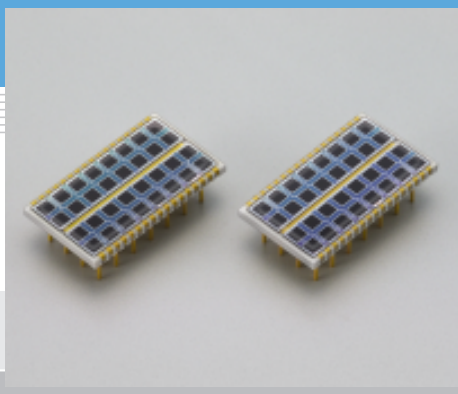


# Si APD array

## S8550

4 × 8 element APD array with low noise and enhanced short-wavelength sensitivity



S8550 is an APD (avalanche photodiode) array designed for short wavelength detection, featuring low noise and low terminal capacitance. S8550 also offers uniform gain and small cross-talk between each element.

### Features

- High sensitivity and low noise in short wavelength region
- Low terminal capacitance
- Optimized for blue light detection
- Uniform gain and low cross-talk variation between each element

### Applications

- Low-light-level photometry in the visible range
- Detector systems combined with scintillator

### ■ General ratings

Parameter	Rating	Unit
Element size	1.6 × 1.6 (× 32 elements)	mm
Element pitch	2.3	mm
Package	Ceramic	-
Window material	Epoxy resin	-

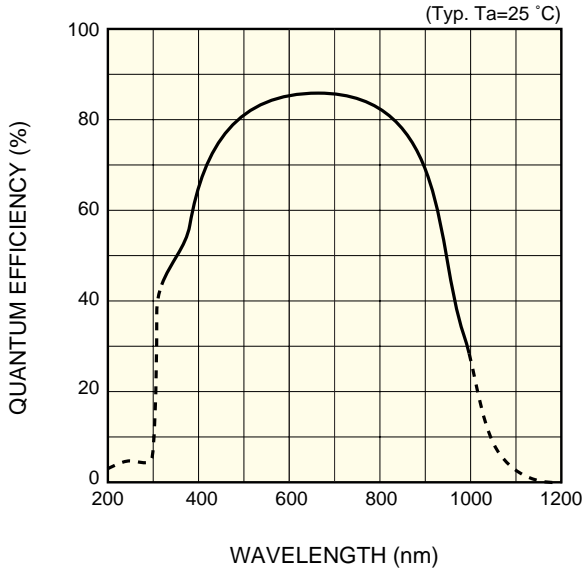
### ■ Absolute maximum ratings

Parameter	Symbol	Value	Unit
Operating temperature	T <sub>opr</sub>	-20 to +60	°C
Storage temperature	T <sub>stg</sub>	-20 to +80	°C

### ■ Electrical and optical characteristics (T<sub>a</sub>=25 °C)

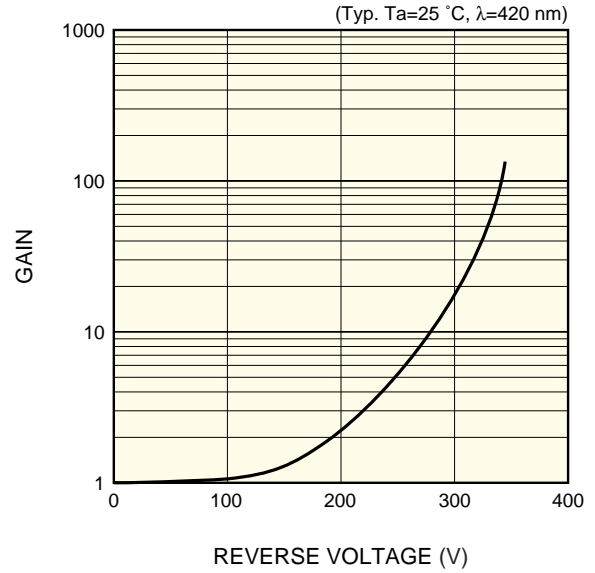
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	$\lambda$		-	320 to 1000	-	nm
Peak sensitivity wavelength	$\lambda_p$	M=50	-	600	-	nm
Quantum efficiency	QE	$\lambda=420$ nm	60	70	-	%
Breakdown voltage	V <sub>BR</sub>		-	400	500	V
Dark current	I <sub>D</sub>	per 1 element, M=50	-	10	50	nA
Terminal capacitance	C <sub>t</sub>	per 1 element, M=50, f=10 kHz	-	10	-	pF
Gain	M		-	50	-	-

■ Quantum efficiency vs. wavelength



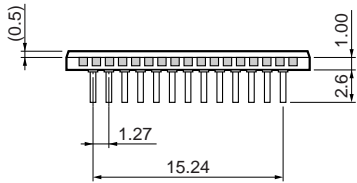
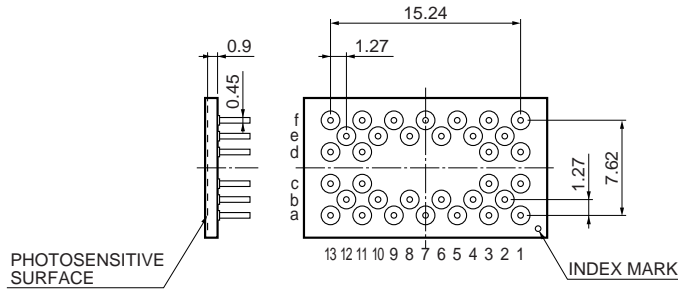
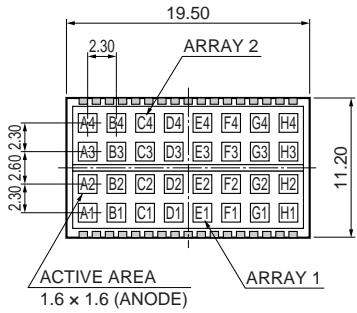
KAPDB0069EA

■ Gain vs. reverse voltage



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■ Dimensional outline (unit: mm)



Pin No.	Element No.	Pin No.	Element No.	Pin No.	Element No.	Pin No.	Element No.
1a	CATHODE 1	6b	D1	3d	C3	1f	A4
3a	B1	8b	E1	11d	G3	3f	B4
5a	C2	10b	F1	13d	H4	5f	D3
7a	D2	12b	G2	2e	B3	7f	E3
9a	E2	1c	A1	4e	C4	9f	F3
11a	G1	3c	B2	6e	D4	11f	G4
13a	H1	11c	F2	8e	E4	13f	CATHODE 2
2b	A2	13c	H2	10e	F4		
4b	C1	1d	A3	12e	H3		

CATHODE 1: CATHODE OF ARRAY 1  
CATHODE 2: CATHODE OF ARRAY 2

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