

Features

- High sensitivity
- Low dark current
- High reliability
- High linearity

Applications

- Analytical equipment
- Optical measurement equipment

■ General ratings / Absolute maximum ratings

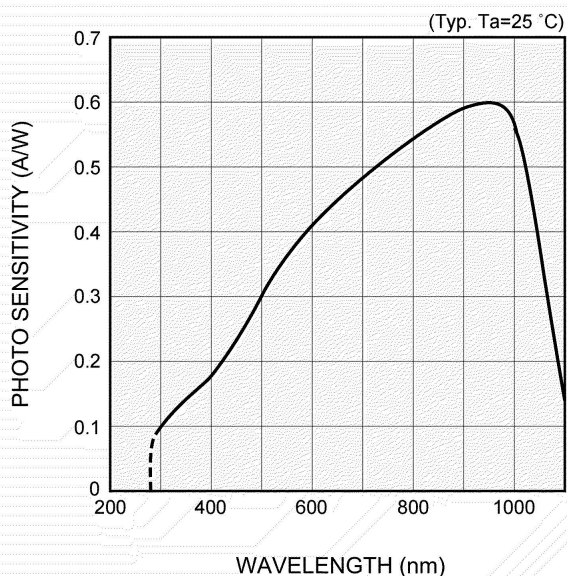
Type No.	Dimensional outline/ Window material *	Package (mm)	Active area size (mm)	Effective active area (mm ²)	Absolute maximum ratings		
					Reverse voltage VR Max. (V)	Operating temperature Topr (°C)	Storage temperature Tstg (°C)
S2386-18K	①/K	TO-18	1.1 × 1.1	1.2	30	-40 to +100	-55 to +125
S2386-18L	②/L						
S2386-5K	③/K	TO-5	2.4 × 2.4	5.7			
S2386-44K			3.6 × 3.6	13			
S2386-45K			3.9 × 4.6	17.9			
S2386-8K			⑤/K	TO-8			

■ Electrical and optical characteristics (Typ. Ta=25 °C, unless otherwise noted)

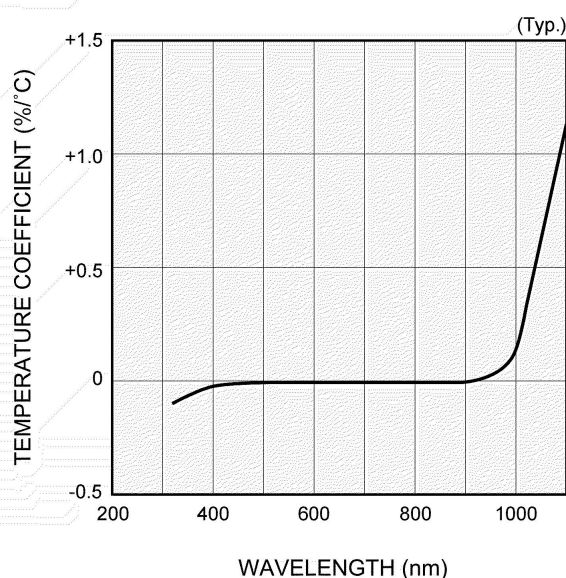
Type No.	Spectral response range λ (nm)	Peak sensitivity wavelength λ_p (nm)	Photo sensitivity S (A/W)				Short circuit current Isc 100 lx		Dark current ID VR=10 mV Max. (pA)	Temp. coefficient of ID TCID (times/°C)	Rise time tr VR=0 V RL=1 kΩ (μs)	Terminal capacitance Ct VR=0 V f=10 kHz (pF)	Shunt resistance Rsh VR=10 mV		NEP VR=0 V $\lambda=\lambda_p$ (W/Hz ^{1/2})
			λ_p	GaP LED 560 nm	He-Ne laser 633 nm	GaAs LED 930 nm	Min. (μA)	Typ. (μA)					Min. (GΩ)	Typ. (GΩ)	
S2386-18K	320 to 1100	960	0.6	0.38	0.43	0.59	1	1.3	2	1.12	0.4	140	5	100	6.8×10^{-16}
S2386-18L							4	5.7							
S2386-5K							4.4	6.0	5						
S2386-44K							9.6	12	20						
S2386-45K							12	17	30						
S2386-8K							26	33	50				0.2	10	2.1×10^{-15}

* Window material K: borosilicate glass, L: lens type borosilicate glass

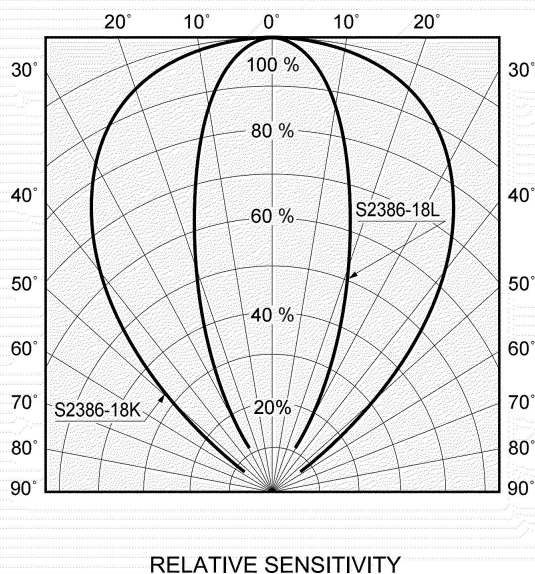
■ Spectral response



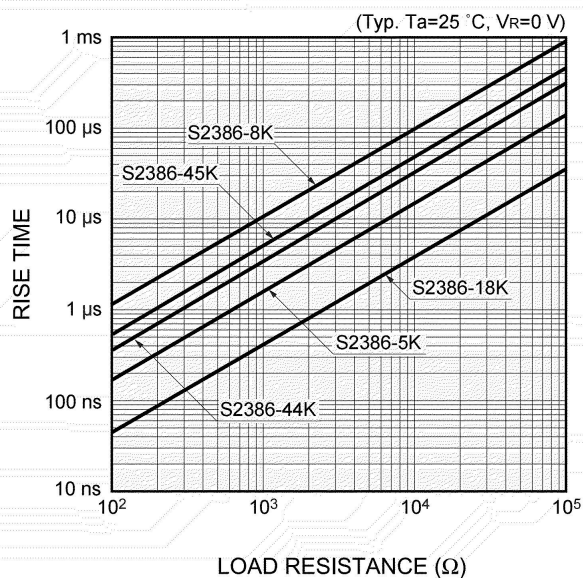
■ Photo sensitivity temperature characteristic



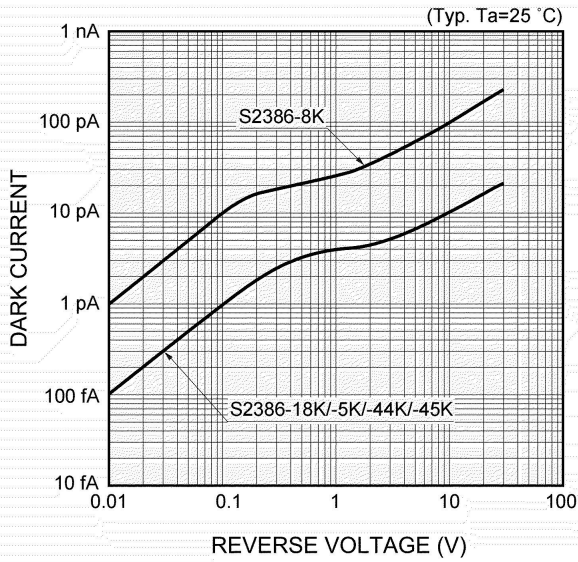
■ Directivity



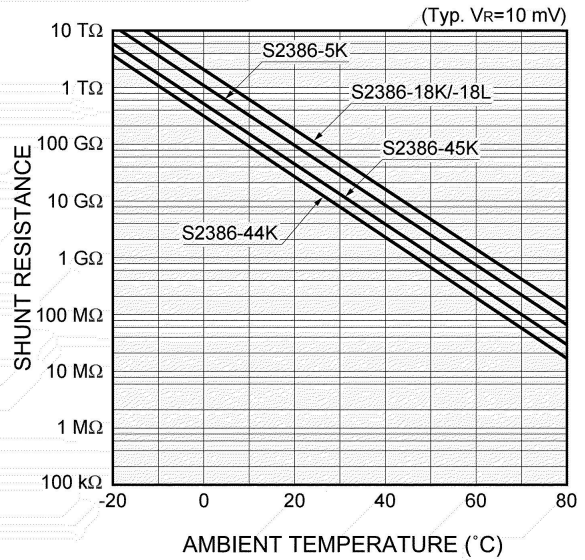
■ Rise time vs. load resistance



■ Dark current vs. reverse voltage

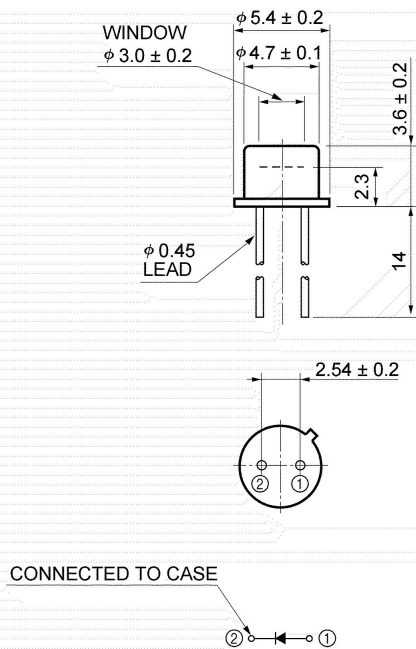


■ Shunt resistance vs. ambient temperature

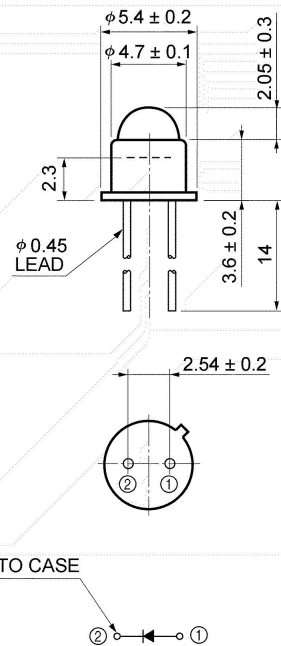


■ Dimensional outlines (unit: mm)

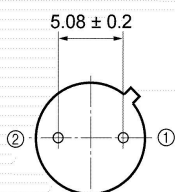
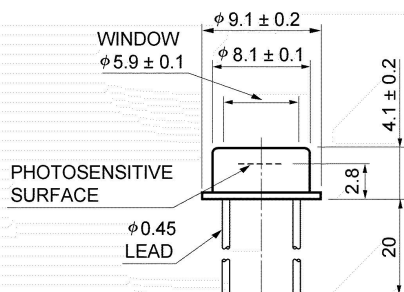
① S2386-18K



② S2386-18L



③ S2386-5K/-44K

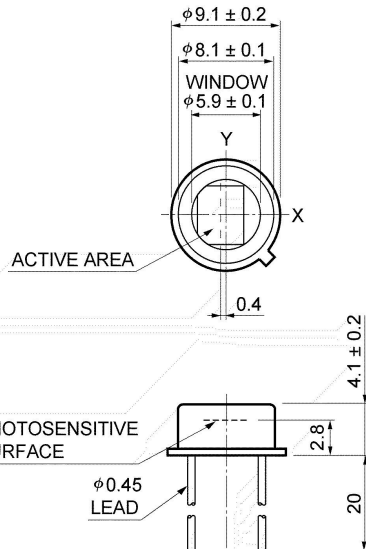


CONNECTED TO CASE



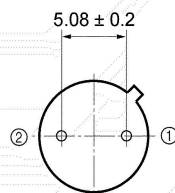
The K type borosilicate glass window may extend a maximum of 0.2 mm above the upper surface of the cap.

④ S2386-45K



PHOTSENSITIVE SURFACE

LEAD



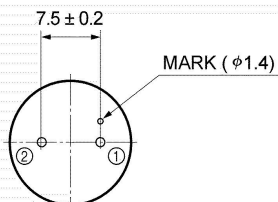
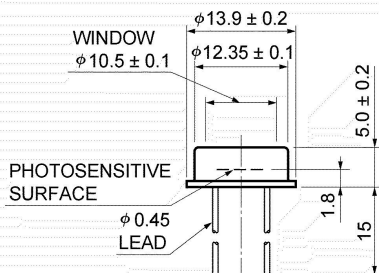
CONNECTED TO CASE



CHIP CENTER TO CAP CENTER
-0.7 ≤ X ≤ -0.1
-0.3 ≤ Y ≤ +0.3

The K type borosilicate glass window may extend a maximum of 0.2 mm above the upper surface of the cap.

⑤ S2386-8K



CONNECTED TO CASE



The K type borosilicate glass window may extend a maximum of 0.2 mm above the upper surface of the cap.

Packing Quantity Specification

1. 200Pcs/1Box,10 Boxes/1 Carton

Label Form Specification

製品名 PRODUCT	
コードNo. CODE No.	
数量 Q'TY	
ロットNo. LOT No.	
備考 REMARKS	
	

- PRODUCT: Part Number
- CODE NO.: Product Serial Number
- QTY: Packing Quantity
- LOT No: Lot Number
- REMARKS:Remarks

Notes

Lead Forming

1. During lead frame bending, the lead frame should be bent at a distance more than 3mm from bottom of the epoxy.

Note: Must fix lead frame and do not touch epoxy before bending to avoid Photodiode broken.

2. Lead forming should be done before soldering.

3. Avoid stressing the Photodiode package during leads forming. The stress to the base may damage the Photodiode's characteristics or it may break the Photodiode.

4. Cut the Photodiode lead frame at room temperature. Cutting the lead frame at high temperatures may cause failure of the Photodiode.

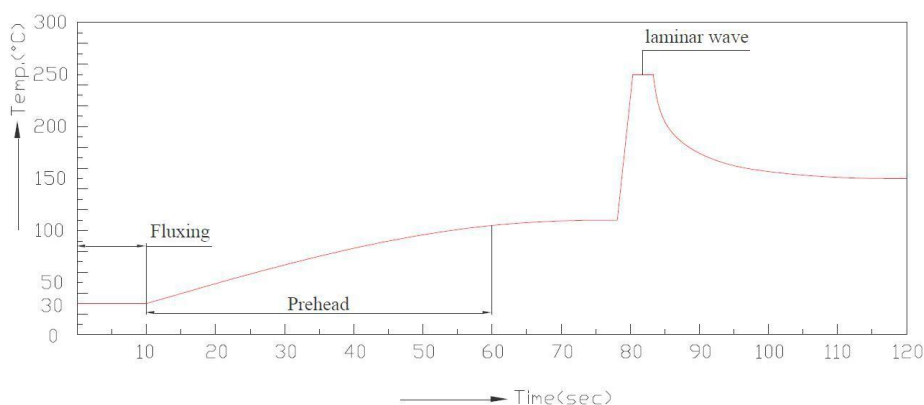
5. When mounting the Photodiode onto a PCB, the PCB holes must be aligned exactly with the lead position of the Photodiode. If the Photodiode are mounted with stress at the leads, it causes deterioration of the epoxy resin and this will degrade the Photodiode.

Soldering

- Careful attention should be paid during soldering. When soldering, leave more than 3mm from solder joint to epoxy bulb, and soldering beyond the base of the tie bar is recommended.
- Recommended soldering conditions:

Hand Soldering		DIP Soldering	
Temp. at tip of iron	300°C Max. (30W Max.)	Preheat temp.	100°C Max. (60 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max
Distance	3mm Min.(From solder joint to epoxy bulb)	Distance	3mm Min. (From solder joint to epoxy bulb)

3. Recommended soldering profile



- Avoiding applying any stress to the lead frame while the Photodiode are at high temperature particularly when soldering.
- Dip and hand soldering should not be done more than one time
- After soldering the Photodiode, the epoxy bulb should be protected from mechanical shock or vibration until the Photodiode return to room temperature.
- A rapid-rate process is not recommended for cooling the Photodiode down from the peak temperature.
- Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the Photodiode.
- Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

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