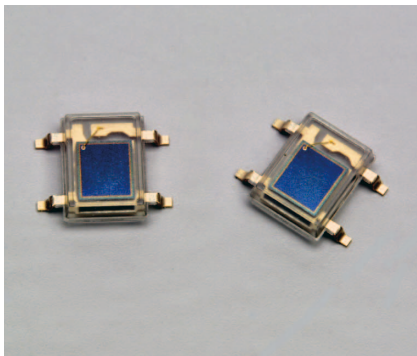


Si PIN photodiode



S14016-01DT

Compact photosensor in a plastic package

The S14016-01DT is a Si PIN photodiode for visible to near infrared range. It is provided in a compact surface mount type plastic package.

Features

- Surface mount type, compact
- Package size: 4 × 3 mm
- Photosensitive area: 1.8 × 2.1 mm
- High sensitivity: 0.7 A/W ($\lambda=960$ nm)

Applications

- Optical switches

Structure

Parameter	Specification	Unit
Photosensitive area	2.1 × 1.8	mm
Package	Epoxy	-

Absolute maximum ratings

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	V_R max	$T_a=25$ °C	10	V
Operating temperature	T_{opr}	No dew condensation*1	-40 to +85	°C
Storage temperature	T_{stg}	No dew condensation*1	-40 to +100	°C
Reflow soldering conditions*2	T_{sol}		Peak temperature 240 °C, twice (see P.5)	-

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

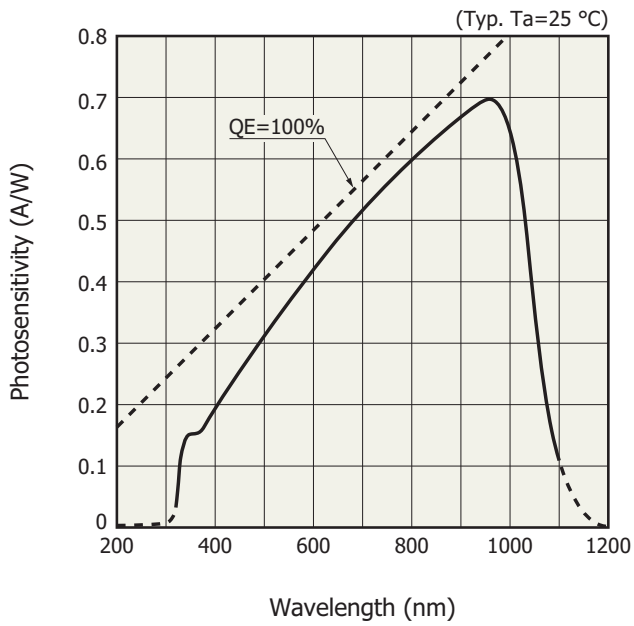
*2: JEDEC level 4

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 ($T_a=25$ °C)

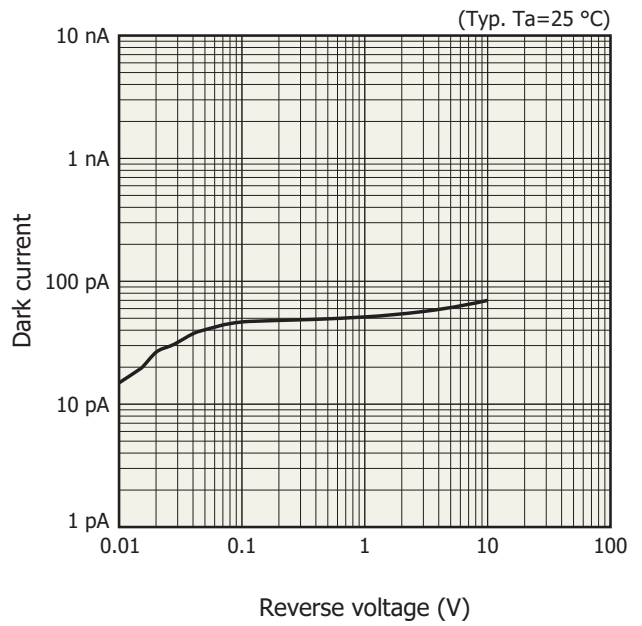
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ		-	320 to 1100	-	nm
Peak sensitivity wavelength	λ_p		-	960	-	nm
Photosensitivity	S	$\lambda=\lambda_p$	0.6	0.7	-	A/W
Dark current	I_D	$V_R=5$ V	-	0.1	10	nA
Temperature coefficient of dark current	T_{CID}	$V_R=5$ V	-	1.15	-	times/°C
Cutoff frequency	f_c	$V_R=5$ V, $R_L=50$ Ω -3 dB	5	10	-	MHz
Terminal capacitance	C_t	$V_R=5$ V, $f=1$ MHz	-	12	24	pF

Spectral response



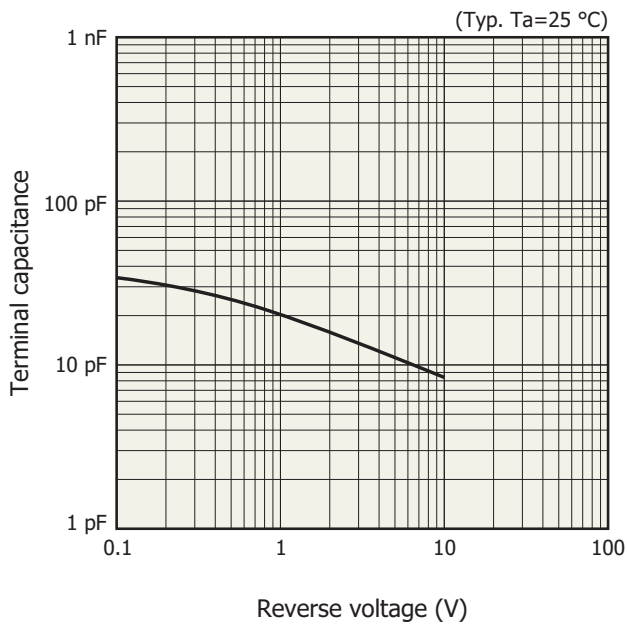
KPINB0414EA

Dark current vs. reverse voltage



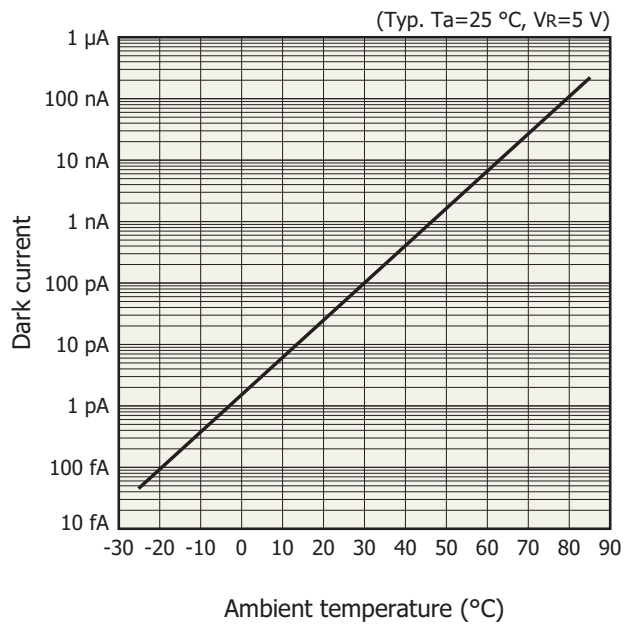
KPINB0415EA

Terminal capacitance vs. reverse voltage



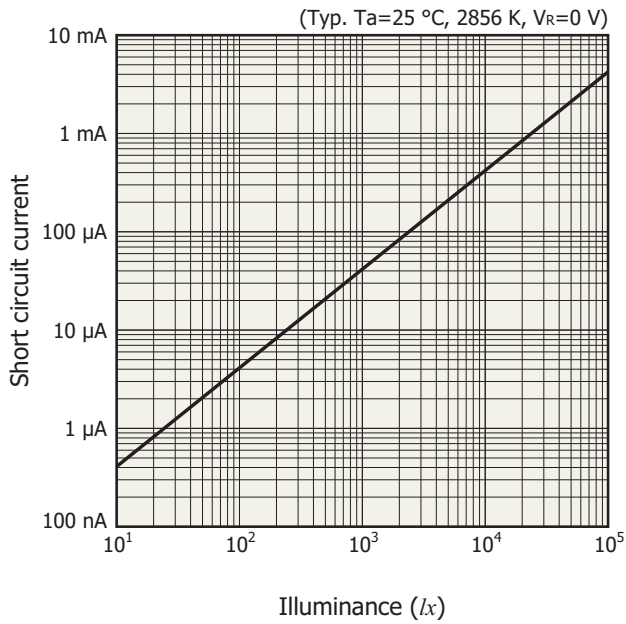
KPINB0416EA

Dark current vs. ambient temperature



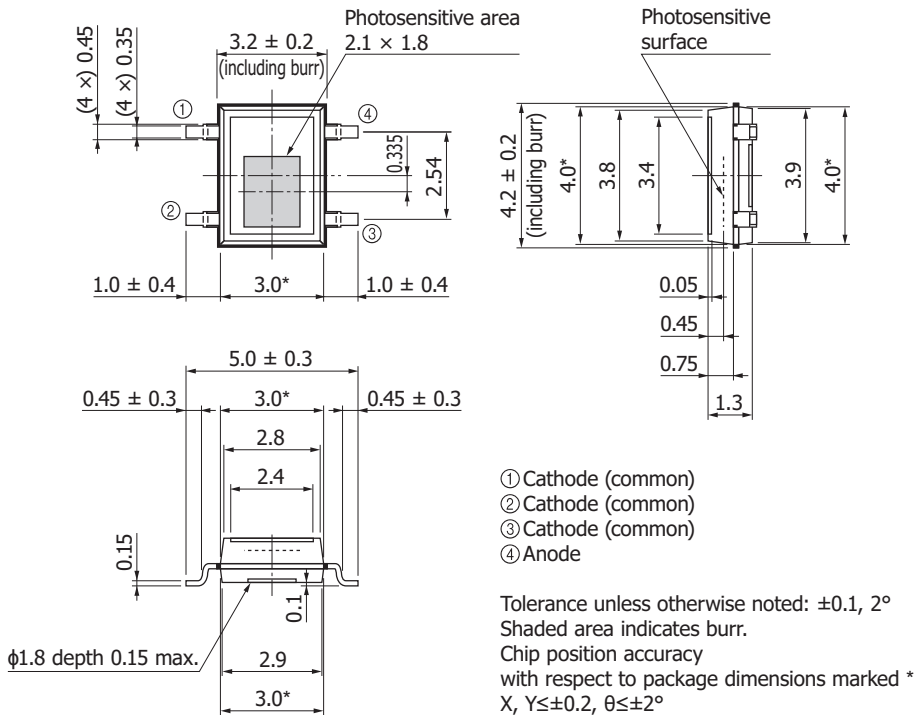
KPINB0384EB

Short circuit current vs. illuminance



KPINB0419EA

Dimensional outline (unit: mm)



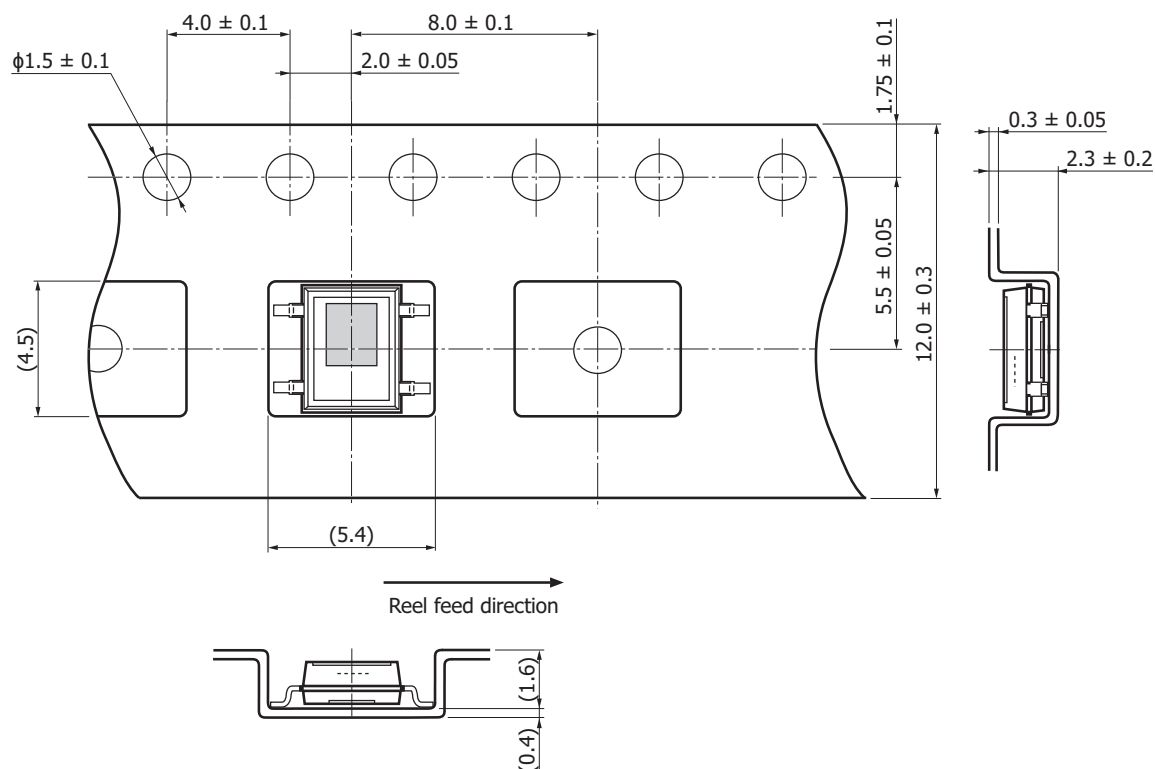
KPICAD120EA

Standard packing specifications

- Reel (conforms to JEITA ET-7200)

Dimensions	Hub diameter	Tape width	Material	Electrostatic characteristics
254 mm	80 mm	12 mm	PS	Conductive

- Embossed tape (unit: mm)

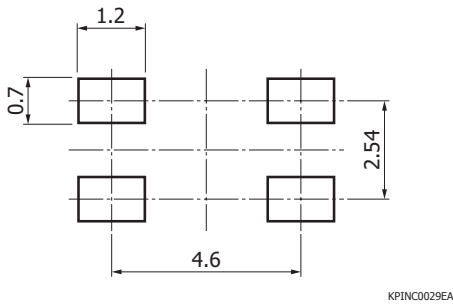


KPINC0030EA

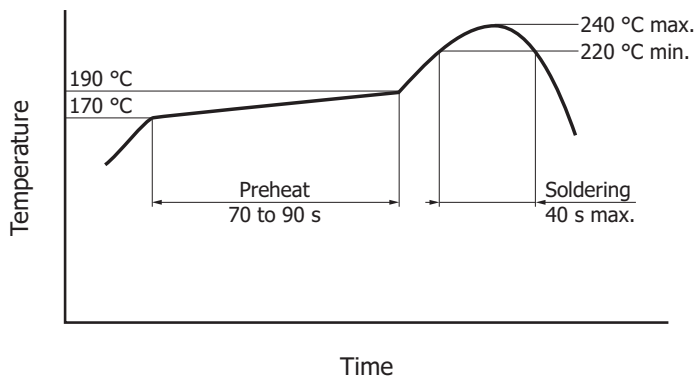
- Packing quantity
2000 pcs/reel

- Packing type
Reel and desiccant in moisture-proof packaging (vacuum-sealed)

Recommended land pattern (unit: mm)



Recommended temperature profile for reflow soldering (typical example)



KPINB0417EA

- After unpacking, keep it in an environment at 5 to 30 °C and a humidity of 70% or less. Perform reflow soldering within 72 hours.
- The effect that the product receives during reflow soldering varies depending on the circuit board and reflow oven that are used. When you set reflow soldering conditions, check that problems do not occur in the product by testing out the conditions in advance. Drastic changes in temperature can cause problems. Set the temperature change to less than 4 °C/second.

The content of this document is current as of May 2018.

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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