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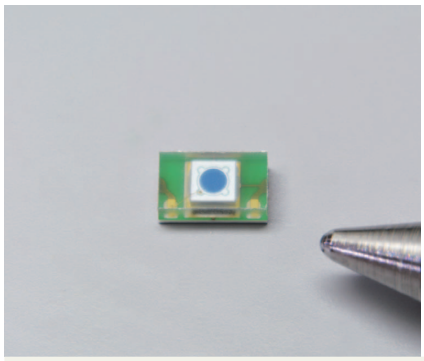
NEW

Si PIN photodiode

S13773



Surface mount type, high-speed Si photodiode

The S13773 is a Si PIN photodiode with sensitivities in the visible to near infrared range and is compatible with lead-free solder reflow. It features high-speed response and is suitable for distance measurement laser monitoring.

Features

- **High-speed response: 500 MHz (V_R=10 V)**
- **Surface mount type**
- **High reliability (wide temperature range)**

Applications

- **Distance measurement laser monitor**
- **Light monitor (from visible to near infrared region)**

Structure

Parameter	Symbol	Specification	Unit
Photosensitive area	-	ϕ0.8	mm
Package	-	3.1 × 1.8 × 1.0	mm

Absolute maximum ratings

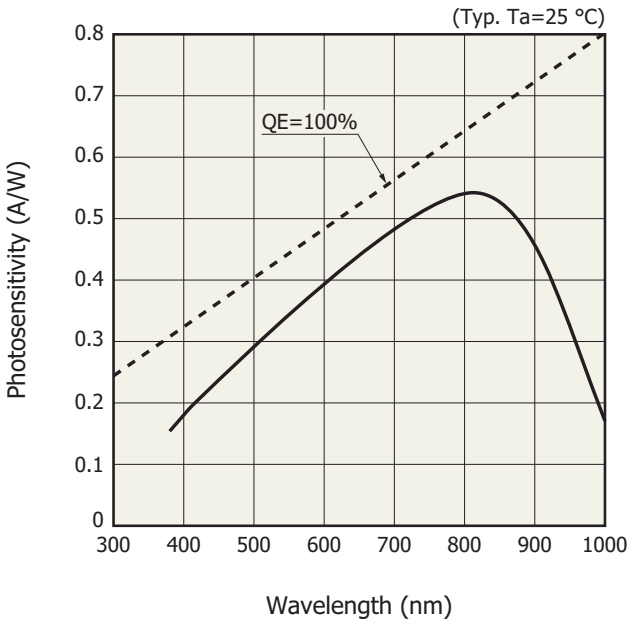
Parameter	Symbol	Value	Unit
Reverse voltage	V_R max	20	V
Power dissipation	Pd	0.2	W
Operating temperature*1	Topr	-40 to +100	°C
Storage temperature*1	Tstg	-40 to +100	°C
Soldering conditions*2	-	Peak temperature: 260 °C (see P.4)	-

*1: No dew condensation
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 2a
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)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ		-	380 to 1000	-	nm
Peak sensitivity wavelength	λp		-	800	-	nm
Photosensitivity	S	λ=λp	0.5	0.54	-	A/W
Short circuit current	Isc	λ=800 nm, V_R=0 V	0.35	0.43	-	A
Dark current	I_D	V_R=10 V	-	10	500	pA
Dark current temperature coefficient	ΔTID		-	1.15	-	times/°C
Cutoff frequency	fc	λ=830 nm, V_R=10 V R_L=50 Ω, -3 dB	-	500	-	MHz
Terminal capacitance	Ct	V_R=10 V, f=10 kHz	-	3	4	pF

Spectral response



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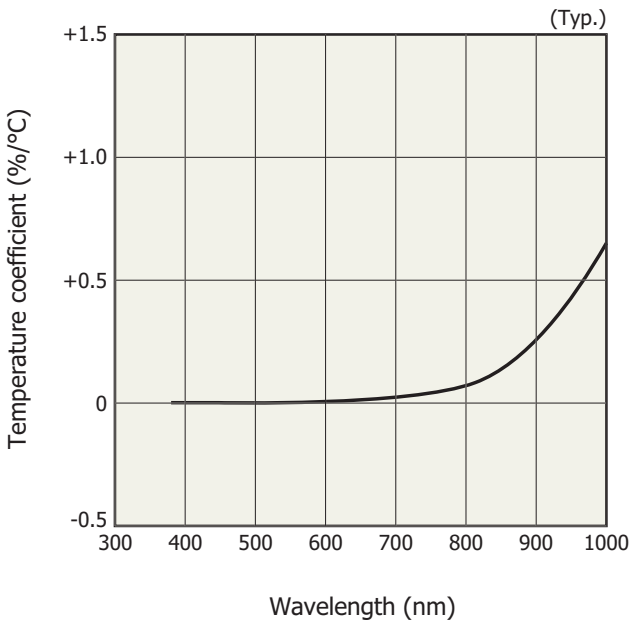
Photosensitivity temperature characteristics



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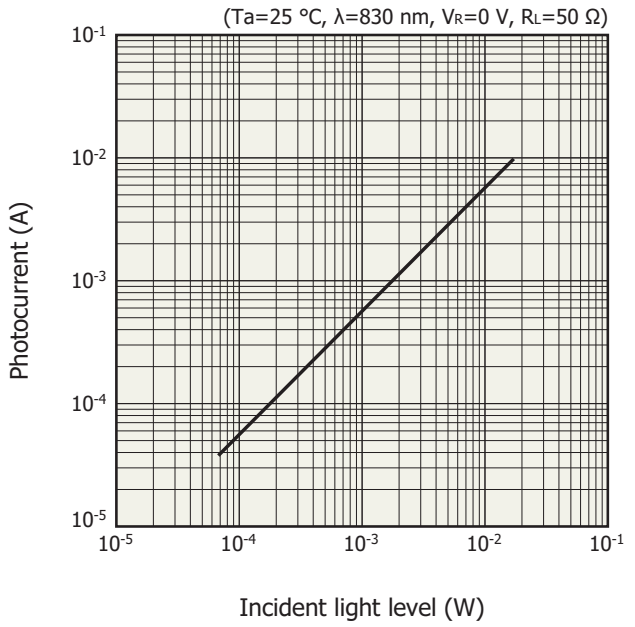
Photocurrent vs. incident light level



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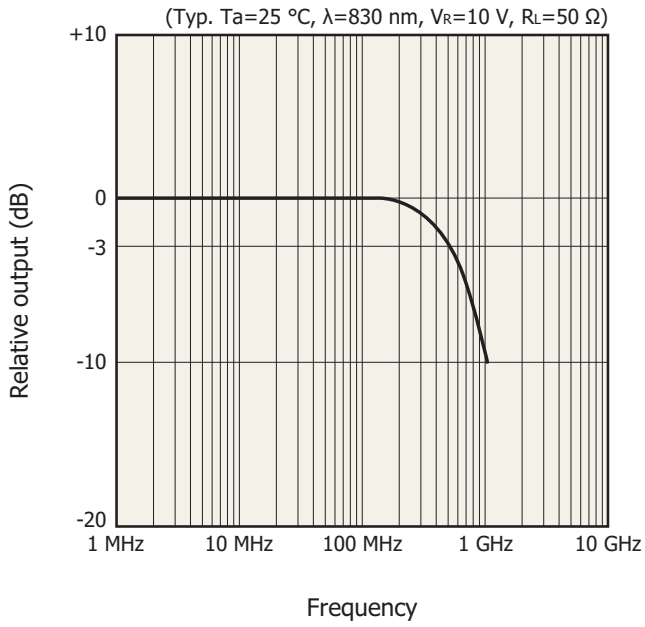
Frequency characteristics



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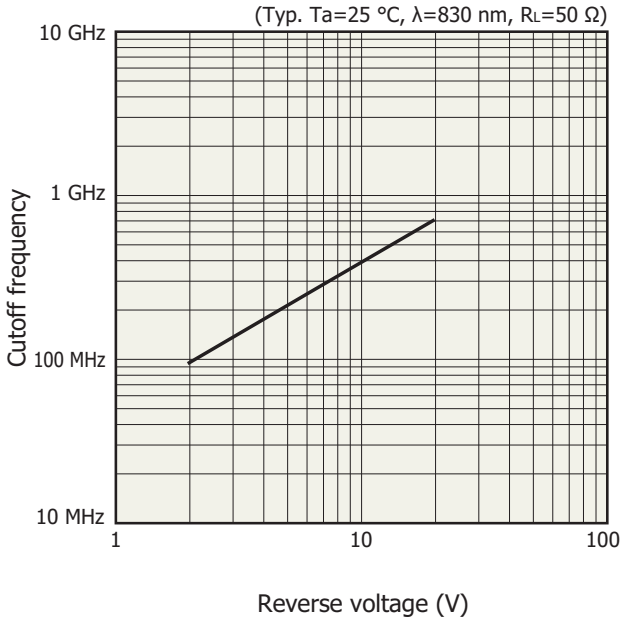
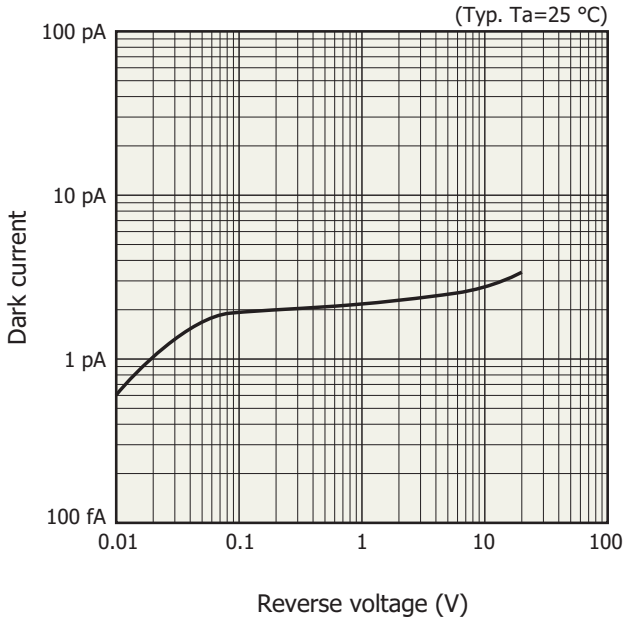
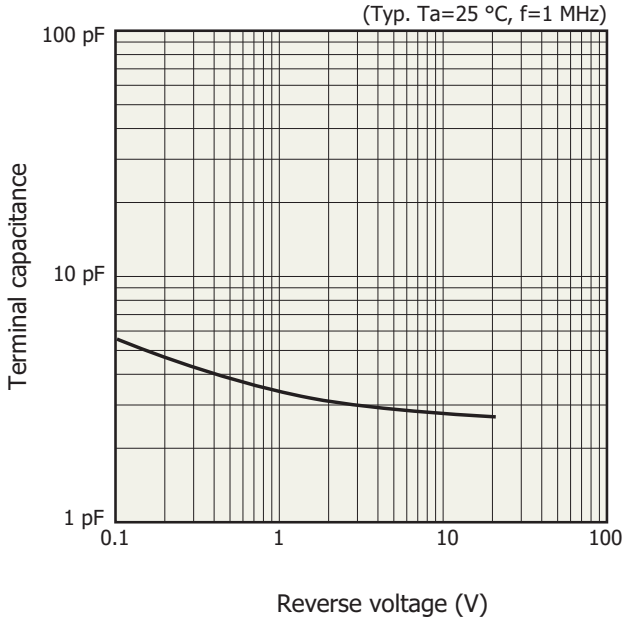
Cutoff frequency vs. reverse voltage



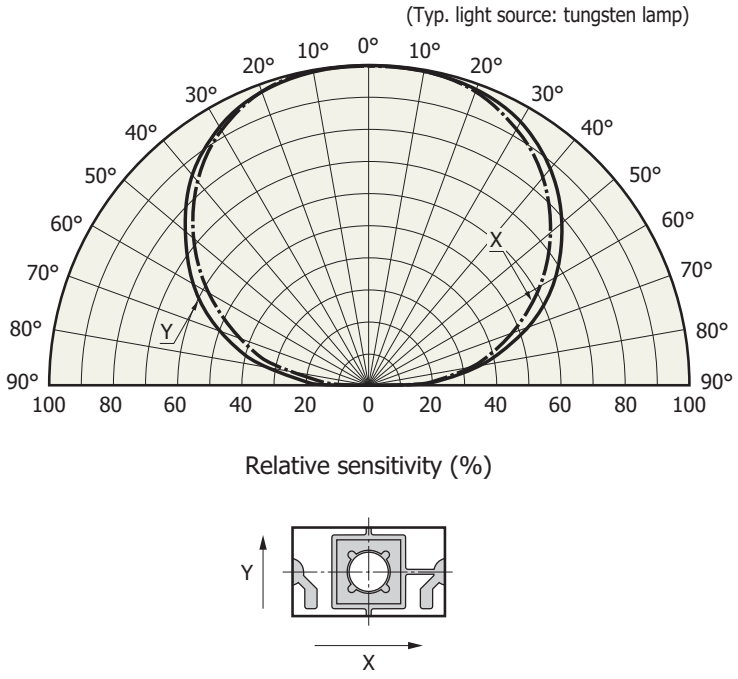
Dark current vs. reverse voltage



Terminal capacitance vs. reverse voltage



Directivity



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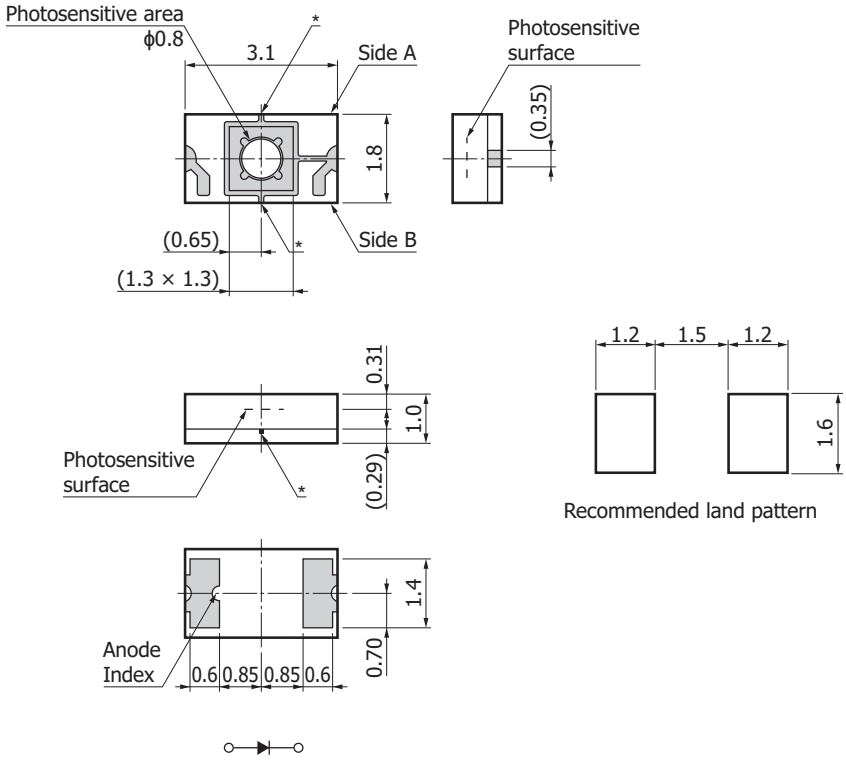
Dimensional outline (unit: mm)



Tolerance: ±0.2 unless otherwise noted
Values in parentheses indicate reference values.
* Side of the element
* There is exposed wiring on side A and side B. To prevent short circuits, do not allow any conductors to come in contact with the wiring.

Electrode

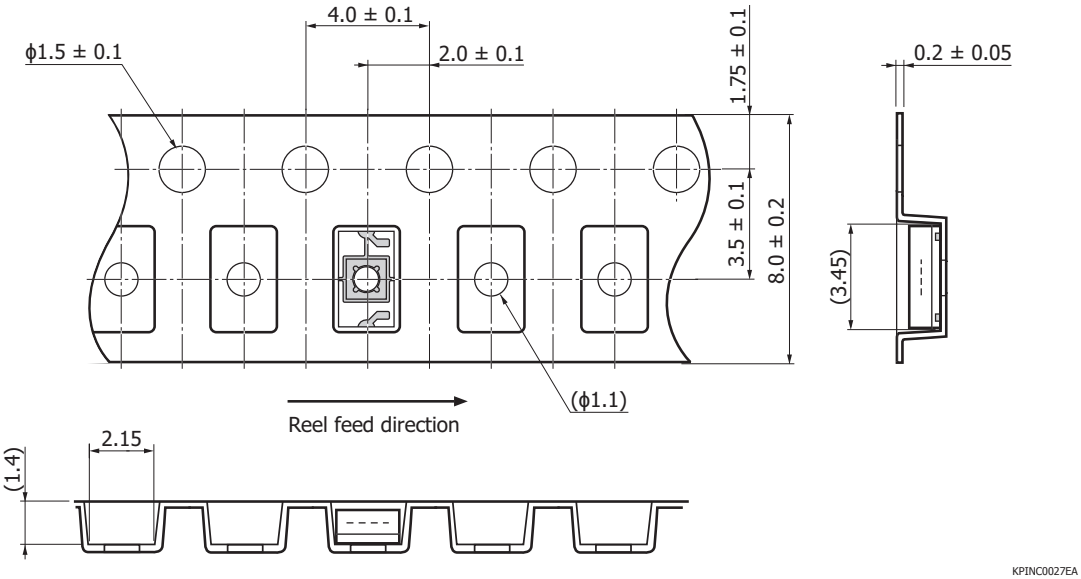
KPINA0119EB

Standard packing specifications

■ Reel (conforms to JEITA ET-7200)

Dimensions	Hub diameter	Tape width	Material	Electrostatic characteristics
180 mm	60 mm	8 mm	PS	Conductive

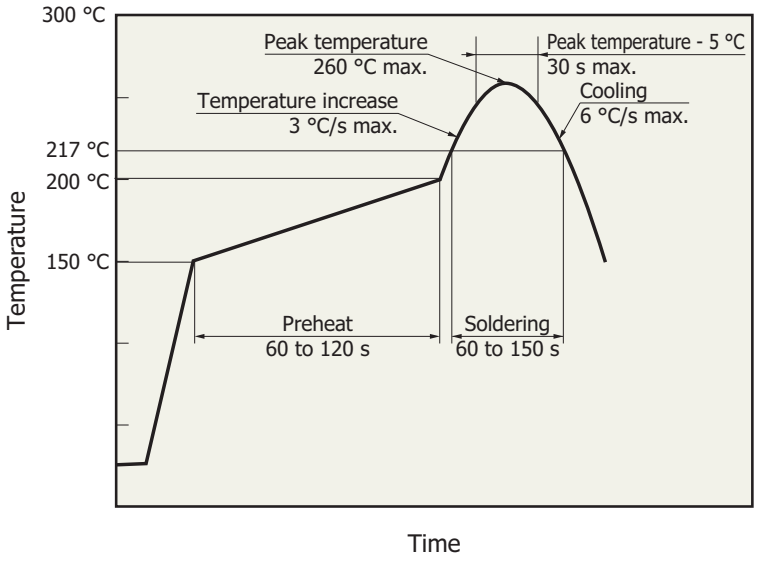
■ Embossed tape (unit: mm, material: PS, conductive)



■ Packing quantity
1000 pcs/reel

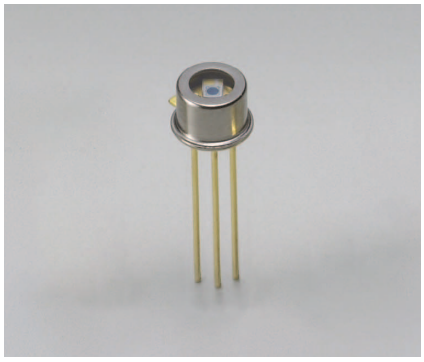
■ Packing type
Reel and desiccant in moisture-proof packaging (vacuum-sealed)

Measured example of temperature profile with our hot-air reflow oven for product testing

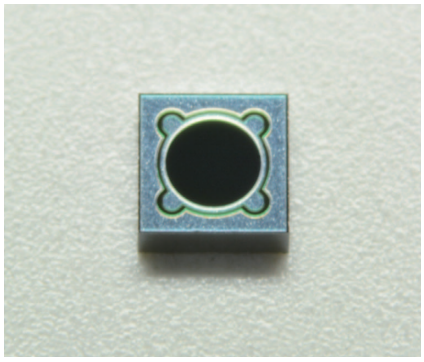


· This product supports lead-free soldering. After unpacking, store it in an environment at a temperature of 30 °C or less and a humidity of 60% or less, and perform soldering within 4 weeks.
· The effect that the product receives during reflow soldering varies depending on the circuit board and reflow 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.

Related products: Metal package, bare chip type



Metal package S5972



Bare chip type S5972-04

Similar products are available: the metal package S5972 and the bare chip type S5972-04.

Related information

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

■ Precautions
· Disclaimer
· Surface mount type products

■ Technical information
· Si photodiodes / Application circuit examples

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