

## Features

- Large radiant sensitive area (A=50 mm<sup>2</sup>)
- Wide angle of half sensitivity  $\phi = \pm 50^\circ$
- High sensitivity
- Low dark current
- Suitable for visible and near infrared radiation
- Windowless package

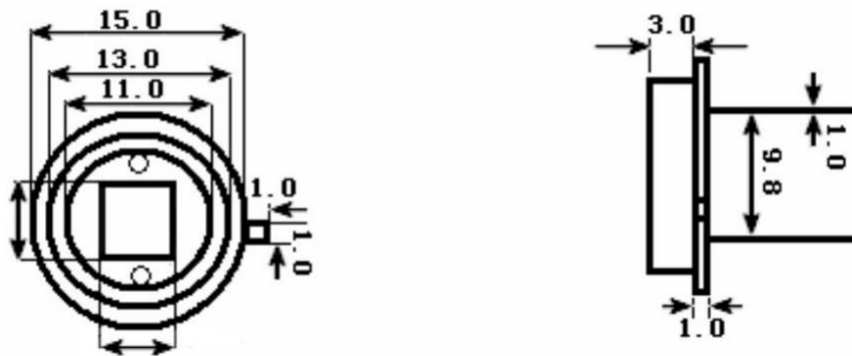
## Application

- High speed photo detector
- Various UV detection

## Description

2CU68 is a planar Silicon PN photodiode in a hermetically sealed short TO-5 case, especially designed for high precision linear applications. Due to its extremely high dark resistance, the short circuit photocurrent is linear over seven decades of illumination level. On the other hand, there is a strictly logarithmic correlation between open circuit voltage and illumination over the same range. The device is equipped with a flat glass window with built in color correction filter, giving an approximation to the spectral response of the human eye.

## PACKAGE DIMENSIONS



### NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25\text{mm}$  (.010") unless otherwise noted.
3. Lead spacing is measured where the leads emerge from the package.

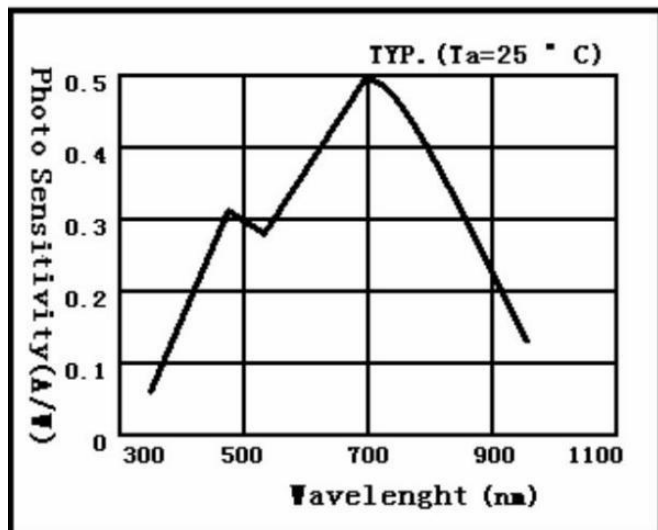
**ABSOLUTE MAXIMUM RATINGS AT TA =25°C**

Parameter	Symbol	Value	Unit
Reverse voltage	Vr Max.	40	v
Operating temperature	Topr	-20 to +65	°C
Storage temperature	Tstg	-55 to +80	°C

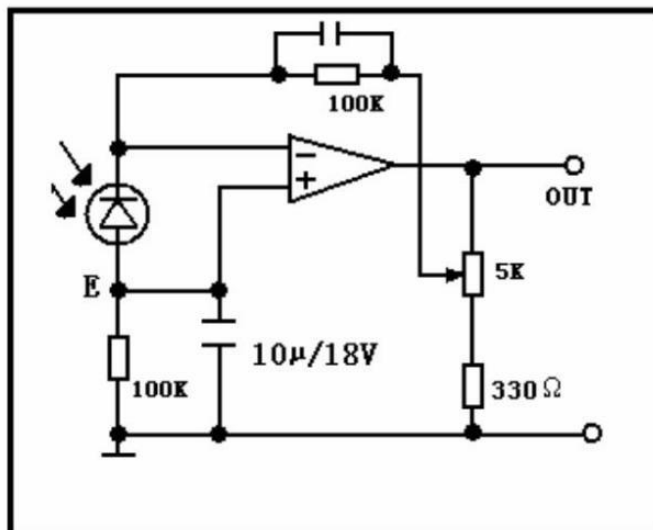
**ELECTRICAL AND OPTICAL CHARACTERISTICS(TA=25°C)**

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	$\lambda$		-	300 to 1000	-	nm
Peak sensitivity wavelength	$\lambda_p$		-	700	-	nm
Photo sensitivity	S	Isc=40 $\mu$ A	0.4	0.52	-	mA/mW
Dark current	ID	Vr=2 V	-	0.1		$\mu$ A
Terminal capacitance	Ct	Vr=0 V, f=10 kHz	-	4	-	nF
Rise time	tr	Vr=0 V, RL=1 k $\Omega$ 10 to 90 %	-	9	-	$\mu$ s

## Spectral Response




## Circuit



## Packing Quantity Specification

1. 50Pcs/1Bag,20 Bag/1Box
2. 4Boxes/1Carton

## 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.

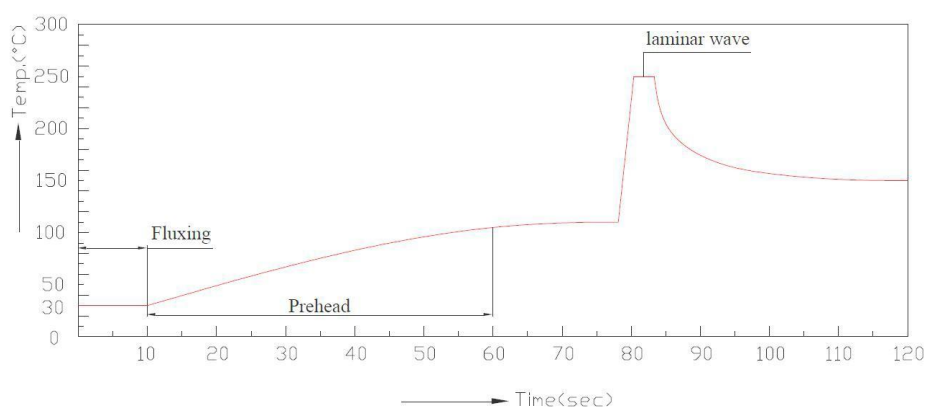
5. When mounting the Photodiode onto a PCB, the PCB holes must be aligned exactly with the lead position of the Photodiode. If the Photodiode are mounted with stress at the leads, it causes deterioration of the epoxy resin and this will degrade the Photodiode.

## 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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