

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

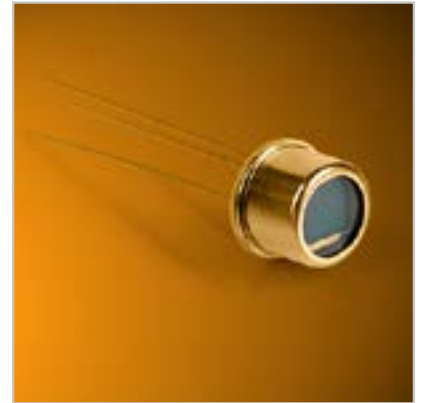
- Spectral range from 1 to 3.0 μm
- State of the art performance
- 100% test data

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



Germany & Other Countries

Laser Components Germany GmbH
Tel: +49 8142 2864 - 0
Fax: +49 8142 2864 - 11
info@lasercomponents.com
www.lasercomponents.com

France

Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom

Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

Nordic Countries

Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA

Laser Components USA, Inc.
Tel: +1 603 821 - 7040
Fax: +1 603 821 - 7041
info@laser-components.com
www.laser-components.com

Basic Characteristics, Specifications @ 23 °C

For all PB25 versions	20% Cut-off Wavelength [μm] ^b	Peak Wavelength [μm] ^b	Time Constant [μs] ^b	
	typ.	typ.	typ.	max.
	2.6	2.4	200	400

Part number	Element Size [mm ²]	Aperture Size [mm]	Features	Peak Responsivity [V/W] ^{ac}		Noise Density (rms)	
				min	typ	90 Hz	650 Hz
						typ	typ
PB25S10104S	1.0 x 1.0	dia. 3.0	TO-46, short cap	560000	800000	4.2	1.4
PB25G10104	1.0 x 1.0	dia. 3.81	TO-46, glass cap	560000	800000	4.2	1.4
PB25S10109S	1.0 x 1.0	dia. 6.35	TO-39, short cap	560000	800000	4.2	1.4
PB25G10109	1.0 x 1.0	dia. 6.60	TO-39, glass cap	560000	800000	4.2	1.4
PB25G10254	1.0 x 2.5	dia. 3.81	TO-46, glass cap	220000 ^{a1}	330000 ^{a1}	TBD	TBD
PB25G10259	1.0 x 2.5	dia. 6.60	TO-39, glass cap	220000 ^{a1}	330000 ^{a1}	TBD	TBD
PB25S20209S	2.0 x 2.0	dia. 6.35	TO-39, short cap	280000	400000	4.2	1.4
PB25G20209	2.0 x 2.0	dia. 6.60	TO-39, glass cap	280000	400000	4.2	1.4
PB25S30309S	3.0 x 3.0	dia. 6.35	TO-39, short cap	185000	260000	TBD	TBD
PB25G3030	3.0 x 3.0	dia. 6.60	TO-39, glass cap	185000	260000	TBD	TBD
PB25G20509	2.0 x 5.0	dia. 6.60	TO-39, glass cap	80000 ^{a1}	12000 ^{a1}	TBD	TBD
PB25G38389	3.8 x 3.8	dia. 6.60	TO-39, glass cap	115000	172000	TBD	TBD
PB25S50508M	5.0 x 5.0	dia. 9.53	TO-8, medium cap	110000	160000	TBD	TBD
PB25S60608M	6.0 x 6.0	dia. 9.53	TO-8, medium cap	90000	140000	TBD	TBD
PB25G20209X-Si	2.0 x 2.0	dia. 6.35	Si-Sandwich	280000	400000	4.2	1.4

Notes:

- ^a Measured with 500 K blackbody. Bias is 50 V/mm with 1 MOhm load series. Bandwidth of test setup is 1 Hz.
- ^{a1} 0.5 MOhm load series
- ^b Parameter not 100% tested.
- ^c without filter / window

Electro-Optical Characteristics, Specifications @ 23 °C

Part number	Peak D* ^{abc}		Peak D* ^{ac}		Dark Resistance [MΩm/square]		
	90 Hz	90 Hz	650 Hz	650 Hz	min	typ	max
	min	typ	min	typ			
PB25S10104S	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5
PB25G10104	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5
PB25S10109S	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5
PB25G10109	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5
PB25G10254	2.5 E+10 ^{a1}	3.5 E+10 ^{a1}	8.0 E+10 ^{a1}	1.1 E+11 ^{a1}	0.1	0.32	1.0
PB25G10259	2.5 E+10 ^{a1}	3.5 E+10 ^{a1}	8.0 E+10 ^{a1}	1.1 E+11 ^{a1}	0.1	0.32	1.0
PB25S20209S	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5
PB25G20209	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5
PB25S30309S	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5
PB25G3030	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5
PB25G20509	2.5 E+10 ^{a1}	3.5 E+10 ^{a1}	8.0 E+10 ^{a1}	1.1 E+11 ^{a1}	0.1	0.32	1.0
PB25G38389	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5
PB25S50508M	2.2 E+10	3.0 E+10	7.0 E+10	9.0 E+10	0.2	0.8	2.5
PB25S60608M	2.2 E+10	3.0 E+10	7.0 E+10	9.0 E+10	0.2	0.8	2.5
PB25G20209X-Si	2.5 E+10	3.5 E+10	8.0 E+10	1.1 E+11	0.25	0.8	2.5

Notes:

- ^a Measured with 500 K blackbody. Bias is 50 V/mm with 1 MΩ load series. Bandwidth of test setup is 1 Hz.
- ^{a1} 0.5 MΩ load series
- ^b Parameter not 100% tested.
- ^c without filter / window

Absolute Maximum Ratings

	Min	Max	Units
Storage temperature	- 70	+ 85 ^a	°C
Operating temperature	- 65	+ 65	°C
Soldering temperature (for 5 sec)		+ 250 (at pins only)	°C
ESD damage threshold (Human body model class 3B*)	8000		V

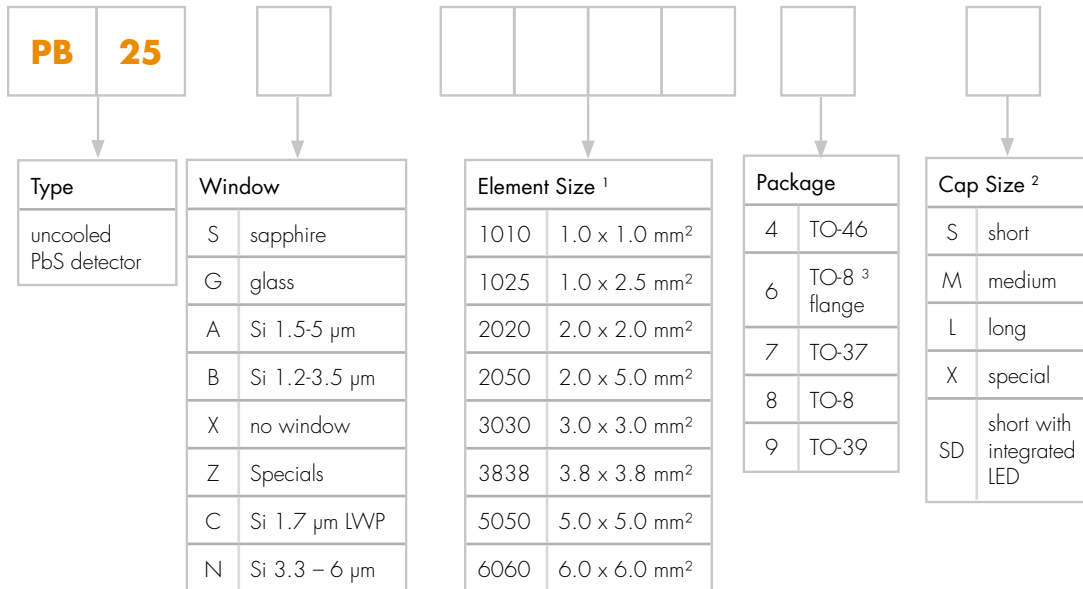
* ANSI/ESD STN5. 1-2007

^a Operation for short-term up to storage temperature may not damage the device. It could take longer time to recover to normal operation.

Handling

ESD sensitive device. High electrostatic discharge can damage or degrade the device.
Use proper ESD handling precautions.

Part Number Designations



¹ for rectangular elements: space between electrodes first

² see separate list for detail

³ TO-8 with copper flange (equal TO-66)

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

Germany & Other Countries

Laser Components Germany GmbH
Tel: +49 8142 2864 - 0
Fax: +49 8142 2864 - 11
info@lasercomponents.com
www.lasercomponents.com

France

Laser Components S.A.S.
Tel: +33 1 39 59 52 25
Fax: +33 1 39 59 53 50
info@lasercomponents.fr
www.lasercomponents.fr

United Kingdom

Laser Components (UK) Ltd.
Tel: +44 1245 491 499
Fax: +44 1245 491 801
info@lasercomponents.co.uk
www.lasercomponents.co.uk

Nordic Countries

Laser Components Nordic AB
Tel: +46 31 703 71 73
Fax: +46 31 703 71 01
info@lasercomponents.se
www.lasercomponents.se

USA

Laser Components USA, Inc.
Tel: +1 603 821 - 7040
Fax: +1 603 821 - 7041
info@laser-components.com
www.laser-components.com