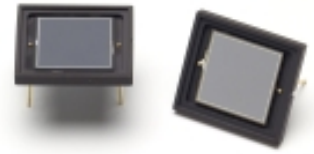


# Si photodiode

## S10043

### Highly reliable photodiode for VUV detection



S10043 is a Si photodiode designed to detect high-power ArF excimer lasers (193 nm) with high accuracy and stability. By combining our newly developed technologies for forming ultra-thin PN junctions and high-reliability ultra-thin metal films, S10043 shows almost no change in sensitivity even after exposure to ArF excimer laser beam of 1 kJ/cm<sup>2</sup>.

#### Features

- Greatly improved sensitivity stability even after exposure to ArF ( $\lambda=193$  nm) excimer laser
- Windowless package \*1

#### Applications

- ArF excimer laser detection
- Various UV detection

#### ■ Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Value	Unit
Reverse voltage	VR Max.	5	V
Operating temperature *2	Topr	-20 to +60	°C
Storage temperature *2	Tstg	-55 to +80	°C

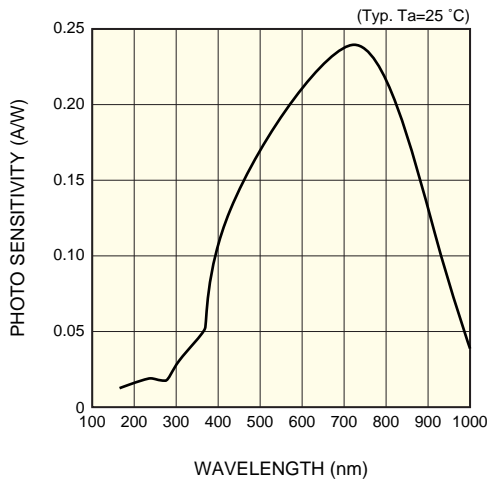
#### ■ Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	$\lambda$		-	190 to 1000	-	nm
Peak sensitivity wavelength	$\lambda_p$		-	720	-	nm
Photo sensitivity	S	$\lambda=193$ nm	10	15	-	mA/W
Dark current	Id	VR=10 mV	-	0.1	1	nA
Terminal capacitance	Ct	VR=0 V, f=10 kHz	-	4	-	nF
Rise time	tr	VR=0 V, RL=1 k $\Omega$ 10 to 90 %	-	9	-	$\mu$ s

\*1: S10043 uses a windowless package with no protection on the photodiode chip, and is shipped with the package held with glass tape. Remove the glass tape when using.

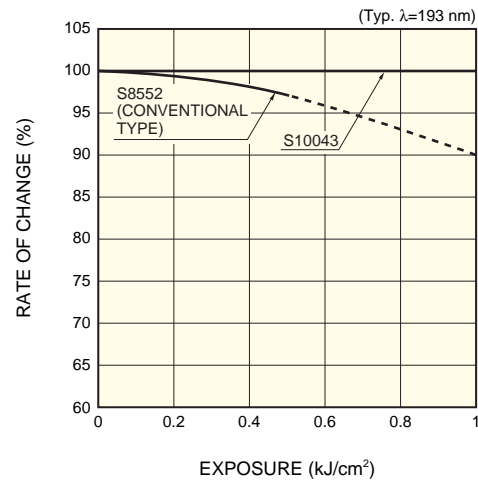
\*2: No condensation

## ■ Spectral response



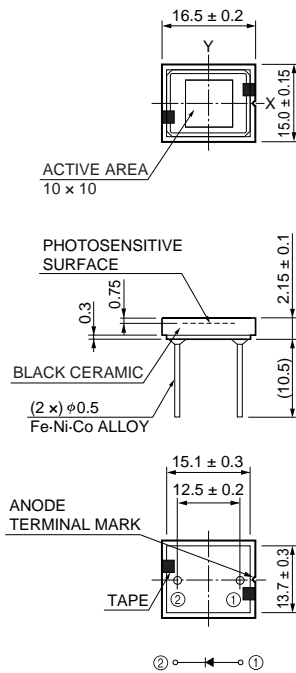
KSPDB0257EA

## ■ Sensitivity change after exposure to ArF laser



KSPDB0258EA

## ■ Dimensional outline (unit: mm)



KSPDA0171EA

## ■ Handling precautions

- Handle the photodiodes in a clean room.
- Never touch the photodiode chip surface and wire bonding.
- Wear dust-proof gloves and dust-proof mask.
- Use an air dust cleaner to blow away dust and foreign matter on the photodiode chip surface.
- Do not clean the photodiodes by any method other than air blow.

# HAMAMATSU

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