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Features

- Double encapsulation (thin-film and TO package)
- High durability for rugged operation
- Very high sensitivity
- Room temperature operation
- Sapphire window

Applications

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

Type No.	Active area [mm x mm]	Peak responsivity S [V/W]	
	[Тур.	Min.
PbS005005TO5	0.5 x 0.5	16 · 10 ⁵	10 · 10 ⁵
PbS010010TO5	1 x 1	8 · 10 ⁵	5.6 · 10⁵
PbS020020TO5	2 x 2	4 · 10 ⁵	2.8 · 10 ⁵
PbS030030TO5	3 x 3	3 · 10 ⁵	1.8 · 10 ⁵
PbS060060TO8	6 x 6	1.4 · 10 ⁵	0.9 · 10 ⁵
PbS010050TO5*	1 x 5	3.5 · 10⁵	2 · 10 ⁵

Electrical and optical characteristics



* Dark resistance $R_D[M\Omega] = 0.05 - 1$

- Measured with 1550 nm LED, incident power 16 $\mu W/cm^2$
- Measured in a voltage divider circuit with 50 V/mm
- Photo responsivity and detectivity are measured with constant load resistance ($R_L = 1 M\Omega$) and calculated for matched resistance

Element temperature [°C]	Peak wave- length λ _P [μm]	20% cut-off wavelength λ_{c} [µm]	Peak D* (620 Hz, 1 Hz) [cm·Hz ^½ /W]		Time constant [µs]	Dark resistance R_D [M Ω]
	Тур.	Тур.	Тур.	Min.	Тур.	
22	2.7	2.9	$1.1 \cdot 10^{11}$	$0.8\cdot10^{11}$	200	0.3 - 3

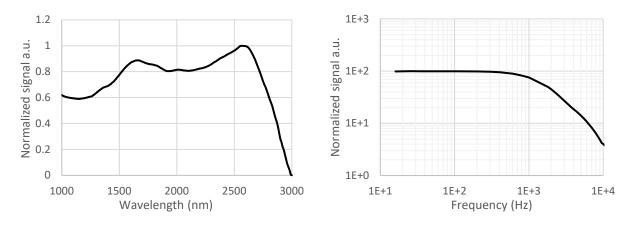




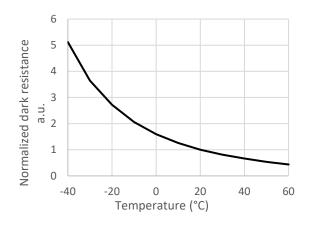
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Typical frequency response

Typical spectral response



Typical resistance change over temperature



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

Options

- Custom windows and filters
- 1-stage or 2-stage Thermoelectric cooler (TEC) including thermistor
- Built-in internal LED for illumination and detection

Handling

- Ensure dust-free environment for device handling
- Operating temperature: -30°C to +70°C
- Custom packages upon request
- **Evaluation Kit available**

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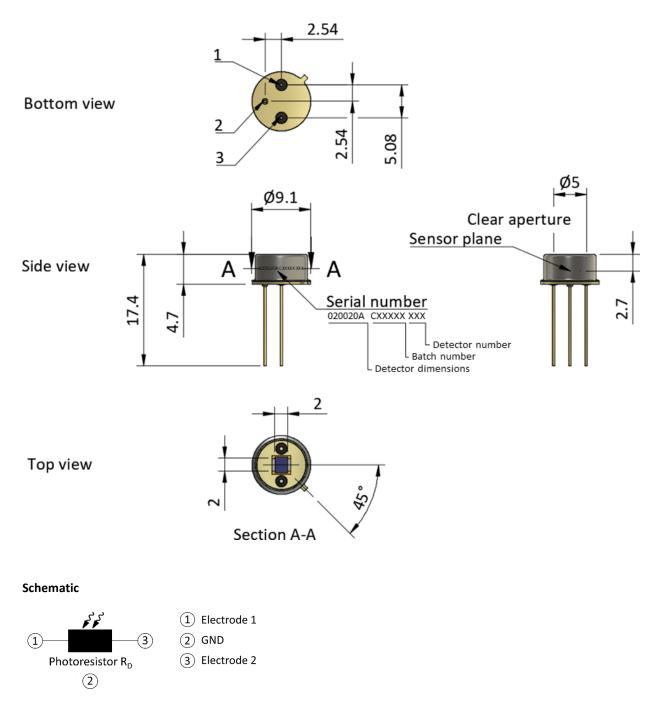
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TO5 exemplary package outlines (mm)

PbS020020TO5



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TO8 exemplary package outlines (mm)

PbS060060TO8 1 Bottom view 54 5.08 , 2.54 2 Ø10.1 Ø15.25 Clear aperture Sensor plane ∞ 6.8 А Α Side view 4 20.1 Serial number 060060A CXXXXXXXXX Detector number Batch number Detector dimensions 6 Top view ഗ Section A-A Schematic (1) Electrode 1 2 (1)2 Electrode 2 Photoresistor R_D

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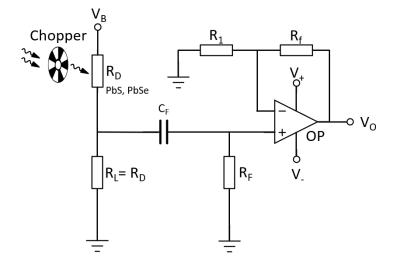
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Exemplary circuit



- V_B: Bias voltage
- V_o: Output voltage
- R_D: Dark resistance of the detector
- R_L: 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.

