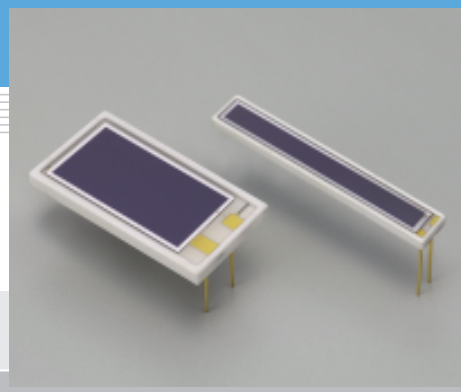


Si PIN photodiode

S2744/S3588-08, -09

Large area sensors for scintillation detection

**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

General ratings / Absolute maximum ratings							
Type No.	Dimensional outline	Window material	Active area (mm)	Absolute maximum ratings			
				Reverse voltage V _R Max.	Power dissipation P (mW)	Operating temperature T _{opr} (°C)	Storage temperature T _{stg} (°C)
S2744-08	①	Epoxy resin	10 × 20	100	100	-20 to +60	-20 to +80
S2744-09		Window-less					
S3588-08	②	Epoxy resin	3 × 30				
S3588-09		Window-less					

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

Type No.	Spectral response range λ (nm)	Peak sensitivity wavelength λ_p (nm)	Photo sensitivity S				Short circuit current I_{sc} 100 lx (μ A)	Dark current I_D $V_R=70$ V		Temp. coefficient of I_D T_{CID} (times/ $^{\circ}$ C)	Cut-off Frequency f_c $V_R=70$ V (MHz)	Terminal capacitance C_t $f=1$ MHz $V_R=70$ V (pF)	NEP $V_R=70$ 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.				
S2744-08	320 to 1100	960	0.66	0.20	0.30	0.36	200	3	10	1.12	25	85	4.7×10^{-14}
S2744-09			0.66	0.22	0.33	0.41							
S3588-08			0.66	0.20	0.30	0.36	90						
S3588-09			0.66	0.22	0.33	0.41							

Spectral response

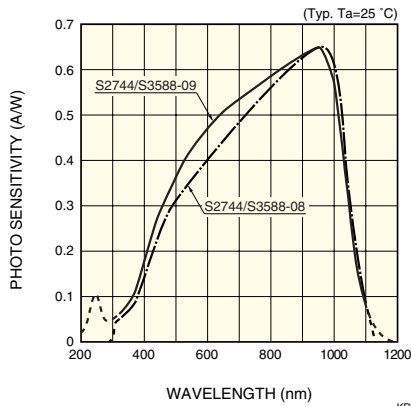
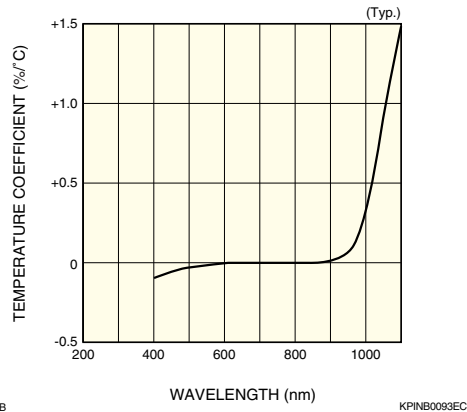
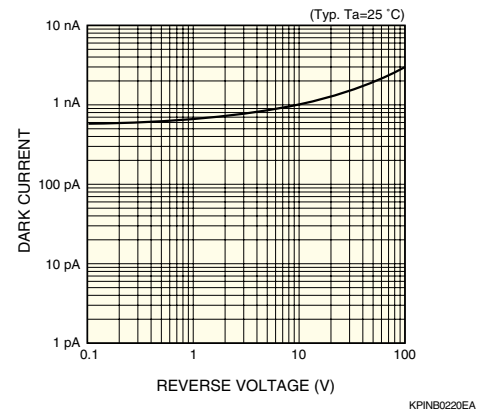


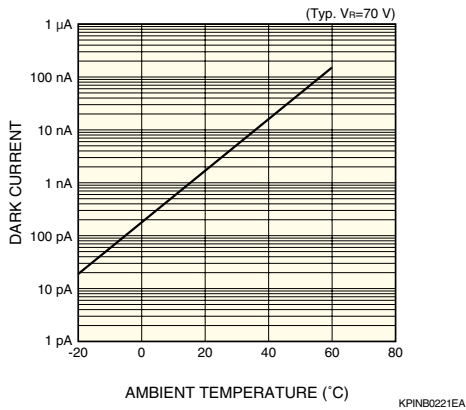
Photo sensitivity temperature characteristic



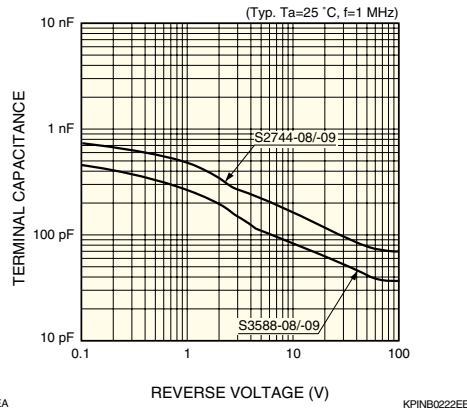
Dark current vs. reverse voltage



Dark current vs. ambient temperature

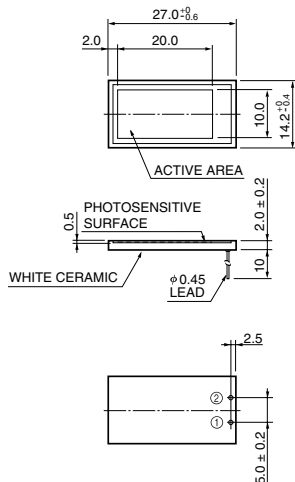


Terminal capacitance vs. reverse voltage



Dimensional outlines (unit: mm)

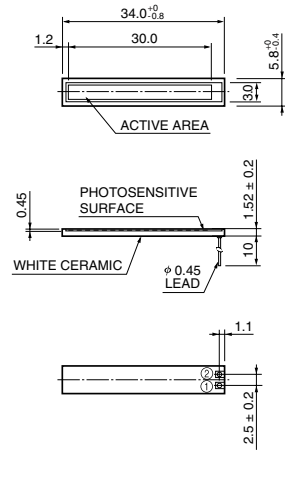
① S2744-08/-09



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

KPINA0039EB

② S3588-08/-09



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

KPINA0042EB

HAMAMATSU

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