

High Linearity Position Sensing Detector

Part Number: S1-0032

Description: 1L5UV_CP2

The SiTek 1L5UV PSD is optimised for use in the UV wavelength region, 200 to 400nm. As SiTek standard PSDs it works according to the Lateral Effect Photodiode principle. It is an analogue device and therefore displays excellent position resolution. The resolution is determined by the system signal-to-noise ratio.

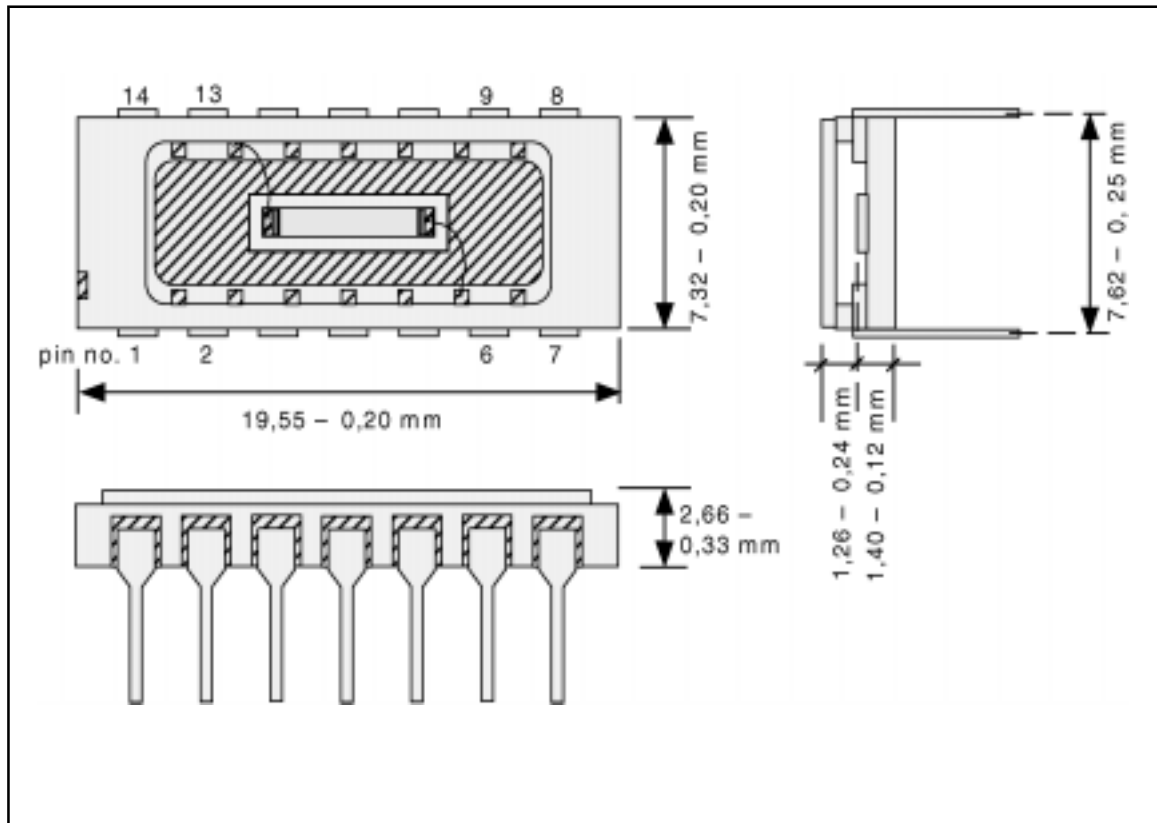
The 1L5UV is operated in the biased mode. Typical applications include: distance and height measurement, alignment, position and motion measurements and vibration studies.



Parameter	Symbol	Min.	Typ.	Max.	Unit
Active area			5 x 1		mm ²
Position non-linearity			1	2	%(±)
Detector resistance	R _{det}	40	50	80	k
Dark current	I _d		4	20	nA
Noise current	I _{noise}		0,4	1,0	pA/ Hz
Responsivity			0,5		A/W
Capacitance	C _j		5	6	pF
Rise time (10-90%)	t _r		50	80	ns
Reverse voltage (bias)	V _r	5	15	30	V
Thermal drift			20	100	ppm/°C
Maximum ratings					
Reverse voltage	V _{R-max}			30	V
Operating temperature	T _{oper}			70	°C
Storage temperature	T _{stg}			100	°C

Test conditions: Room temperature 23°C. Reverse voltage 15 V. Light-source wavelength 940 nm.
Position non-linearity and thermal drift are valid within 80% of the detector length.

Package: 14-pin ceramic DIL-package, 19,6 x 7,3 mm², with protective quartz window.



1L5UV_CP2

Pin configuration:	1	Bias	Note:	Outputs Y1, Y2 are interchangeable.
	6	Output Y1		The anodes Y1, Y2 must be
	13	Output Y2		at negative potential compared
	2-5,7-12 & 14	N/C		to the cathode.

Application information:

The inherent resolution of a PSD is very good. It is proven to be better than one part in one million. The performance of a PSD based measurement system is thus limited by its mechanical, optical and electrical components.

To get the best performance you have to consider:

- Modulated light source. Modulation makes it possible to avoid influence of other light sources.
- Stable temperature.
- Mechanical stable system.
- High optical resolution.
- High resolution in division of the sum- and difference signals.

Resolution, optical sensitivity and measurement speed are related to each other in the PSD measurement system and you have to make the proper choices and tradeoffs for your system. Further information as schematics of a recommended hook-up is obtainable from your local distributor or from SiTek Electro Optics AB.

SiTek PSD Position Measurement electronic boards:

For most position measurement applications the SiTek PM-kit offers a complete and easy-to use solution. It is a series of general purpose, high performance, low-noise electronic boards designed for SiTek PSD. You can easily build your own measurement system using our PM-kit. Further information is obtainable from your local distributor or from SiTek Electro Optics AB.

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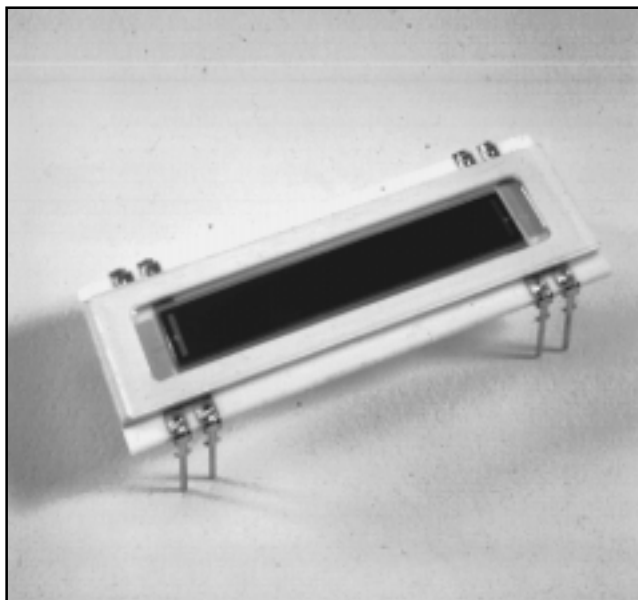
High Linearity Position Sensing Detector

Part Number: S1-0034

Description: 1L30UV_SU2

The SiTek 1L30UV is optimised for use in the UV wave length region 200, to 400nm. As SiTek standard PSDs it works according to the Lateral Effect Photodiode principle. It is an analogue device and displays excellent position resolution. The resolution is determined by the system signal-to-noise ratio.

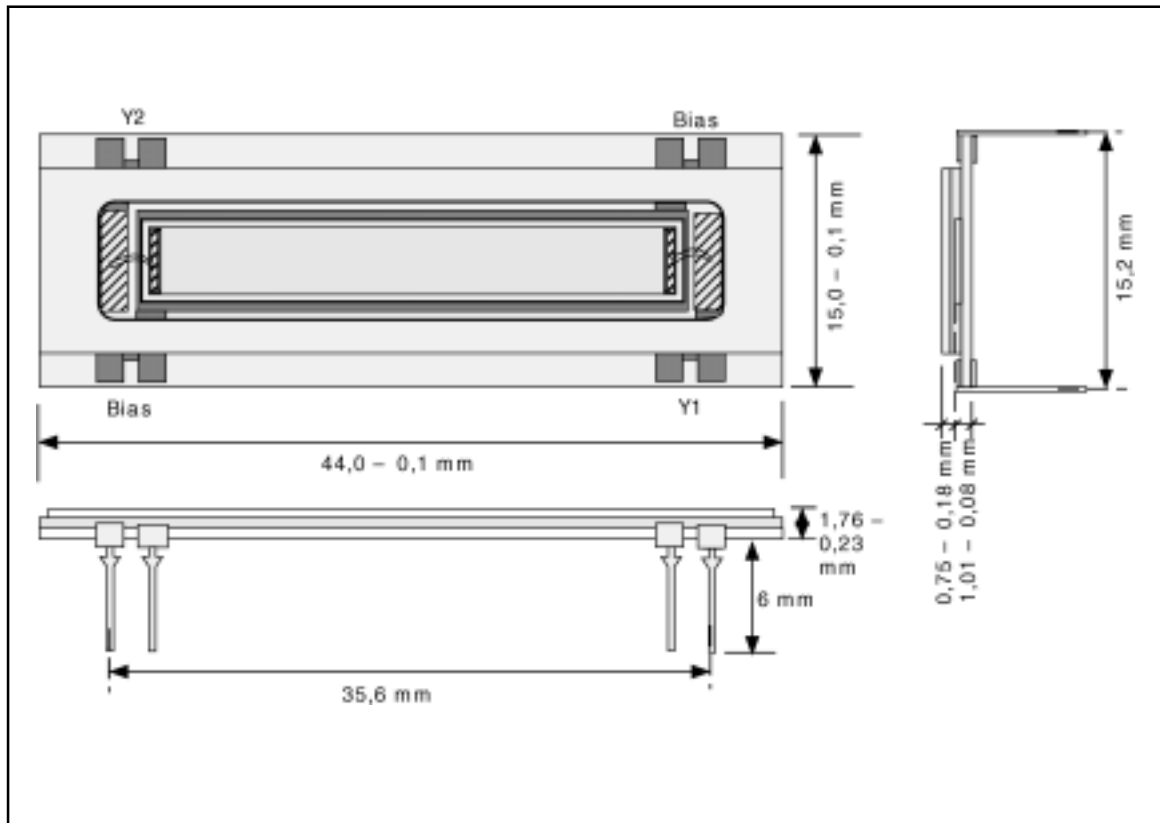
The 1L30UV is operated in the biased mode. Typical applications include: distance and height measurement, alignment, position and motion measurements and vibration studies.



Parameter	Symbol	Min.	Typ.	Max.	Unit
Active area			30 x 4		mm ²
Position non-linearity			1	2	%(±)
Detector resistance	R _{det}	40	50	80	k Ω
Dark current	I _d		150	1000	nA
Noise current	I _{noise}		0,5	1,0	pA/√Hz
Responsivity	r		0,5		A/W
Capacitance	C _j		90	110	pF
Rise time (10-90%)	t _r		1,0	1,8	µs
Reverse voltage (bias)	V _r	5	15	30	V
Thermal drift			20	100	ppm/°C
Maximum ratings					
Reverse voltage	V _{R-max}			30	V
Operating temperature	T _{oper}			70	°C
Storage temperature	T _{stg}			100	°C

Test conditions: Room temperature 23°C. Reverse voltage 15 V. Light-source wavelength 940 nm.
Position non-linearity and thermal drift are valid within 80% of the detector length.

Package: Ceramic substrate, 44 x 15 mm, with solderable pins and protective quartz window.



1L30UV_SU2

Pin configuration: See drawing

Note: Outputs Y1, Y2 are interchangeable.
The anodes Y1, Y2 must be at negative potential compared to the cathode.

Application information:

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To get the best performance you have to consider:

- Modulated light source. Modulation makes it possible to avoid influence of other light sources.
- Stable temperature.
- Mechanical stable system.
- High optical resolution.
- High resolution in division of the sum- and difference signals.

Resolution, optical sensitivity and measurement speed are related to each other in the PSD measurement system and you have to make the proper choices and tradeoffs for your system. Further information as schematics of a recommended hook-up is obtainable from your local distributor or from SiTek Electro Optics AB.

SiTek PSD Position Measurement electronic boards:

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High Linearity Position Sensing Detector

Part Number: S1-0072
Description: 1L2,5UV_CP2

The SiTek 1L2,5UV PSD is optimised for use in the UV wavelength region 200, to 400nm. As SiTek standard PSDs it works according to the Lateral Effect Photodiode principle. It is an analogue device and therefore displays excellent position resolution. The resolution is determined by the system signal-to-noise ratio.

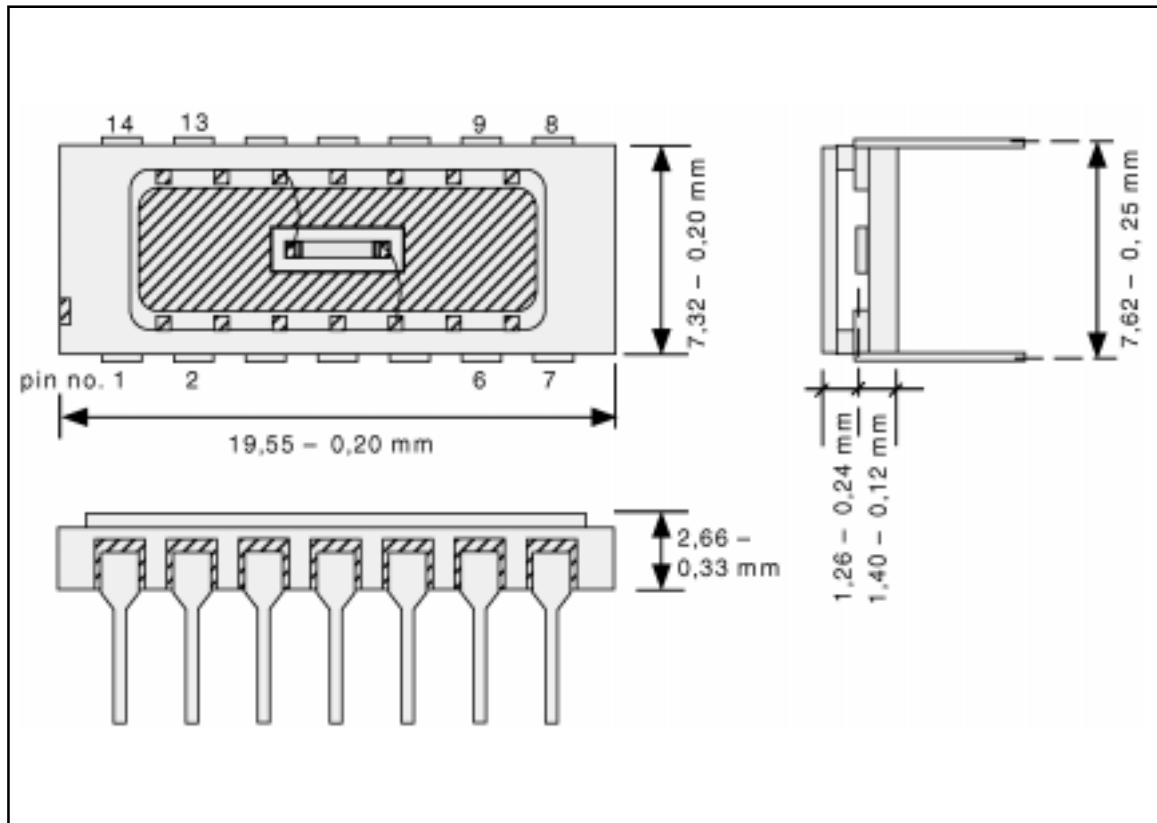
The 1L2,5UV is operated in the biased mode. Typical applications include: distance and height measurement, alignment, position and motion measurements and vibration studies.



Parameter	Symbol	Min.	Typ.	Max.	Unit
Active area			2,5 x 0,6		mm ²
Position non-linearity			1	2	%(±)
Detector resistance	R _{det}	40	50	80	k Ω
Dark current	I _d		2	10	nA
Noise current	I _{noise}		0,4	1,0	pA/√Hz
Responsivity	r		0,5		A/W
Capacitance	C _j		1,6	2	pF
Rise time (10-90%)	t _r		30	50	ns
Reverse voltage (bias)	V _r	5	15	30	V
Thermal drift			20	100	ppm/°C
Maximum ratings					
Reverse voltage	V _{R-max}			30	V
Operating temperature	T _{oper}			70	°C
Storage temperature	T _{stg}			100	°C

Test conditions: Room temperature 23°C. Reverse voltage 15 V. Light-source wavelength 940 nm.
Position non-linearity and thermal drift are valid within 80% of the detector length.

Package: 14-pin ceramic DIL-package, 19,6 x 7,3 mm², with protective quartz window.



1L2,5UV_CP2

Pin configuration:	1	Bias	Note:	Outputs Y1, Y2 are interchangeable.
	5	Output Y1		The anodes Y1, Y2 must be
	12	Output Y2		at negative potential compared
	2-4, 6-11 & 13-14	N/C		to the cathode.

Application information:

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To get the best performance you have to consider:

- Modulated light source. Modulation makes it possible to avoid influence of other light sources.
- Stable temperature.
- Mechanical stable system.
- High optical resolution.
- High resolution in division of the sum- and difference signals.

Resolution, optical sensitivity and measurement speed are related to each other in the PSD measurement system and you have to make the proper choices and tradeoffs for your system. Further information as schematics of a recommended hook-up is obtainable from your local distributor or from SiTek Electro Optics AB.

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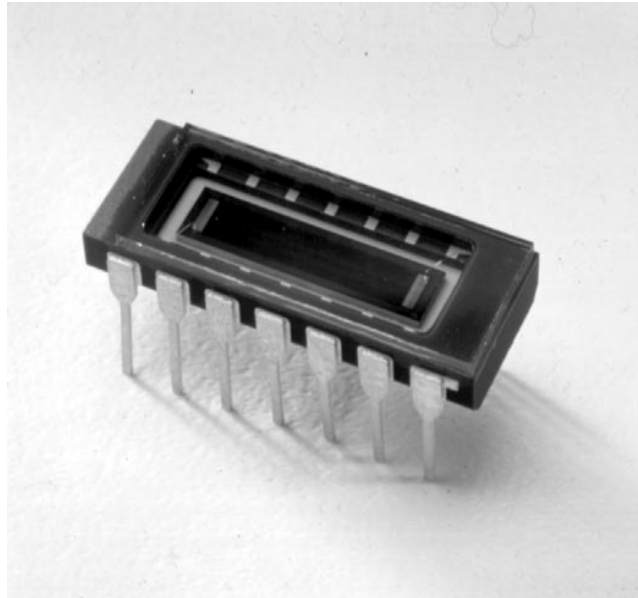
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High Linearity Position Sensing Detector

Part Number: S1-0073
Description: 1L10UV_CP2

The SiTek 1L10UV PSD is optimised for use in the UV wave length region 200, to 400nm. As SiTek standard PSDs it works according to the Lateral Effect Photodiode principle. It is an analogue device and displays excellent position resolution. The resolution is determined by the system signal-to-noise ratio.

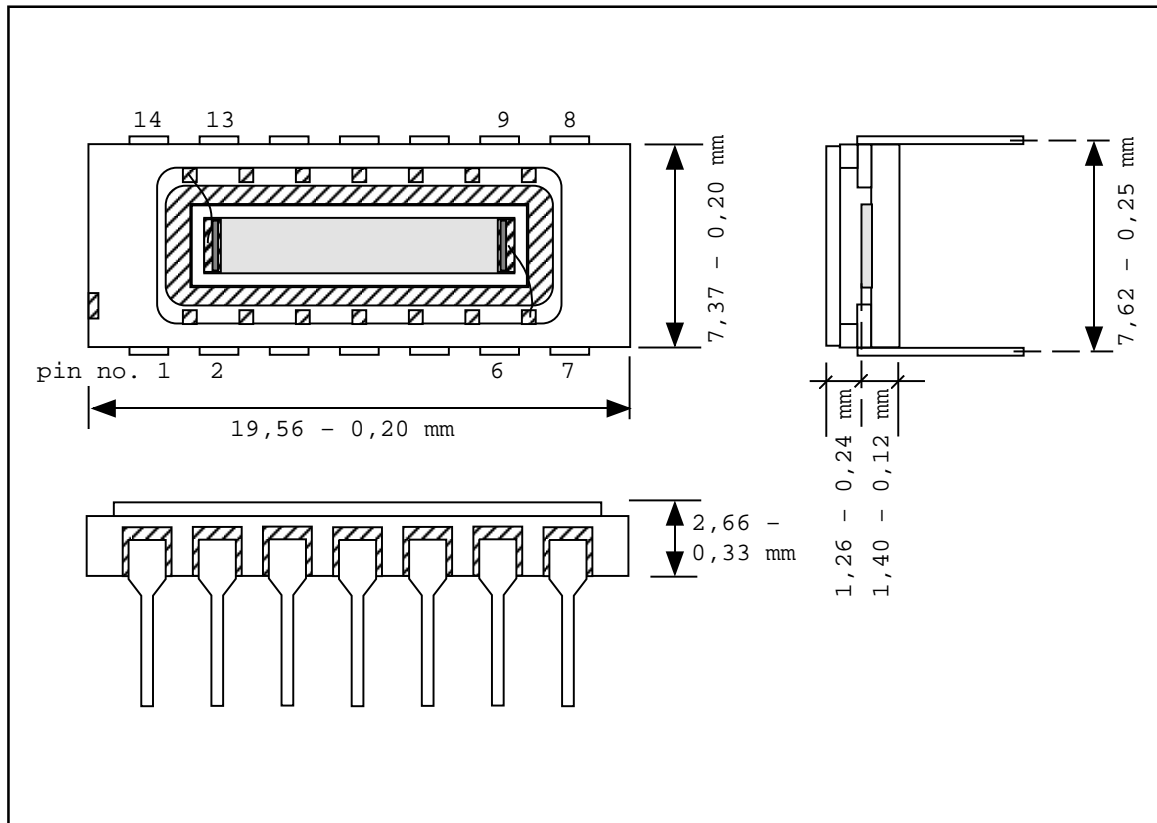
The 1L10UV is operated in the biased mode. Typical applications include: distance and height measurement, alignment, position and motion measurements and vibration studies.



Parameter	Symbol	Min.	Typ.	Max.	Unit
Active area			10 x 2		mm ²
Position non-linearity			1	2	%(±)
Detector resistance	R _{det}	40	50	80	k Ω
Dark current	I _d		8	50	nA
Noise current	I _{noise}		0,4	1,0	pA/√Hz
Responsivity	r		0,5		A/W
Capacitance	C _j		15	20	pF
Rise time (10-90%)	t _r		200	400	ns
Reverse voltage (bias)	V _r	5	15	30	V
Thermal drift			20	100	ppm/°C
Maximum ratings					
Reverse voltage	V _{R-max}			30	V
Operating temperature	T _{oper}			70	°C
Storage temperature	T _{stg}			100	°C

Test conditions: Room temperature 23°C. Reverse voltage 15 V. Light-source wavelength 940 nm.
Position non-linearity and thermal drift are valid within 80% of the detector length.

Package: 14-pin ceramic DIL-package, 19,6 x 7,3 mm², with protective quartz window.



1L10UV_CP2

Pin configuration:	1	Bias	Note:	Outputs Y1, Y2 are interchangeable.
	7	Output Y1		The anodes Y1, Y2 must be
	14	Output Y2		at negative potential compared
	2-6 & 8-13	N/C		to the cathode.

Application information:

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- High optical resolution.
- High resolution in division of the sum- and difference signals.

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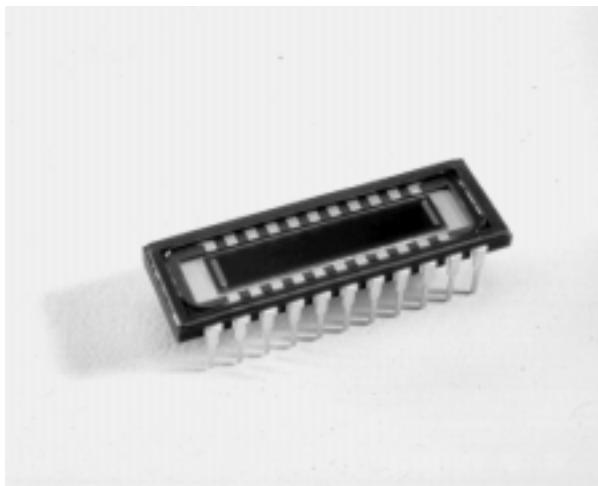
High Linearity Position Sensing Detector

Part Number: S1-0074

Description: 1L20UV_CP3

The SiTek 1L20UV is optimised for use in the UV wave length region 200, to 400nm. As SiTek's standard PSDs it works according to the Lateral Effect Photodiode principle. It is an analogue device and therefore displays excellent position resolution. The resolution is determined by the system signal-to-noise ratio.

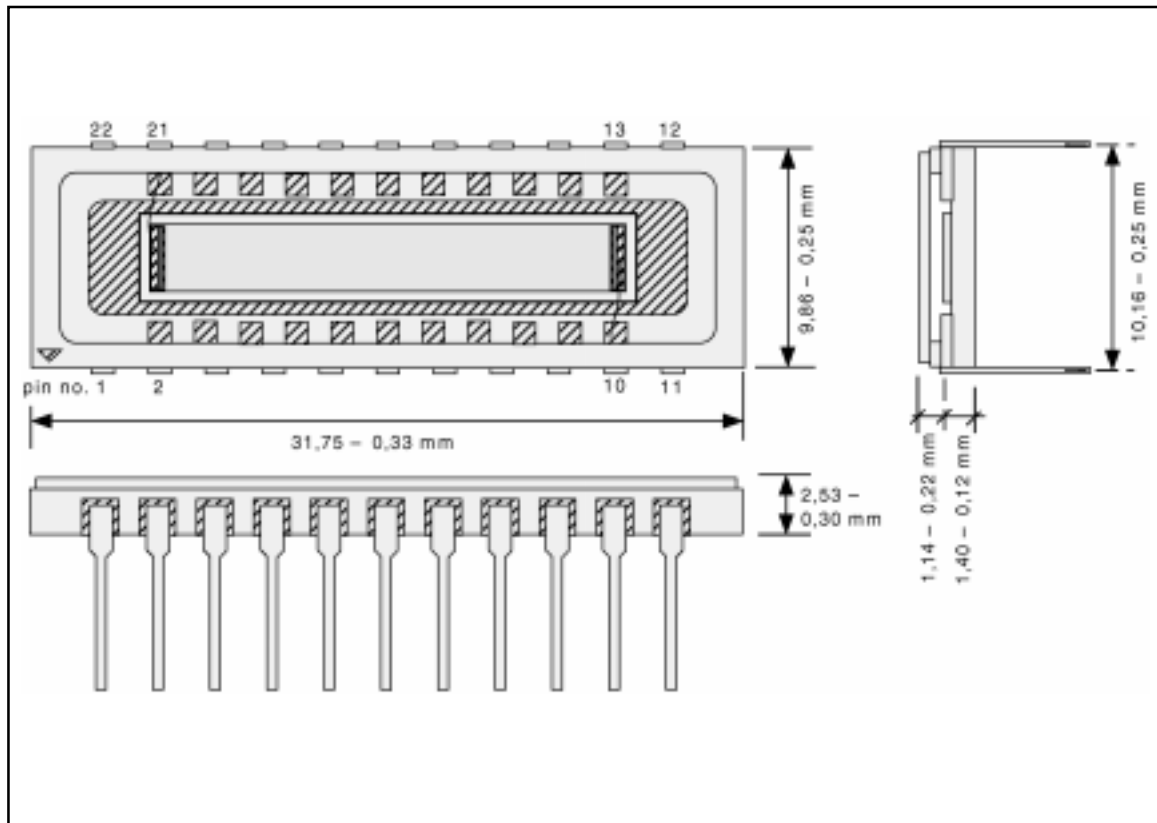
The 1L20UV is operated in the biased mode. Typical applications include: distance and height measurement, alignment, position and motion measurements and vibration studies.



Parameter	Symbol	Min.	Typ.	Max.	Unit
Active area			20 x 3		mm ²
Position non-linearity			1	2	%(±)
Detector resistance	R _{det}	40	50	80	k Ω
Dark current	I _d		50	250	nA
Noise current	I _{noise}		0,5	1,0	pA/√Hz
Responsivity	r		0,5		A/W
Capacitance	C _j		45	55	pF
Rise time (10-90%)	t _r		0,5	1,0	μs
Reverse voltage (bias)	V _r	5	15	30	V
Thermal drift			20	100	ppm/°C
Maximum ratings					
Reverse voltage	V _{R-max}			30	V
Operating temperature	T _{oper}			70	°C
Storage temperature	T _{stg}			100	°C

Test conditions: Room temperature 23°C. Reverse voltage 15 V. Light-source wavelength 940 nm.
Position non-linearity and thermal drift are valid within 80% of the detector length.

Package: 22-pin ceramic DIL-package, 31,8 x 9,9 mm², with protective quartz window.



1L20UV_CP3

Pin configuration:	12	Bias	Note:	Outputs Y1, Y2 are interchangeable.
	11	Output Y1		The anodes Y1, Y2 must be
	22	Output Y2		at negative potential compared
	1-10 & 13-21	N/C		to the cathode.

Application information:

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- High optical resolution.
- High resolution in division of the sum- and difference signals.

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