

PSD Array

High Linearity Position Sensing Detector Array

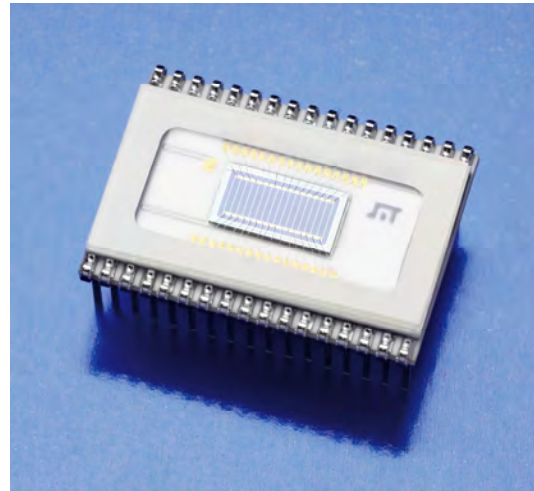
Part number: SA-0039

Description: 1LA16-2,5_SU89

The SiTek 1LA16-2,5_SU89 is a PSD array with 16 parallel 1-dimensional PSDs placed on the same chip. This enables simultaneous position read-out from the 16 segments and high speed 3D contour measurements with low cross talk between the segments. Each segment has the same high linearity and high speed as SiTek's standard 1-dimensional PSDs.

The PSD array has SiTek's unique built-in stray light elimination, a patented design which eliminates the decrease in speed and linearity due to stray light.

The PSD array can be used together with either a line laser or multiple laser beams.



Mechanical specification

Parameter	Value	Unit
Number of segments	16	
Active area of each segment	2,5 x 0,39	mm ²
Gap between segments	10	μm

Electrical specification

Parameter	Symbol	Min.	Typ.	Max.	Unit
Position non-linearity			0,1	0,2	%
Detector resistance	R_{det}	15	25	35	kΩ
Leakage current	I_d		2	10	nA
Noise current	I_{noise}		0,8	1,1	pA/√Hz
Responsivity	r		0,63		A/W
Capacitance	C_i		4	4,4	pF
Rise time (10% - 90%)	t_r		70	100	ns
Cross talk			0,5	1,0	%
Bias voltage (reverse)	V_R	5	15	20	V
Thermal drift			20	100	ppm/°C

Absolute maximum ratings

Parameter	Symbol	Value	Unit
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, Bias voltage 15 V, Light source wavelength 940 nm. Position non-linearity and thermal drift is valid within 80 % of the detector length.

Package: 34 pin DIP ceramic substrate, 21,6 x 15,0 mm², with protective window.

