PbSe near-infrared detector Multi-Single-Pixel thin-film encapsulated



BASF - We create chemistry

Features

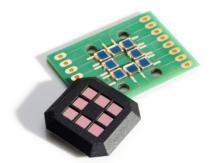
- Wire-bonded on PCB
- High durability for rugged operation
- Room temperature operation

Applications

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

Electrical and optical characteristics per pixel

Type No.	Active area	Peak responsivity	
	[mm x mm]	S [V/W]	
		Тур.	Min.
PbSe010010BC	1 x 1	$4.5 \cdot 10^4$	2.3 · 10 ⁴
PbSe020020BC	2 x 2	4 · 104	2 · 104
PbSe030030BC	3 x 3	1.5 · 10 ⁴	8 · 10 ³
PbSe060060BC	6 x 6	8 · 10 ³	4 · 10 ³



- Measured with 500K blackbody
- Measured in a voltage divider circuit with 1 $M\Omega$ load resistor
- Photo responsivity and detectivity calculated for a voltage divider circuit with matched resistance and 50 V/mm

Element	Peak wave-	20% cut-off	Peak D*		Time	Dark
temperature	length λ _P	wavelength λ_{C}	(620 Hz, 1 Hz)		constanta	resistance R _D
[°C]	[µm]	[µm]	[cm·Hz½/W]		[µs]	[MΩ]
	Тур.	Тур.	Тур.	Min.	Тур.	
22	3.8	4.5	1.8 · 10 ¹⁰	1.2 · 10 ¹⁰	4	0.1 - 3

^aliterature value

Mechanical characteristics

Number of lines 1 - 3 Number of pixels 2 - 8 Minimum pixel width 1000 μm Minimum pixel height 1000 μm

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

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Contact

W www.trinamiXsensing.com

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Storage

- Storage temperature: -55°C to +90°C
- Exposure to UV light results in permanent damage
- Prolonged exposure to visible light results in temporary low dark resistance

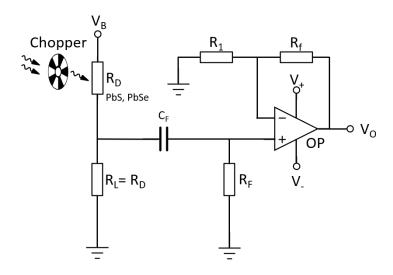
Handling

- Active area is scratch sensitive, protect top surface from any mechanical contact
- Ensure dust-free environment for device handling
- Operating temperature: -30°C to +90°C

Options

- Individual housing
- Integrated filters
- Individual PCB
- Evaluation Kit available

Exemplary circuit



V_R: Bias voltage

V_o: Output voltage

R_D: Dark resistance of the detector

R_L: Load resistor

C_F: Filter capacitor R_E: Filter resistor

R_f: Feedback resistor

R₁: Gain resistor

Regulatory

For the use of trinamiX PbS and PbSe infrared photodetectors in medical devices, monitoring and control instruments and consumer applications RoHS exemptions apply.

For automotive applications trinamiX PbS and PbSe infrared photodetectors fall under ELV exemption.

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