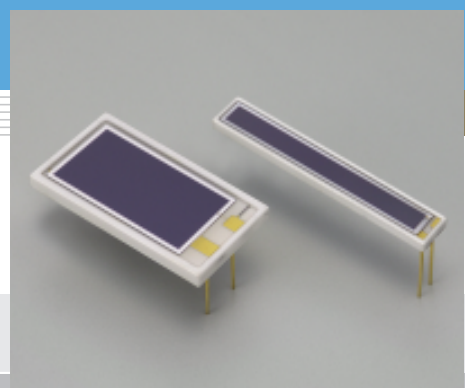


Si PIN photodiode S2744/S3588-08, -09

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

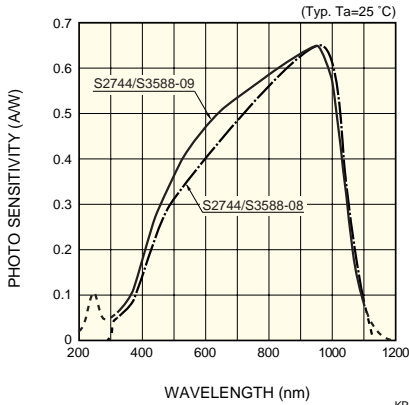
Type No.	Dimensional outline	Window material	Active area (mm)	Depletion layer thickness (mm)	Absolute maximum ratings			
					Reverse voltage V_R Max.	Power dissipation P (mW)	Operating temperature T_{opr} (°C)	Storage temperature T_{stg} (°C)
S2744-08	①	Epoxy resin	10 × 20	0.3	100	100	-20 to +60	-20 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)

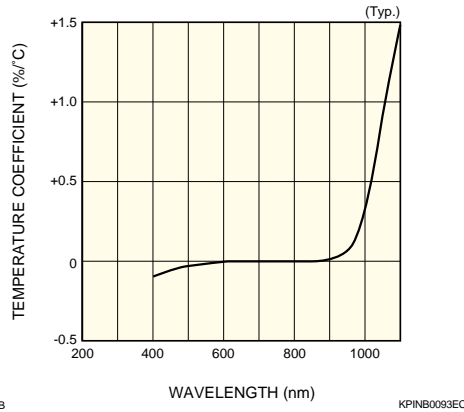
Type No.	Spectral response range λ (nm)	Peak sensitivity wavelength λ_p (nm)	Photo sensitivity S				Short circuit current I_{sc} 100 lx (μ A)	Dark current I_D $V_R=70$ V		Temp. coefficient of I_D T_{CID} (times/°C)	Cut-off frequency f_c $V_R=70$ V (MHz)	Terminal capacitance C_t $f=1$ MHz $V_R=70$ V (pF)	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			90	0.66	0.20	0.30	0.36						
S3588-09				0.66	0.22	0.33	0.41						

Si PIN photodiode S2744/S3588-08, -09

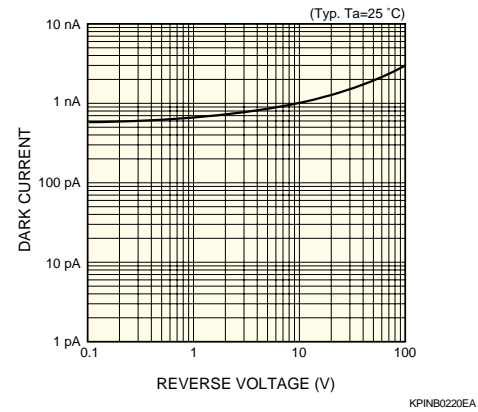
■ Spectral response



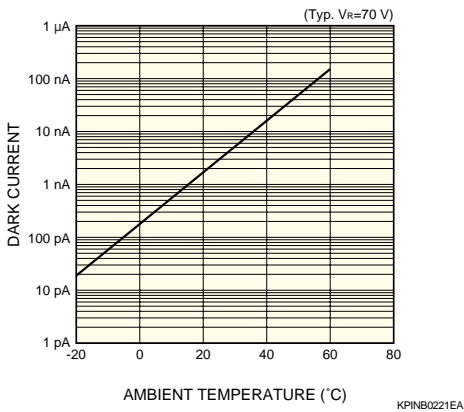
■ Photosensitivity temperature characteristic



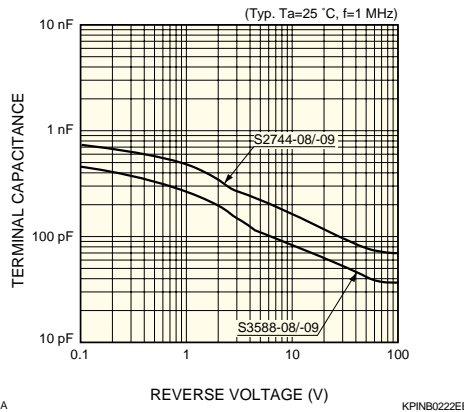
■ Dark current vs. reverse voltage



■ Dark current vs. ambient temperature

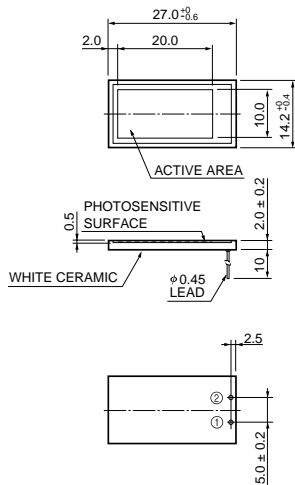


■ Terminal capacitance vs. reverse voltage



■ Dimensional outlines (unit: mm)

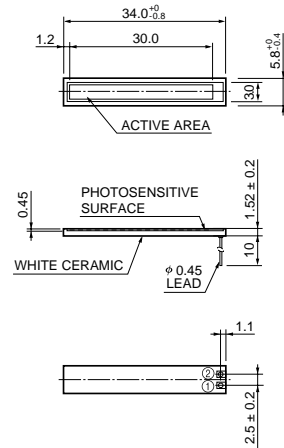
① S2744-08/-09



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

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