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



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Features

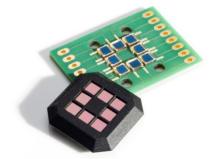
- Wire-bonded on PCB
- High durability for rugged operation
- Room temperature operation

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 [mm x mm]	Peak responsivity S [V/W]	
		Тур.	Min.
PbSe010010BC	1 x 1	$4.5 \cdot 10^{4}$	$2.3 \cdot 10^{4}$
PbSe020020BC	2 x 2	$4 \cdot 10^{4}$	2 · 10 ⁴
PbSe030030BC	3 x 3	$1.5 \cdot 10^{4}$	8 · 10 ³
PbSe060060BC	6 x 6	8 · 10 ³	4 · 10 ³



• Measured with 500K blackbody

- Measured in a voltage divider circuit with 50 V/mm
- Photo responsivity and detectivity are measured with constant load resistance (RL = 1 MΩ) and calculated for matched resistance

Element	Peak wave-	20% cut-off	Peak D*		Time	Dark
temperature	length λ _P	wavelength λ_c	(620 Hz, 1 Hz)		constant [µs]	resistance R _D
[°C]	[µm]	[µm]	[cm·Hz ^½ /W]			[MΩ]
	Тур.	Тур.	Тур.	Min.	Тур.	
22	3.8	4.5	1.8 · 10 ¹⁰	1.2 · 10 ¹⁰	4	0.1 - 3

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@pidtek.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

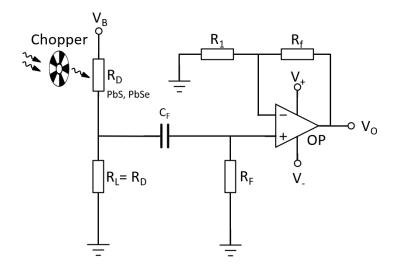
Handling

- 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_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.

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