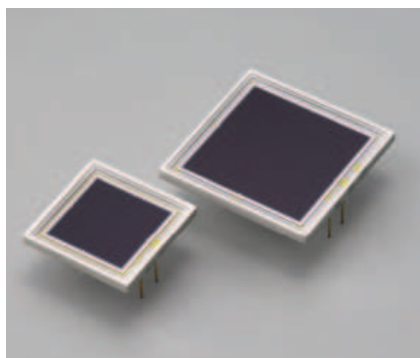




Si PIN photodiode

S3204/S3584 series

Large active area Si PIN photodiodes

Features

- ➔ Sensitivity matching with BGO and CsI (TI) scintillators
- ➔ High quantum efficiency (Unsealed type): QE=85 % ($\lambda=540$ nm)
- ➔ Low capacitance
- ➔ High-speed response
- ➔ High stability
- ➔ Good energy resolution

Applications

- ➔ Scintillation detectors
- ➔ Hodoscopes
- ➔ TOF counters

Structure / Absolute maximum ratings

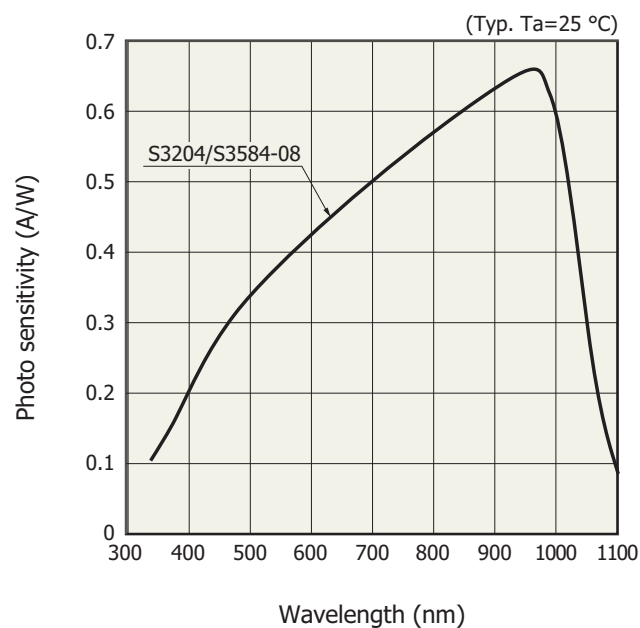
Type No.	Window material	Active area (mm)	Depletion layer thickness (mm)	Absolute maximum ratings			
				Reverse voltage V _R max	Power dissipation P (mW)	Operating temperature T _{opr} (°C)	Storage temperature T _{stg} (°C)
S3204-08	Epoxy resin	18 × 18	0.3	100	100	-20 to +60	-20 to +80
S3204-09	Unsealed						
S3584-08	Epoxy resin	28 × 28					
S3584-09	Unsealed						

Note: Absolute maximum ratings are the values that must not be exceeded at any time. If even one of the absolute maximum ratings is exceeded even for a moment, the product quality may be impaired. Always be sure to use the product within the absolute maximum ratings.

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

Type No.	Spectral response range λ	Peak sensitivity wavelength λ_p	Photo sensitivity S				Short circuit current Isc 100 lx	Dark current Id VR=70 V		Temp. coefficient of Id TCID	Cut-off Frequency fc VR=70 V -3 dB	Terminal capacitance Ct f=1MHz VR=70 V	NEP VR=70 V
			$\lambda=\lambda_p$	LSO 420 nm	BGO 480 nm	CsI(Tl) 540 nm		Typ.	Max.				
	(nm)	(nm)	(A/W)	(A/W)	(A/W)	(A/W)	(μ A)	(nA)	(nA)	(times/°C)	(MHz)	(pF)	(W/Hz ^{1/2})
S3204-08	340 to 1100	960	0.66	0.20	0.30	0.36	340	6	20	1.12	20	130	6.6×10^{-14}
S3204-09				0.22	0.33	0.41	300						
S3584-08				0.20	0.30	0.36	780	10	30		10	300	8.6×10^{-14}
S3584-09				0.22	0.33	0.41	730						

Spectral response



Spectral response (without window)

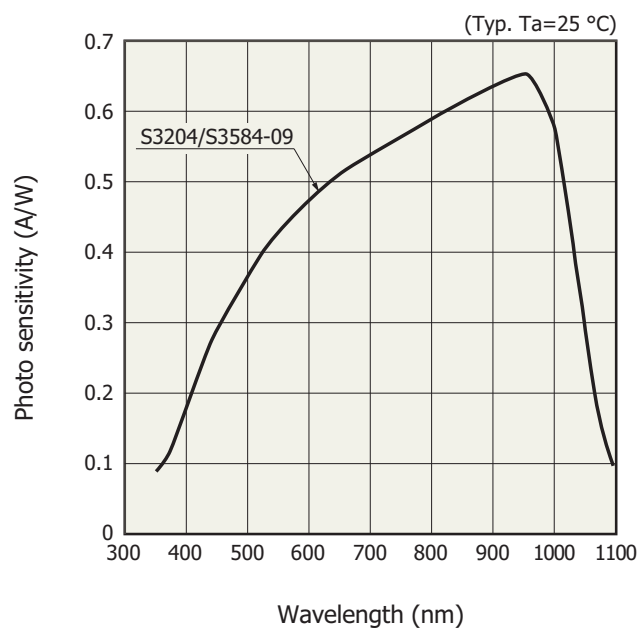
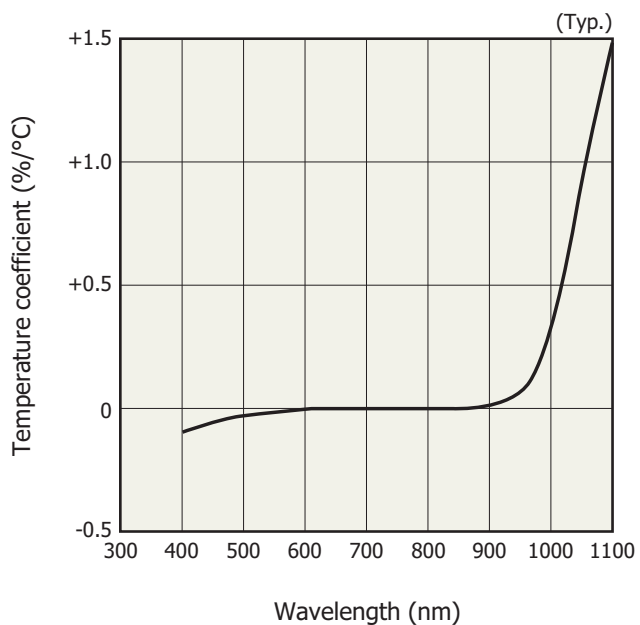
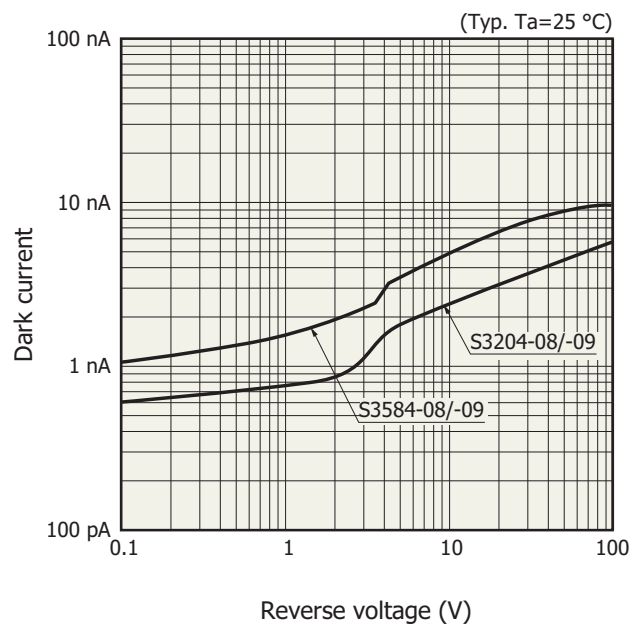


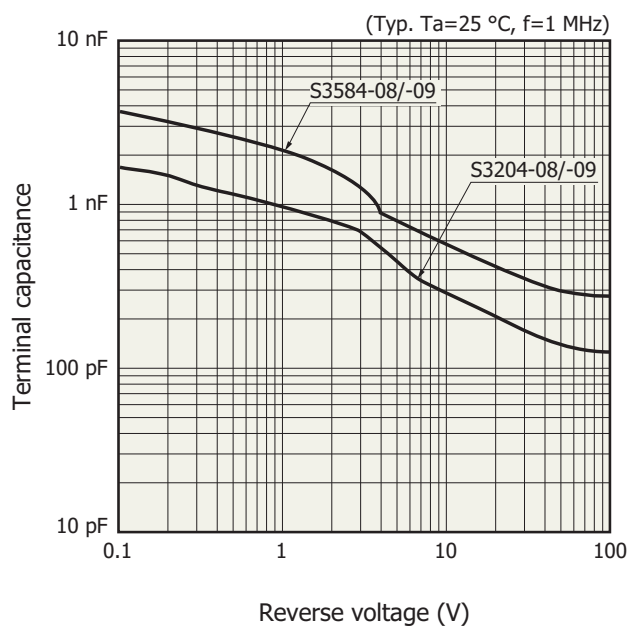
Photo sensitivity temperature characteristic



Dark current vs. reverse voltage



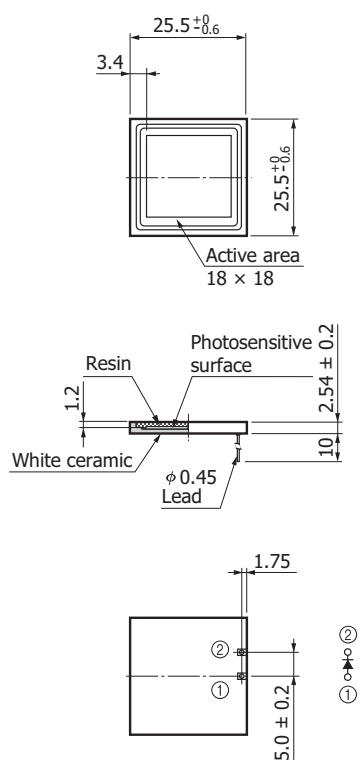
Terminal capacitance vs. reverse voltage



KPINB0230EE

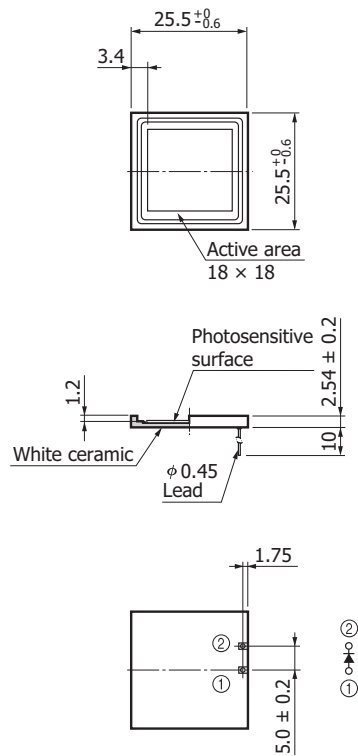
Dimensional outline (unit: mm)

S3204-08



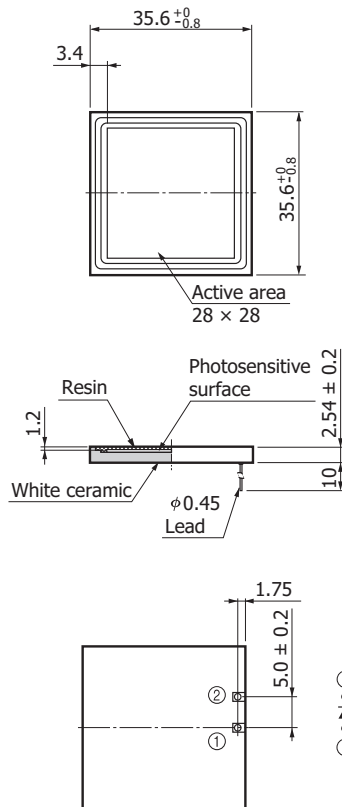
KPINA0040EC

S3204-09



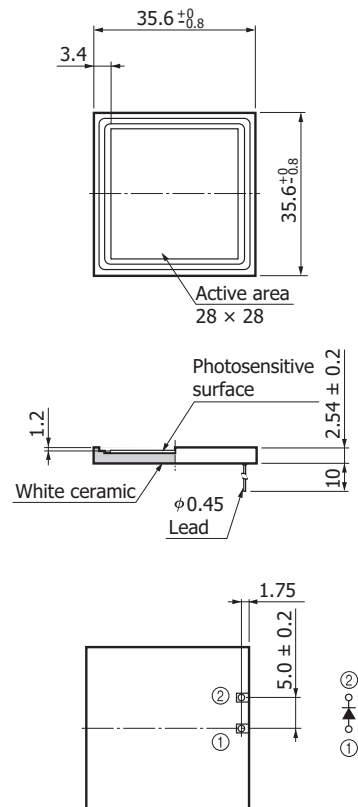
KPINA0110EA

S3584-08



KPINA0041ED

S3584-09



KPINA0111EA

Information described in this material is current as of January, 2012.

Product specifications are subject to change without prior notice due to improvements or other reasons. Before assembly into final products, please contact us for the delivery specification sheet to check the latest information.

Type numbers of products listed in the delivery specification sheets or supplied as samples may have a suffix "(X)" which means preliminary specifications or a suffix "(Z)" which means developmental specifications.

The product warranty is valid for one year after delivery and is limited to product repair or replacement for defects discovered and reported to us within that one year period. However, even if within the warranty period we accept absolutely no liability for any loss caused by natural disasters or improper product use.

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