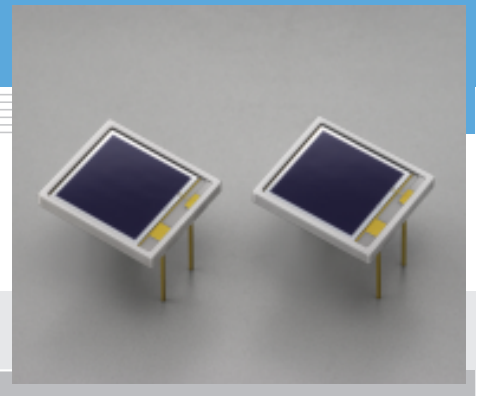


# Si PIN photodiode

## S8650

Flat surface ideal for bonding to scintillator



S8650 Si PIN photodiode has an epoxy coating window processed to have a flat surface (flatness:  $\pm 5 \mu\text{m}$ ). When bonded to a scintillator, the flat surface allows highly tight coupling to the scintillator so bubbles are unlikely to penetrate in between.

We also accept special orders for machining flat surfaces on other ceramic package products. Feel free to place an order with us.

### Features

- Flat epoxy coating surface ideal for bonding to scintillator  
Flatness:  $\pm 5 \mu\text{m}$
- Active area:  $10 \times 10 \text{ mm}$   
(Other sizes are also available on request.)

### Applications

- Scintillation X-ray detectors
- Calorimeters, etc.

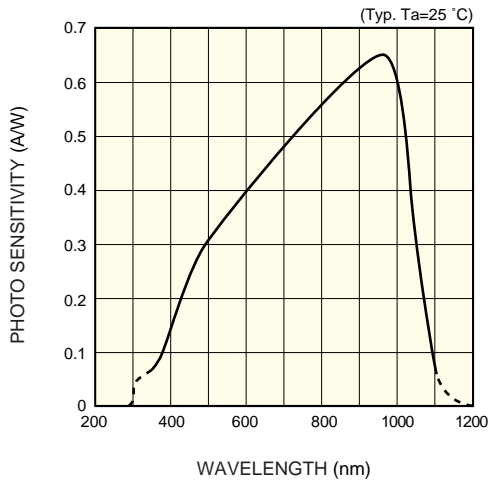
#### ■ Absolute maximum ratings ( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Value	Unit
Reverse voltage	$V_R$ Max.	100	V
Operating temperature	$T_{opr}$	-20 to +60	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-20 to +80	$^\circ\text{C}$

#### ■ Electrical and optical characteristics ( $T_a=25^\circ\text{C}$ )

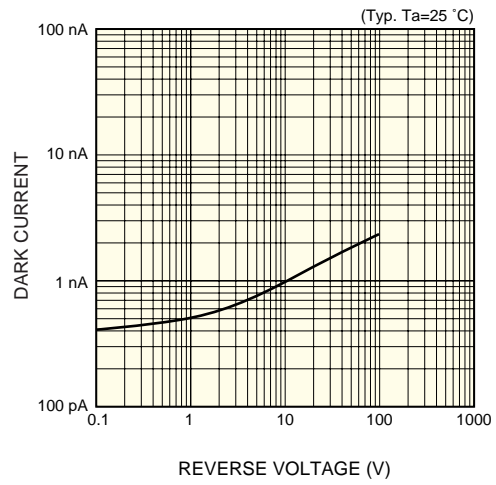
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	$\lambda$		-	320 to 1100	-	nm
Peak sensitivity wavelength	$\lambda_p$		-	960	-	nm
Photo sensitivity	S	$\lambda=\lambda_p$	-	0.66	-	A/W
		BGO: $\lambda=480 \text{ nm}$	-	0.30	-	A/W
		CsI (TI): $\lambda=540 \text{ nm}$	-	0.37	-	A/W
Dark current	$I_D$	$V_R=70 \text{ V}$	-	2	6	nA
Cut-off frequency	$f_c$	$\lambda=780 \text{ nm}$ , $V_R=70 \text{ V}$ $R_L=50 \Omega$ , -3 dB	-	40	-	MHz
Terminal capacitance	$C_t$	$V_R=70 \text{ V}$ , $f=1 \text{ MHz}$	-	40	-	pF
Noise equivalent power	NEP	$V_R=70 \text{ V}$ , $\lambda=\lambda_p$		$3.8 \times 10^{-14}$	-	$\text{W/Hz}^{1/2}$

■ Spectral response



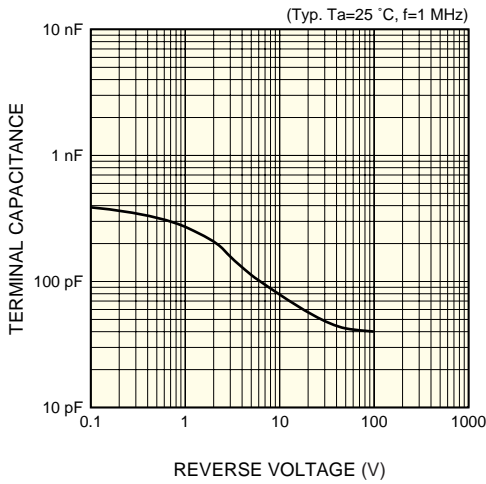
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■ Dark current vs. reverse voltage



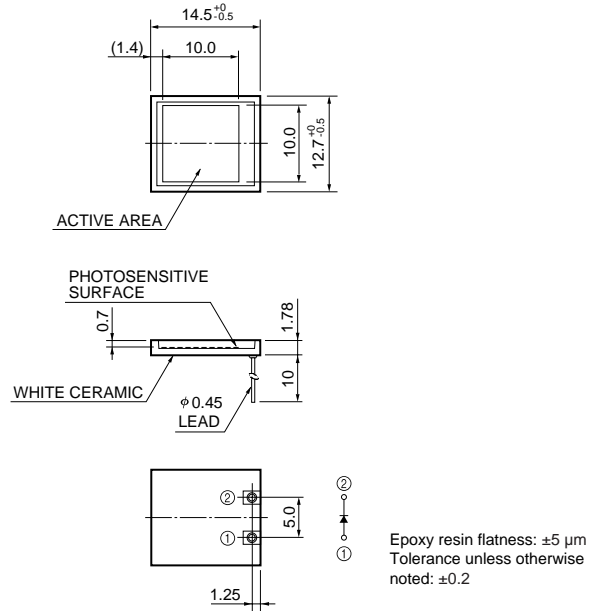
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■ Terminal capacitance vs. reverse voltage



KPINB00256EA

■ Dimensional outline (unit: mm)



KPINA0088EA