PbS near-infrared detector Multi-Pixel thin-film encapsulated



A brand of BASF - We create chemistry

Features

- Bondable electrode for COB mounting •
- High durability for rugged operation •
- Very high sensitivity .
- Suitable for automated wire-bonding •
- Room temperature operation

Applications

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

Electrical and optical characteristics per pixel

Element	Peak wave-	20% cut-off	Peak D*		Time constant	Dark resistance R _D
temperature	length λ_P	wavelength λ_{C}	(620 Hz, 1 Hz)		[µs]	[MΩ]
[°C]	[µm]	[µm]	[cm·Hz ^½ /W]			
	Тур.	Тур.	Тур.	Min.	Тур.	
22	2.7	2.9	$1 \cdot 10^{11}$	$0.5 \cdot 10^{11}$	200	0.3 - 15*

*depends on pixel geometry

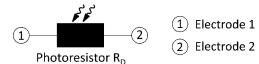
- Measured with 1550 nm LED, incident power 16 μ W/cm² •
- Measured in a voltage divider circuit with 50 V/mm
- Photo responsivity and detectivity are measured with constant load resistance ($R_L = 1 M\Omega$) and calculated • for matched resistance

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 pitch 50 µm •
- Minimal chip length 3000 µm
- Minimal chip height 3000 µm

Please contact us for an individual design: info@pidtek.com

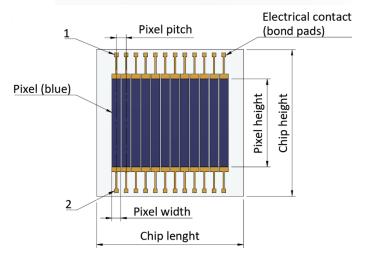
Schematic



trinamiX GmbH Industriestr. 35 Germany

Contact www.pidtek.com 67063 Ludwigshafen E info@pidtek.com Tel:021-37660163 中国区代理—上海辟泰智能科技有限公司







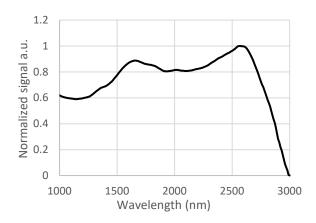
PbS near-infrared detector Multi-Pixel thin-film encapsulated

A brand of BASF – We create chemistry

Exemplary mechanical characteristics

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

Typical spectral response per pixel Typical frequency response per pixel

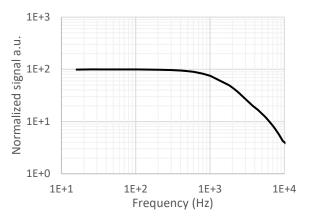


Die attach

- 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

Storage

- Storage temperature: -55°C to +70°C
- Exposure to UV light results in permanent damage
- Prolonged exposure to visible light results in temporary low dark resistance



Wire-bonding

- Electrodes are optimized for room temperature Al-wire-bonding
- Element temperature should never exceed +70°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 +70°C

trinamiX GmbH Industriestr. 35 67063 Ludwigshafen Germany

Page 2/3

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 Multi-Pixel thin-film encapsulated

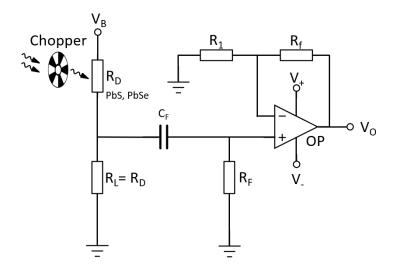


A brand of BASF – We create chemistry

Options

- Individual housing
- Bonding onto PCB
- Integrated optics
- Evaluation-Kit available

Exemplary circuit



- V_B: Bias voltage
- V_o: Output voltage
- R_D: Dark resistance of the detector
- R₁: Load resistor
- C_F: Filter capacitor
- R_F: Filter resistor
- R_f: Feedback resistor
- R₁: Gain resistor

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.

trinamiX GmbH Industriestr. 35 67063 Ludwigshafen Germany 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.