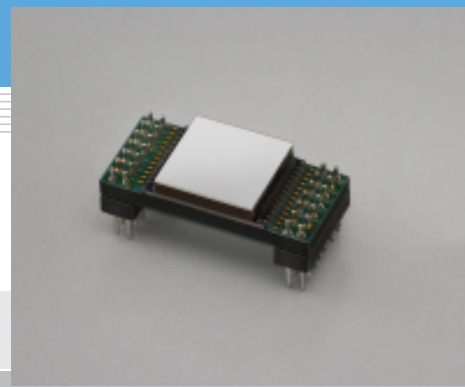


Si photodiode array

S7978

5 × 5 element array for X-ray detector



Features

- High reliability photodiode with ceramic scintillator
High X-ray sensitivity: 1.8 times higher than CWO scintillator
Less afterglow: <0.1 %/3 ms, <0.01 %/30 ms
No deliquescence
- 5 × 5 element photodiode array
- Number of channels can be increased by connecting several S7978 together.

Applications

- X-ray analysis, X-ray detection

■ Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Value	Unit
Reverse voltage	V _R Max.	5	V
Operating temperature	T _{opr}	-10 to +60	°C
Storage temperature	T _{stg}	-20 to +70	°C

■ Electrical and optical characteristics (Ta=25 °C, per 1 element, without scintillator)

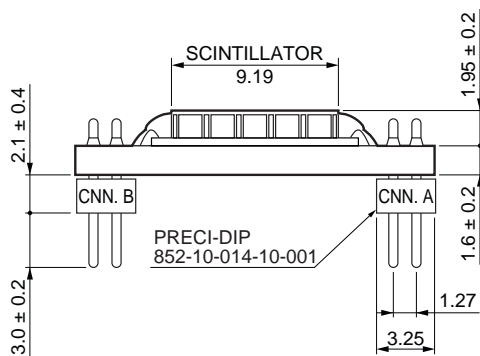
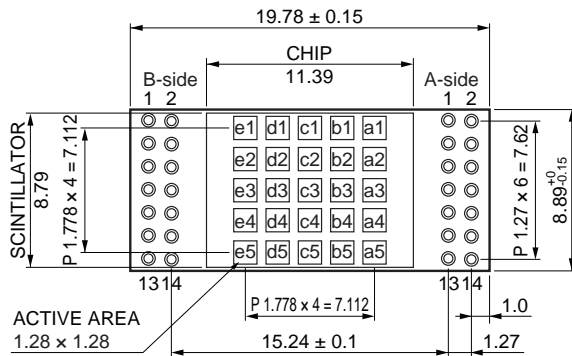
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ	With resin	-	220 to 1000	-	nm
Peak sensitivity wavelength	λ_p		-	720	-	μ m
Photo sensitivity	S	$\lambda=500$ nm, with resin	-	0.36	-	A/W
Dark current	I _D	V _R =10 mV	-	0.1	10	pA
Terminal capacitance	C _t	V _R =5 V, f=10 kHz	-	30	50	pF

■ X-ray sensitivity (reference value, per 1 element, tube current: 1.0 mA, aluminum filter: t=6 mm, distance=830 mm)

X-ray tube voltage	Typ.	Unit
120 kV	2.1	nA

Note) Depends on equipment and measurement conditions.

Dimensional outline (unit: mm)



B-side		A-side	
Pin No.	Element No.	Pin No.	Element No.
1	Cathode	1	Cathode
2	e1	2	Shield
3	d1	3	b1
4	c1	4	a1
5	e2	5	b2
6	d2	6	a2
7	c2	7	a3
8	e3	8	b3
9	d3	9	b4
10	c3	10	c4
11	e4	11	c5
12	d4	12	a4
13	d5	13	b5
14	e5	14	a5

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