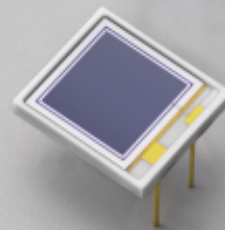


Si PIN photodiode

S3590-08/-09

Large area sensors for scintillation detection



勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

Features

- Higher sensitivity and low dark current than conventional type
- Sensitivity matching with BGO and CsI (TI) scintillators
- High quantum efficiency: QE=85 % ($\lambda=540$ nm)
- Low capacitance
- High-speed response
- High stability
- Good energy resolution

Applications

- Scintillation detectors
- Calorimeters
- Hodoscopes
- TOF counters
- Air shower counters
- Particle detectors, etc.

■ General ratings / Absolute maximum ratings

Type No.	Window material	Active area (mm)	Depletion layer thickness (mm)	Absolute maximum ratings			
				Reverse voltage VR Max.	Power dissipation P (mW)	Operating temperature Topr (°C)	Storage temperature Tstg (°C)
S3590-08	Epoxy resin	10 × 10	0.3	100	100	-20 to +60	-20 to +80
S3590-09	Window-less						

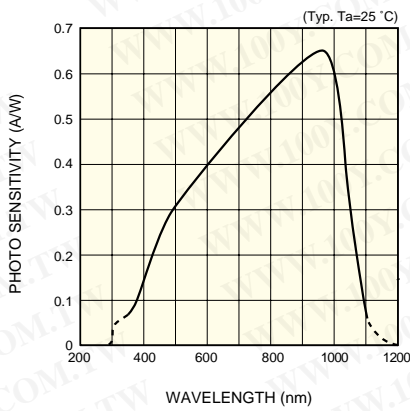
■ Electrical and optical characteristics (Typ. Ta=25 °C, unless otherwise noted)

Type No.	Spectral response range λ (nm)	Peak sensitivity wavelength λ_p (nm)	Photo sensitivity S				Short circuit current Isc 100 lx (μ A)	Dark current ID		Temp. coefficient of ID Tcid (times/°C)	Cut-off Frequency fc (MHz)	Terminal capacitance Ct f= 1MHz (pF)	NEP VR=70 V (W/Hz ^{1/2})
			$\lambda=\lambda_p$ (A/W)	LSO 420 nm (A/W)	BGO 480 nm (A/W)	CsI(Tl) 540 nm (A/W)		Typ.	Max.				
S3590-08	320 to 1100	960	0.66	0.20	0.30	0.36	100	2 *	6 *	1.12	40 *	40 *	3.8×10^{-14}
S3590-09			0.66	0.22	0.33	0.41							

* VR=70 V

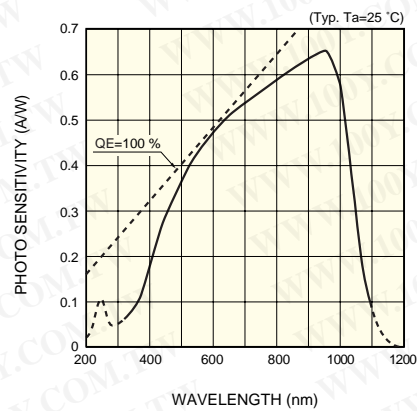
■ Spectral response

S3590-08



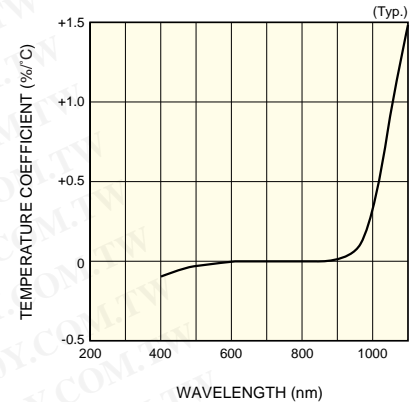
KPINB0231EB

S3590-09



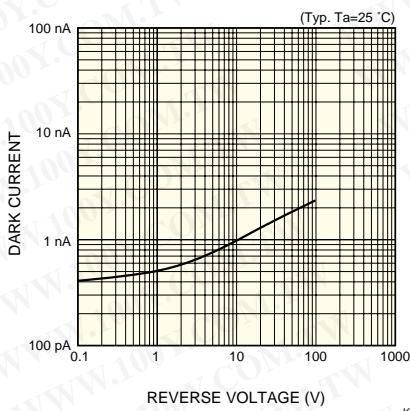
KPINB0263EB

■ Photo sensitivity temperature characteristic



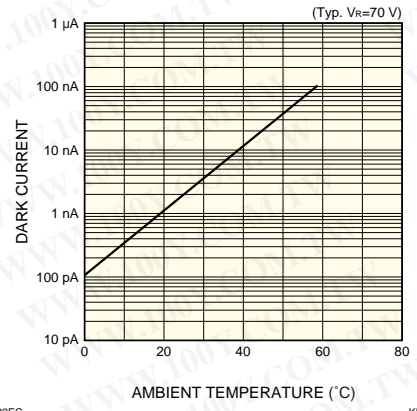
KPINB0093ED

■ Dark current vs. reverse voltage



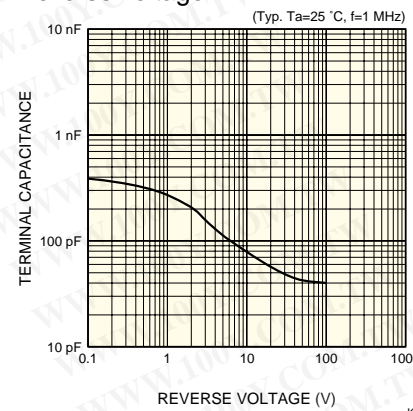
KPINB0232EC

■ Dark current vs. ambient temperature



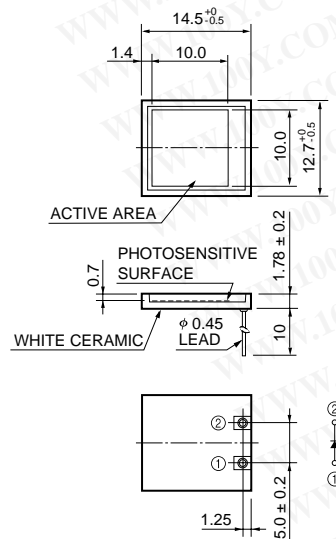
KPINB0233ED

■ Terminal capacitance vs. reverse voltage



KPINB0234EC

■ Dimensional outline (unit: mm)



The coating resin may extend a maximum of 0.1 mm beyond the upper surface of the package.

KPINA0014EF