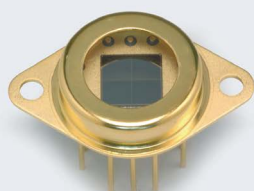


S10359



## Highly reliable quadrant photodiode for ArF excimer laser monitor

The S10359 is a quadrant Si photodiode that has achieved high reliability for ultraviolet light. It exhibits low sensitivity deterioration under UV light irradiation and is suitable for applications such as optical axis alignment or monitoring of intense UV light sources.

### Features

- High reliability to ArF excimer laser radiation ( $\lambda=193$  nm)
- No resin to cause outgassing
- Large photosensitive area:  
10 mm × 10 mm/quadrant

### Applications

- ArF excimer laser detection
- UV detection

### Structure

Parameter	Specification	Unit
Photosensitive area	10 × 10 / 4 segments	mm
Window material	Quartz	-

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

Parameter	Symbol	Value	Unit
Reverse voltage	V <sub>R</sub> Max.	20	V
Operating temperature <sup>*1</sup>	T <sub>opr</sub>	-40 to +100	°C
Storage temperature <sup>*1</sup>	T <sub>stg</sub>	-55 to +125	°C

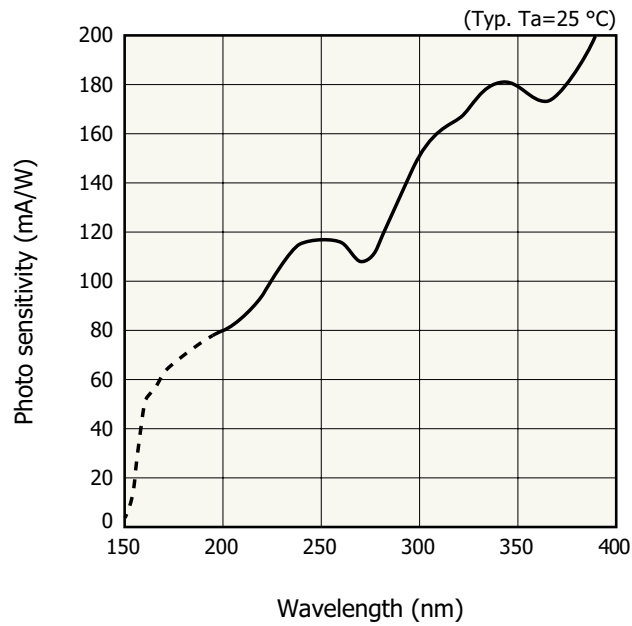
\*1: No dew condensation

When there is a temperature difference between a product and the surrounding area in high humidity environments, dew condensation may occur on the product surface. Dew condensation on the product may cause deterioration in characteristics and reliability.  
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

### Electrical and optical characteristics (Ta=25 °C, per element)

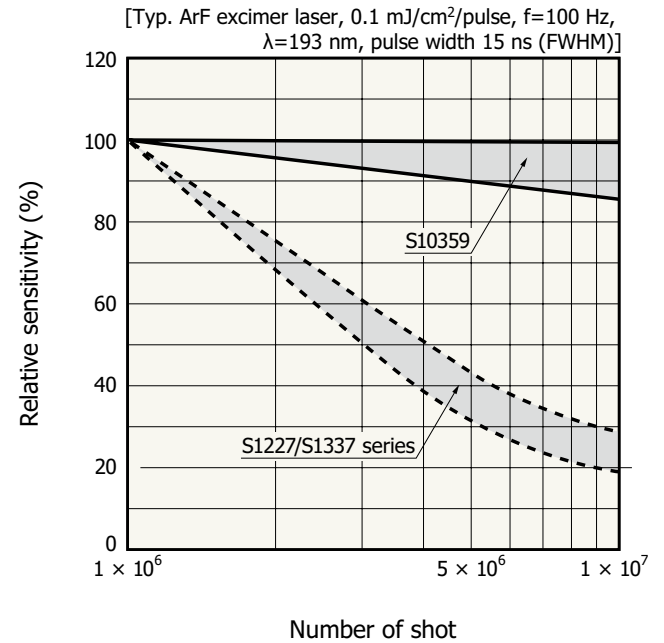
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	$\lambda$		-	193 to 1000	-	nm
Peak sensitivity wavelength	$\lambda_p$		-	760	-	nm
Photo sensitivity	S	$\lambda=193$ nm	45	60	-	mA/W
Dark current	I <sub>D</sub>	V <sub>R</sub> =10 mV	-	0.02	0.5	nA
Rise time	t <sub>r</sub>	V <sub>R</sub> =0 V, R <sub>L</sub> =1 kΩ 10 to 90 %	-	1	-	μs
Terminal capacitance	C <sub>t</sub>	V <sub>R</sub> =0 V, f=10 kHz	-	0.5	-	nF

### Spectral response



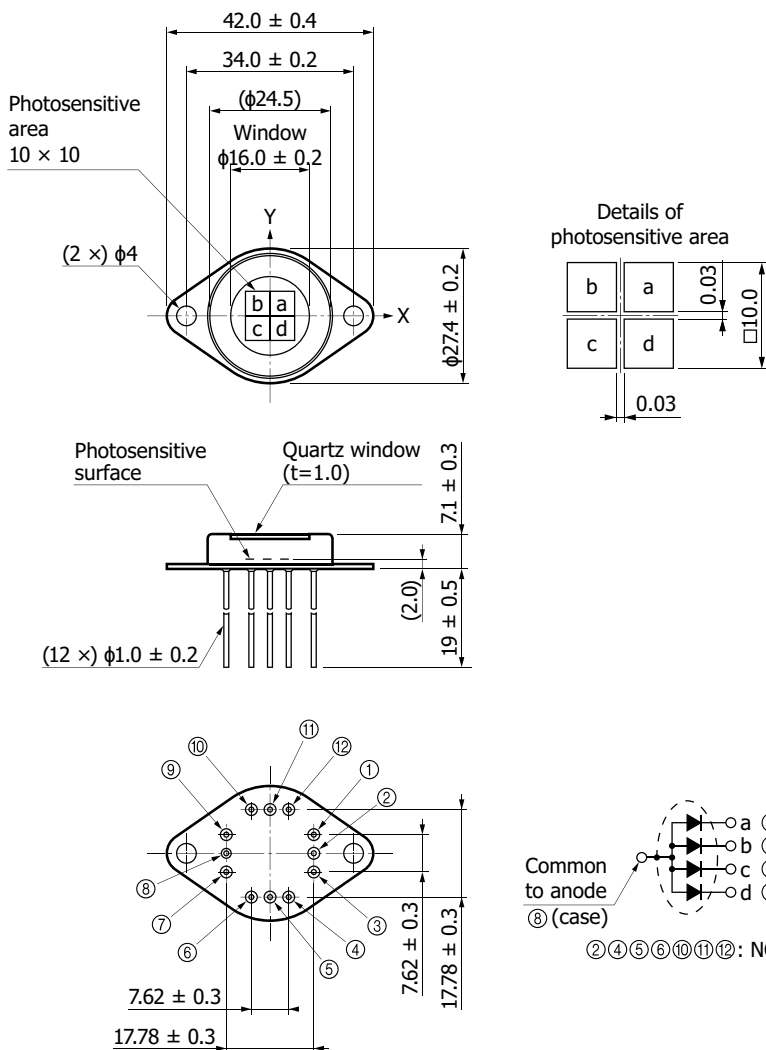
KSPDB0290EB

### Sensitivity change after exposure to ArF laser



KSPDB0289EA

### Dimensional outline (unit: mm)



KSPDA0180EC

### Recommended soldering condition

- Solder temperature: 260 °C max. (10 s or less, once)

Note: When you set soldering conditions, check that problems do not occur in the product by testing out the conditions in advance.

### Precautions against UV light exposure

- When UV light irradiation is applied, the product characteristics may degrade. Such examples include degradation of the product's UV sensitivity and increase in dark current. This phenomenon varies depending on the irradiation level, irradiation intensity, usage time, and ambient environment and also varies depending on the product model. Before employing the product, we recommend that you check the tolerance under the ultraviolet light environment that the product will be used in.

### Related information

[www.hamamatsu.com/sp/ssd/doc\\_en.html](http://www.hamamatsu.com/sp/ssd/doc_en.html)

#### ■ Precautions

- Notice
- Precautions / Metal, ceramic, plastic package products

#### ■ Catalog

- Technical note / Si photodiodes

The content of this document is current as of April 2025.

Product specifications are subject to change without prior notice due to improvements or other reasons. This document has been carefully prepared and the information contained is believed to be accurate. In rare cases, however, there may be inaccuracies such as text errors. Before using these products, always contact us for the delivery specification sheet to check the latest 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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