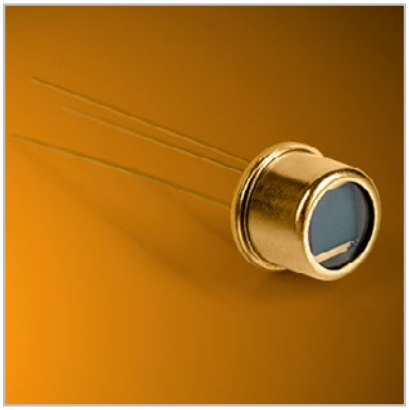
PRELIMINARY

PbS Detectors Uncooled
PB25-Series

Description



The PB25 series is a collection of uncooled photoconductive single element PbS detectors that operate at room temperature with a 20% cut-off of 3.0 µm. This series is widely used in analytic, safety and radiometric applications especially when large active areas are requested.

Features

- Spectral range from 1 to 3.0 µm
- State of the art performance
- 100% test data

Applications

- Pulp and paper industry
- Non-contact temperature measurement
- Spark detection
- Flame control
- Moisture monitoring
- FTNIR

Versions

- TO-can (TO-46, TO-39, TO-8)
- Sapphire window as standard
- Custom versions available

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PbS Detectors Uncooled
PB25-Series

Basic Characteristics, Specifications @ 23°C

Part Number	Element Size [mm]	Aperture Size [mm]	Features	20% Cut-off Wavelength [µm] [b]	Peak Wavelength [µm] [b]	Peak Responsivity [V/W] [ac]		Time Costant [µs] [b]		Optional Package Versions
				Typ.	Typ	Min.	Typ.	Typ.	Max.	
PB25S10104S	1.0 x 1.0	dia. 3.8	TO-46, short cap	3.0	2.4	560000	800000	200	400	TO-39
PB25S20209S	2.0 x 2.0	dia. 6.35	TO-39, short cap	3.0	2.4	280000	400000	200	400	medium cap
PB25S30309S	3.0 x 3.0	dia. 6.35	TO-39, short cap	3.0	2.4	185000	260000	200	400	medium cap
PB25S50508M	5.0 x 5.0	dia. 9.5	TO-8, medium cap	3.0	2.4	110000	160000	200	400	
PB25S60608M	6.0 x 6.0	dia. 9.5	TO-8, medium cap	3.0	2.4	90000	140000	200	400	

Further Versions in progress

Notes:

[a] Measured with 500 K blackbody. Bias is 50 V/mm with 1 MOhm load in series. Chopping frequency is 650 Hz.

[b] Parameter not 100% tested.

[c] Without filter/window

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Electro-Optical Characteristics, Specifications @ 23°C

Part Number	Element Size [mm]	Noise Density (rms) [µV/Hz$^{1/2}$] [a]		Peak D* [cm Hz$^{1/2}$/W] [abc]		Peak D* [cm Hz$^{1/2}$/W] [ac]		Dark Resistance [MOhm/square]		
		@ 90 Hz [b]	@ 650 Hz	@ 90 Hz	@ 90 Hz	@ 650 Hz	@ 650 Hz			
		Typ.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.
PB25S10104S	1.0 x 1.0	4.2	1.4	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5
PB25S20209S	2.0 x 2.0	4.2	1.4	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5
PB25S30309S	3.0 x 3.0	TBD	TBD	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5
PB25S50508M	5.0 x 5.0	TBD	TBD	2.2 E+10	3.0 E+10	7.0 E+10	9.0 E+10	0.2	0.8	2.5
PB25S60608M	6.0 x 6.0	TBD	TBD	2.2 E+10	3.0 E+10	7.0 E+10	9.0 E+10	0.2	0.8	2.5

Notes:

[a] Measured with 500 K blackbody. Bias is 50 V/mm with 1 MOhm load in series. Bandwidth of test setup is 1 Hz.

[b] Parameter not 100% tested.

[c] Without filter/window

Absolute Maximum Ratings

	Min	Max	Units
Storage Temperature	- 55	+ 75	°C
Operating Temperature	- 30	+ 70	°C
Soldering Temperature (for 5 sec)		+ 250 (at pins only)	°C
ESD Damage Threshold (Human Body Model Class 3B*)	8000		V

*ANSI/ESD STN5. 1-2007

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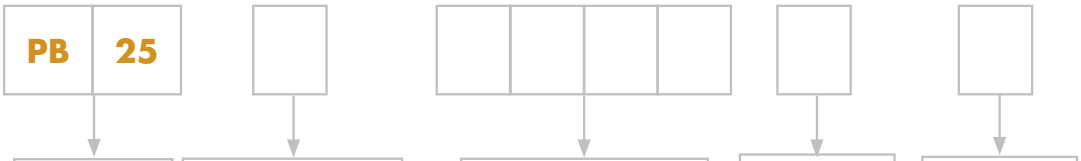
Part Number Designations



Type
uncooled PbS detector

Window	
S	sapphire
G	glass
A	Si 1.5-5 µm
B	Si 1.2-3.5 µm
X	no window
Z	Specials

Element Size [1]	
1010	1.0 x 1.0 mm²
2020	2.0 x 2.0 mm²
3030	3.0 x 3.0 mm²
5050	5.0 x 5.0 mm²

Package	
4	TO-46
6	TO-66
7	TO-37
8	TO-8
9	TO-39

Cap size [2]	
S	short
M	medium
L	long
X	special

[1] for rectangular elements: space between electrodes first

[2] see separate list for details

Package Drawings

All standard packages, dimensions and tolerances are shown in our supplementary datasheet „PbS- / PbSe Detectors - Package Drawings & Cooling Specifications".

Product Changes

LASER COMPONENTS reserves the right to make changes to the product(s) or information contained herein without notice. No liability is assumed as a result of their use or application.

Ordering Information

Products can be ordered directly from LASER COMPONENTS or its representatives. For a complete listing of representatives, visit our website at www.lasercomponents.com

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