

Si photodiode

S8559

Detector for X-ray monitor

Features

- Si photodiode coupled to low cost CsI scintillator
- Ideal for detection of X-ray energy below 100 keV

Applications

- X-ray detection
- X-ray monitors

Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Value	Unit
Reverse voltage	V _R Max.	5	V
Operating temperature	T _{opr}	-10 to +60	°C
Storage temperature	T _{stg}	-20 to +70	°C

Electrical and optical characteristics (without scintillator, Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ		-	190 to 1000	-	nm
Peak sensitivity wavelength	λ_p			720	-	nm
Photo sensitivity	S	$\lambda=500$ nm	-	0.26	-	A/W
Dark current	I _D	V _R =10 mV	-	2	50	pA
Terminal capacitance	C _t	V _R =0 V, f=10 kHz	-	950	-	pF

X-ray sensitivity (reference value, tube current: 1.0 mA, aluminum filter: t=6 mm, distance=830 mm)

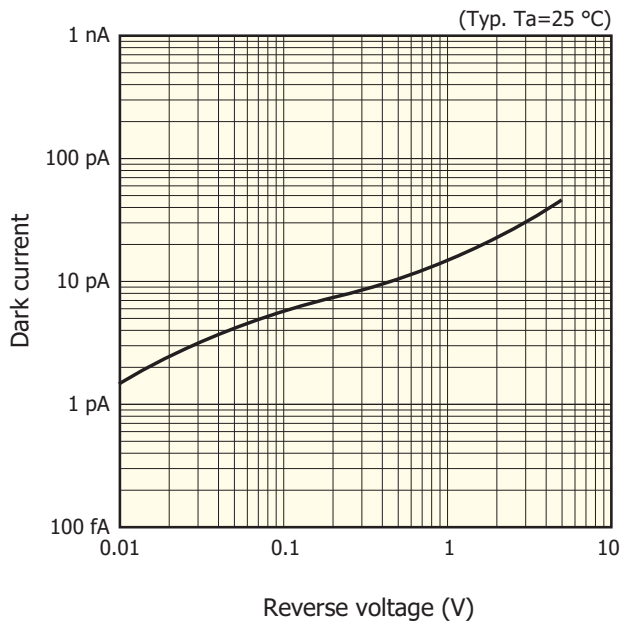
X-ray tube voltage	Typ.	Unit
120 kV	52	nA

Note) Depends on equipment and measurement conditions.

Handling precautions

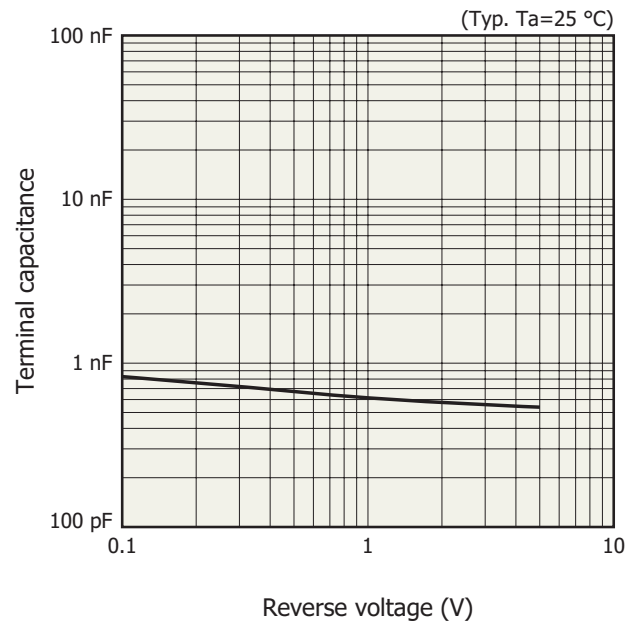
Avoid storing or using S8559 at high humidity because CsI scintillator has deliquescence.

Dark current vs. reverse voltage



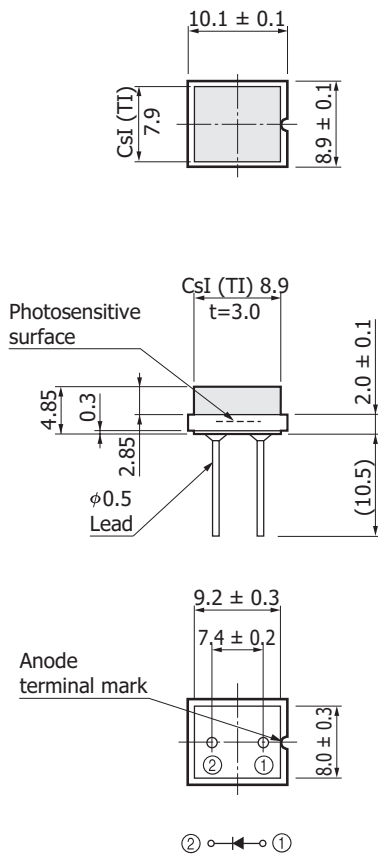
KSPDB0362EA

Terminal capacitance vs. reverse voltage



KSPDB0153EB

Dimensional outline (unit: mm)



KSPDA0145EB

Related information

www.hamamatsu.com/sp/ssd/doc_en.html

■ Precautions

- Disclaimer
- Metal, ceramic, plastic package products

■ Technical information

- Si photodiode/Application circuit examples

Information described in this material is current as of August 2020.

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