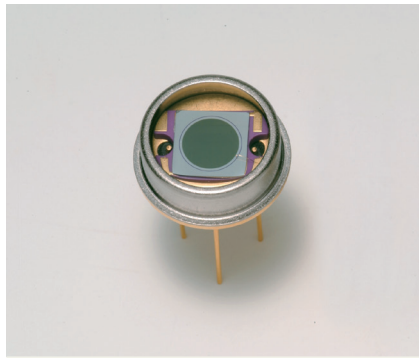


Si PIN photodiode



S15137

Si PIN photodiode for visible to infrared photometry

The S15137 is a Si PIN photodiode developed for YAG lasers (1.06 μm). The photosensitivity at 1.06 μm is 0.52 A/W (typ.), which is about 1.5 times higher than that of previous products. The PIN structure allows high-speed response and low capacitance. The photosensitive area is as large as $\phi 5\text{ mm}$, making optical axis alignment easier.

Features

- High sensitivity in infrared region: 0.52 A/W ($\lambda=1.06\ \mu\text{m}$)
- High-speed response: $t_r=12.5\ \text{ns}$ ($V_R=100\ \text{V}$)
- Low capacitance: $C_t=10\ \text{pF}$ ($V_R=100\ \text{V}$)
- Large photosensitive area: $\phi 5\ \text{mm}$
- High reliability: TO-8 metal package

Applications

- Fiber laser detection
- YAG laser detection
- Analytical instrument, etc.

Structure

Parameter	Symbol	Specification	Unit
Photosensitive area	A	$\phi 5.0$	mm
Package	-	TO-8	-
Window material	-	Borosilicate glass	-

Absolute maximum ratings ($T_a=25\ ^\circ\text{C}$)

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	V_R		150	V
Operating temperature	T_{opr}	No dew condensation*1	-40 to +100	$^\circ\text{C}$
Storage temperature	T_{stg}	No dew condensation*1	-55 to +125	$^\circ\text{C}$

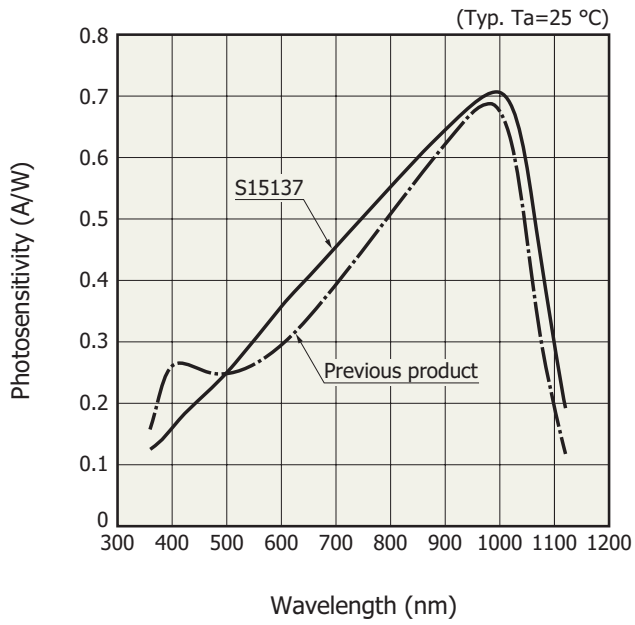
*1: When there is a temperature difference between a product and the surrounding area in high humidity environments, dew condensation may occur on the product surface. Dew condensation on the product may cause deterioration in characteristics and reliability.

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 ($T_a=25\ ^\circ\text{C}$)

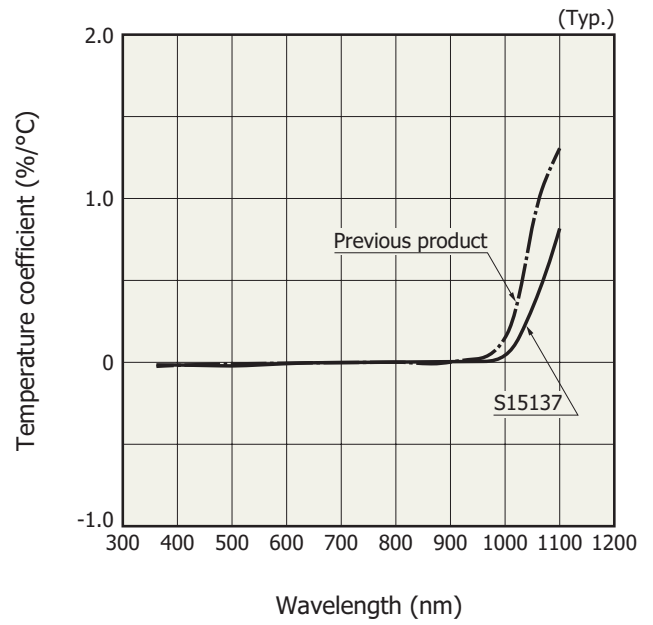
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ		-	360 to 1120	-	nm
Peak sensitivity wavelength	λ_p		-	1000	-	nm
Photosensitivity	S	$\lambda=1060\ \text{nm}$	0.44	0.52	-	A/W
Short circuit current	I_{sc}	2856 K, 1000 lx	16	21	-	μA
Dark current	I_D	$V_R=100\ \text{V}$	-	1	10	nA
Temperature coefficient of I_D	$\Delta T I_D$		-	1.15	-	times/ $^\circ\text{C}$
Rise time	t_r	$V_R=100\ \text{V}$, $R_L=50\ \Omega$ $\lambda=1060\ \text{nm}$, 10 to 90%	-	12.5	-	ns
Terminal capacitance	C_t	$V_R=100\ \text{V}$, $f=10\ \text{kHz}$	-	10	-	pF

Spectral response



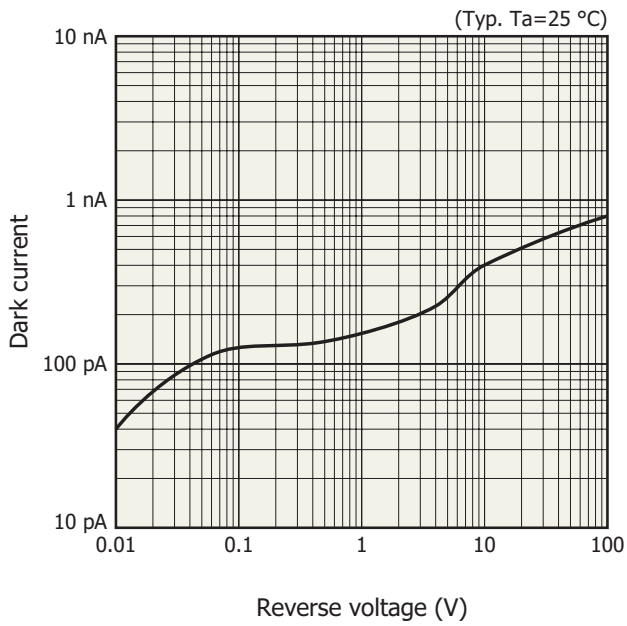
KPINB0443EA

Sensitivity temperature characteristics



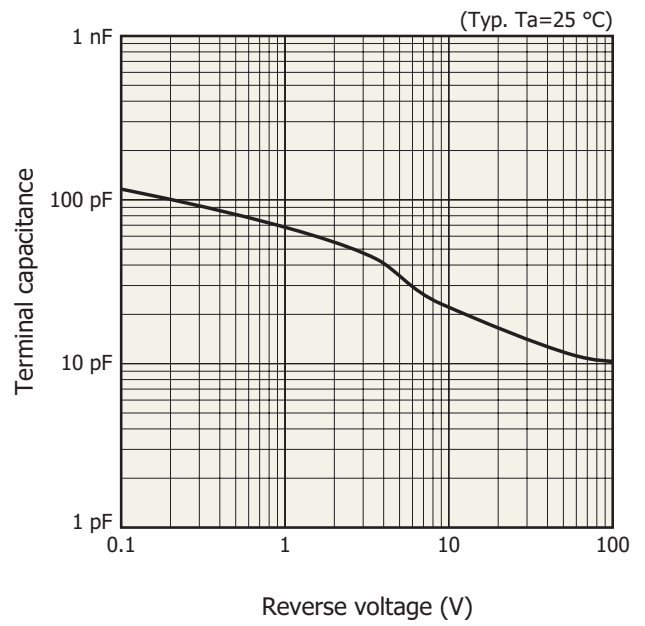
KPINB0444EA

Dark current vs. reverse voltage



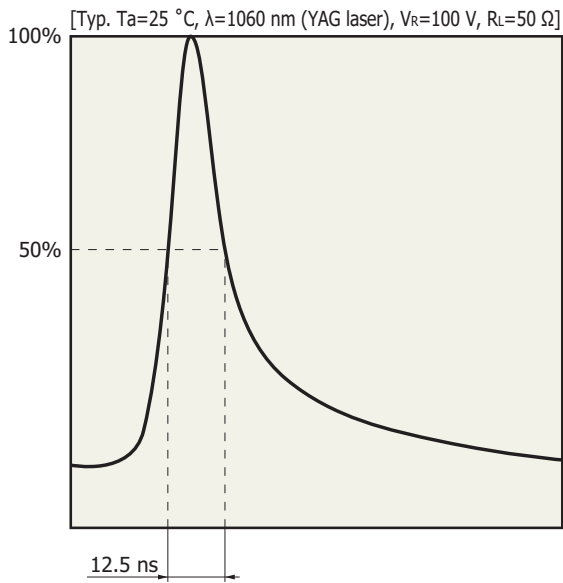
KPINB0281EA

Terminal capacitance vs. reverse voltage



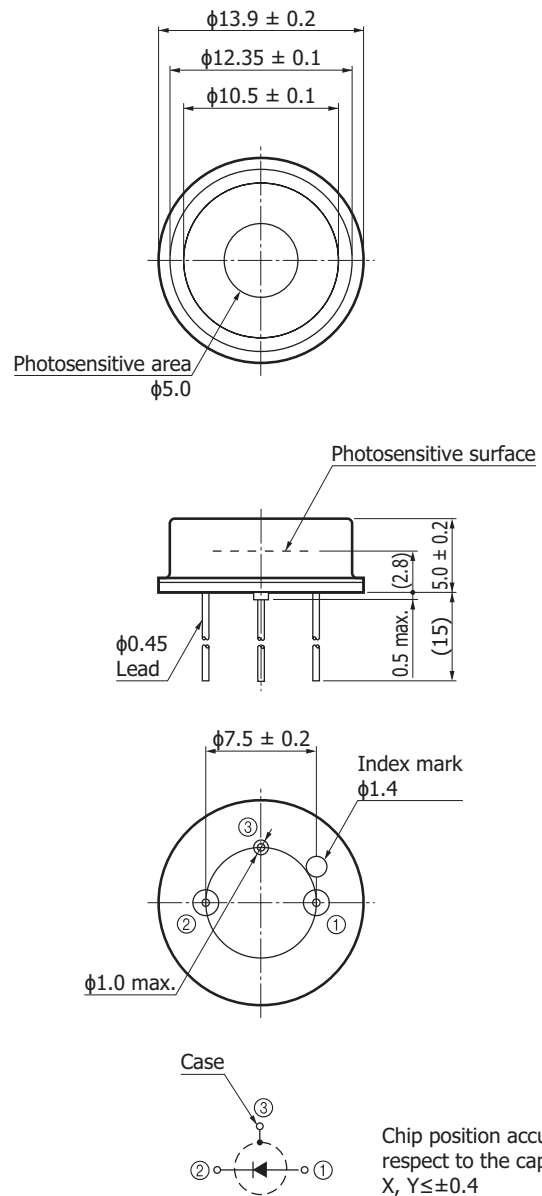
KPINB0282EA

Response waveform



KPINB0280EC

Dimensional outline (unit: mm)



KPINA0092EB

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.

Related information

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

■ Precautions

- Notice
- Metal, ceramic, plastic package products

■ Technical information

- Si photodiode / Application circuit examples

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

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.

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