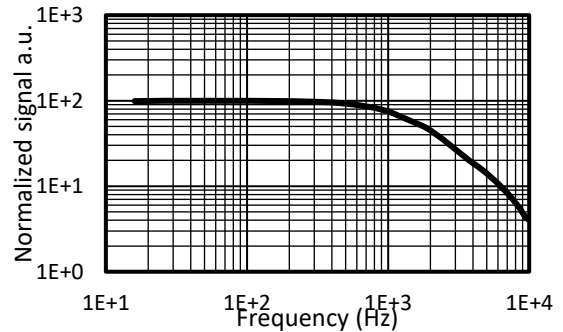
Type No.	Number of Pixels	Pixel pitch [μm]	Pixel width [μm]	Pixel height [μm]	Operating temperature [°C]
PbS_Arr_256_0050_0040x0380	256	50	40 x	380	-30 to +70



Typical spectral response per pixel



Typical frequency response per pixel



This document, or any answers or information provided herein by trinamiX GmbH does not constitute a legally binding obligation of trinamiX GmbH. While the descriptions, designs, data and information contained herein are presented in good faith and believed to be accurate, it is provided for your guidance only. Because many factors may affect processing or application/use, we recommend that you make tests to determine the suitability of a product for your particular purpose prior to use. It does not relieve our customers from the obligation to perform a full inspection of the products upon delivery or any other obligation. No warranties of any kind, either express or implied, including warranties of merchantability or fitness for a particular purpose, are made regarding products described or designs, data or information set forth, or that the products, designs, data or information may be used without infringing the intellectual property rights of others. In no case shall the descriptions, information, data or designs provided be considered a part of our terms and conditions of sale.

PbS near-infrared detector

Line array bare chip

trinamiX

A brand of
BASF – We create chemistry

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 onto PCB
- Integrated optics

Storage

- Storage temperature: -55°C to +70°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 +70°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.

This document, or any answers or information provided herein by trinamiX GmbH does not constitute a legally binding obligation of trinamiX GmbH. While the descriptions, designs, data and information contained herein are presented in good faith and believed to be accurate, it is provided for your guidance only. Because many factors may affect processing or application/use, we recommend that you make tests to determine the suitability of a product for your particular purpose prior to use. It does not relieve our customers from the obligation to perform a full inspection of the products upon delivery or any other obligation. No warranties of any kind, either express or implied, including warranties of merchantability or fitness for a particular purpose, are made regarding products described or designs, data or information set forth, or that the products, designs, data or information may be used without infringing the intellectual property rights of others. In no case shall the descriptions, information, data or designs provided be considered a part of our terms and conditions of sale.