PbS near-infrared detector Line array module in PS28 package



A brand of BASF – We create chemistry

Features

- Double encapsulation (thin-film and PS28 housing • with 1-stage TE-cooler)
- Very high sensitivity
- Sapphire window

Applications

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



Array module specifications

Type No.	Package	Number	Pixel	Pixel	Pixel	Operating
		of pixels	pitch	width	height	temperature
			[µm]	[µm]	[µm]	[°C]
PbS_Mod_256_0050_0040x0380	PS28	256	50	40 x	380	-30 to +70

- Pixel operability > 95% •
- Array length: 12.8 mm (active area) •
- Chip (Glass wafer) size: 15 x 2.5 mm •

Electrical and optical characteristics per pixel

Element	Peak wave-	20% cut-off	Peak D*		Time	Dark resistance R _D
temperature	$\text{length } \lambda_{P}$	wavelength λ_{C}	(620 Hz, 1 Hz)		constant [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	3 - 30*

*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

1-stage TE-cooler specifications

Ambient temperature [K]	dT _{max} [K]	Q _{max} [K]	I _{max} [A]	U _{max} [V]	ACR [Ohm]
300	70	5.0	1.3	6.1	3.5
323	72	5.4	1.3	6.8	3.9

trinamiX GmbH

Contact

Industriestr. 35 67063 Ludwigshafen Germany

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

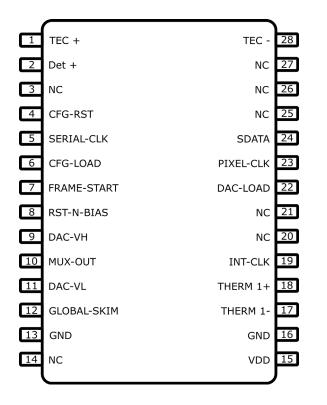


BASF – We create chemistry

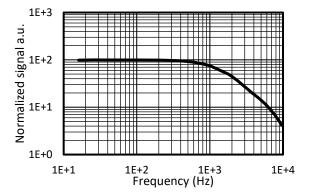
1.2 in 1 0.8 0.6 0.4 0.2 0 1000 2000 Wavelength (nm) 3000

Typical spectral response per pixel

Pin connections



Typical frequency response per pixel



Other functionalities

- Integration time range: 4.025 μs 210 ms (digitally selectable in 3.2 μs steps)
- Frame rate: sample rates up to 1,000 frames per second (maximum frame rate is achieved at the minimum integration time)

trinamiX GmbH Industriestr. 35

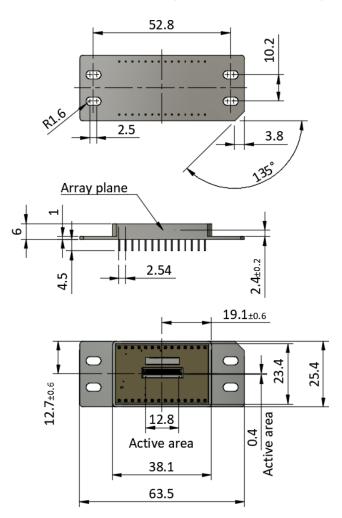
67063 Ludwigshafen Germany This document, or any answers or information provided herein by trinamiX GmbH does not constitute a legally binding obligation of trinamiX GmbH. While the descriptions, designs, data and information contained herein are presented in good faith and believed to be accurate, it 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.

PbS near-infrared detector Line array module in PS28 package



A brand of BASF – We create chemistry

Mechanical outlines (dimensions in mm)



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

Options

- Filter
- Variable pixel geometry
- Variable number of pixels
- Other packaging options

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.