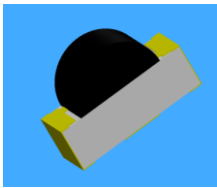


## Chip Photodiode with Right Angle Lens

### EAPDSV3020A2



#### Features

- Fast response time
- High photo sensitivity
- Small junction capacitance
- Package in 8mm tape in “7” diameter reel
- Pb free
- The product itself will remain within RoHS compliant version.

#### Descriptions

- EAPDSV3020A2 is a high speed and high sensitive PIN photodiode in miniature flat top view lens SMD package and it is molded in a black plastic. The device is Spectrally matched to infrared emitting diode.

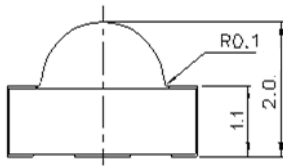
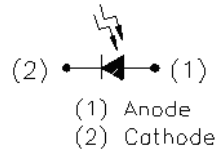
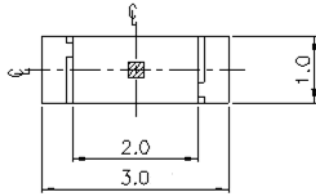
#### Applications

- High speed photo detector
- Copier
- Game machine

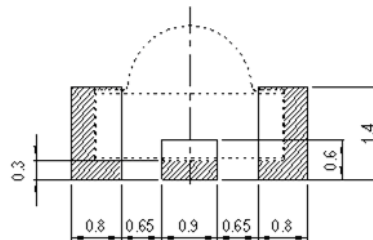
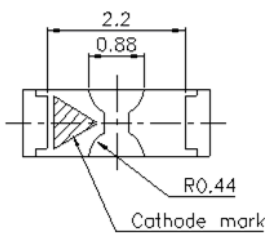
#### Device Selection Guide

Part Category	Chip Material	Lens Color
EAPDSV3020A2	Silicon	Black

### Package Dimensions



For reflow soldering (propose)



- Notes:** 1.All dimensions are in millimeters  
 2.Tolerances unless dimensions  $\pm 0.1\text{mm}$

### Absolute Maximum Ratings ( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Rating	Unit
Reverse Voltage	$V_R$	32	V
Operating Temperature	$T_{opr}$	-25 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40 ~ +100	$^\circ\text{C}$
Soldering Temperature *1	$T_{sol}$	260	$^\circ\text{C}$
Power Dissipation at(or below) 25 $^\circ\text{C}$ Free Air Temperature	$P_c$	150	mW

**Notes:** \*1:Soldering time  $\leq 5$  seconds.

**Electro-Optical Characteristics (Ta=25°C)**

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Range Of Spectral Bandwidth	$\lambda_{0.5}$	---	730	---	1100	nm
Wavelength Of Peak Sensitivity	$\lambda_p$	---	---	940	---	nm
Open-Circuit Voltage	$V_{OC}$	$E_e=1mW/cm^2$ $\lambda_p=875nm$	---	0.42	---	V
Short-Circuit Current	$I_{SC}$	$E_e=1mW/cm^2$ $\lambda_p=875nm$	---	1.3	---	$\mu A$
Reverse Light Current	$I_L$	$E_e=1mW/cm^2$ $\lambda_p=875nm$ $V_R=5V$	1.3	1.5	---	$\mu A$
Dark Current	$I_D$	$E_e=0mW/cm^2$ $V_R=10V$	---	---	10	nA
Reverse Breakdown Voltage	$V_{BR}$	$E_e=0mW/cm^2$ $I_R=100\mu A$	33	170	---	V
Total Capacitance	$C_t$	$E_e=0mW/cm^2$ $f=1MHz$ $V_R=5V$	---	2	---	pF
Rise Time	$t_r$	$V_R=5V$ $R_L=1000\Omega$	---	6	---	ns
Fall Time	$t_f$		---	6	---	
View Angle	2 $\theta$ 1/2	$V_R=5V(X)$	---	130	---	deg
		$V_R=5V(Y)$	---	130	---	

**Typical Electro-Optical Characteristics Curves**

Fig.1 Power Dissipation vs. Ambient Temperature

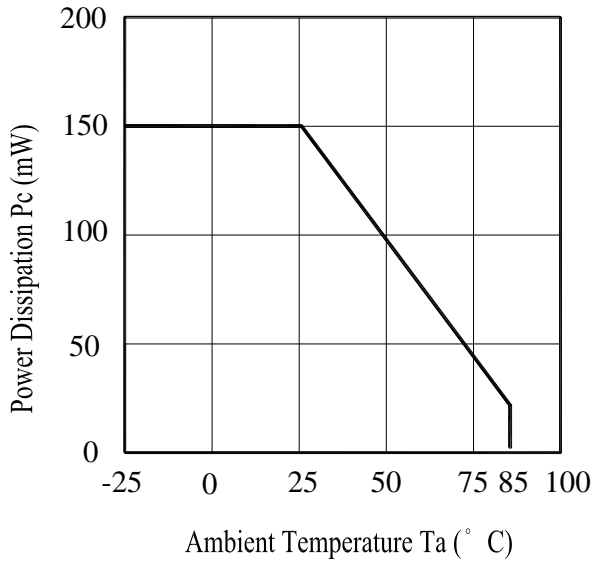


Fig.2 Spectral Sensitivity

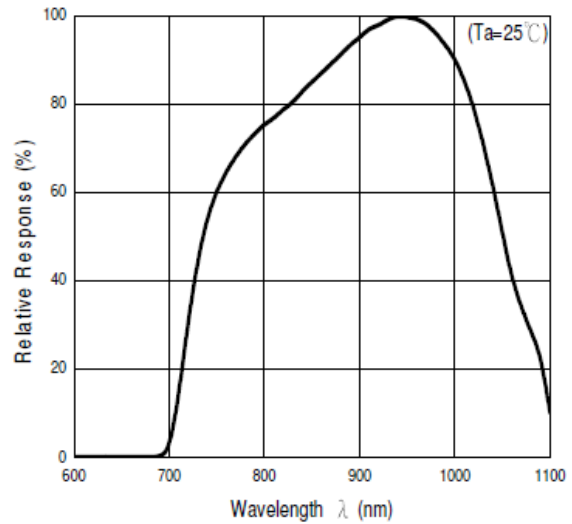


Fig.3 Dark Current vs. Ambient Temperature

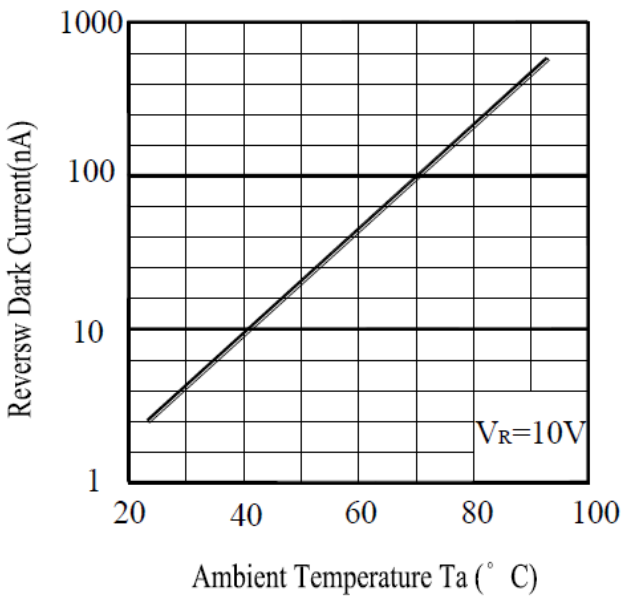
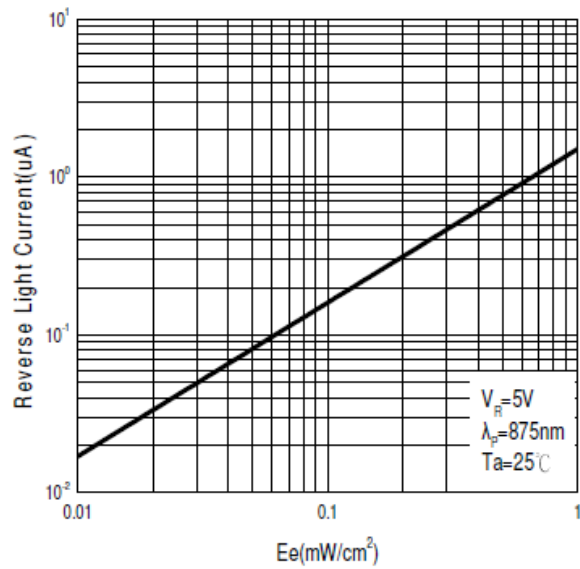


Fig.4 Collector Current vs. Ee



**Typical Electro-Optical Characteristics Curves**

Fig.5 Terminal Capacitance vs.

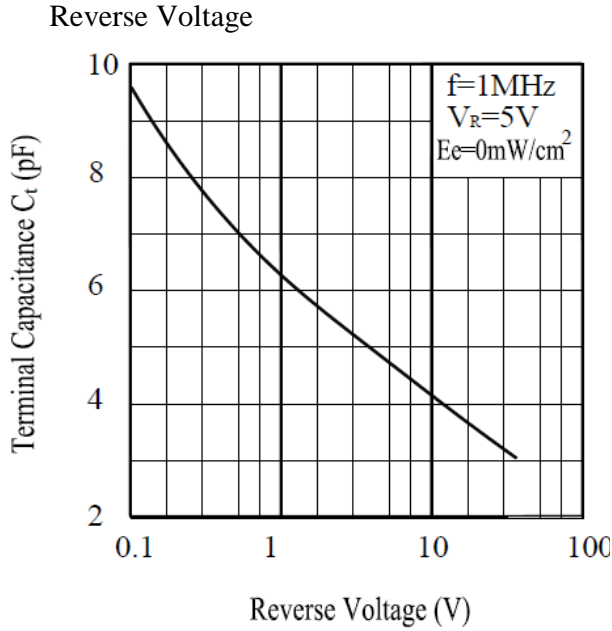


Fig.6 Response Time vs.

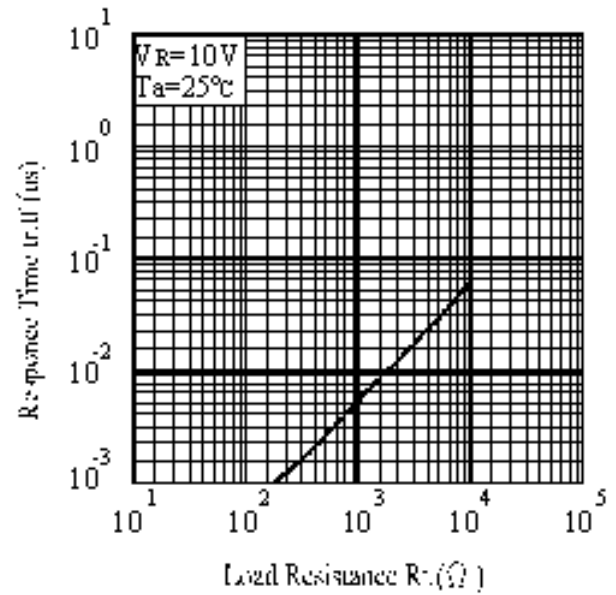
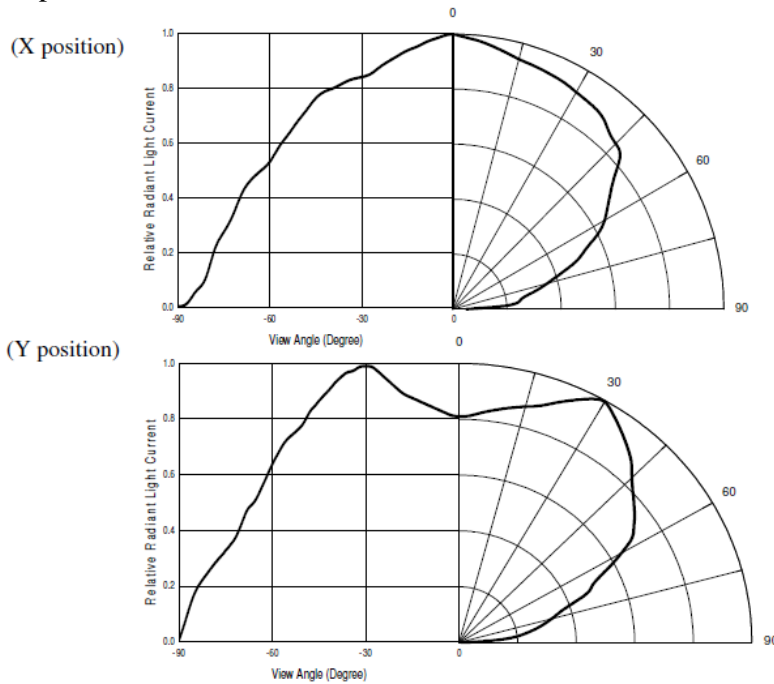


Fig.7 Relative Light Current vs.

Angular Displacement



## Precautions For Use

### 1. Over-current-proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

### 2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.

2.3 The LEDs should be used within a year.

2.4 After opening the package, the LEDs should be kept at 30°C or less and 60%RH or less.

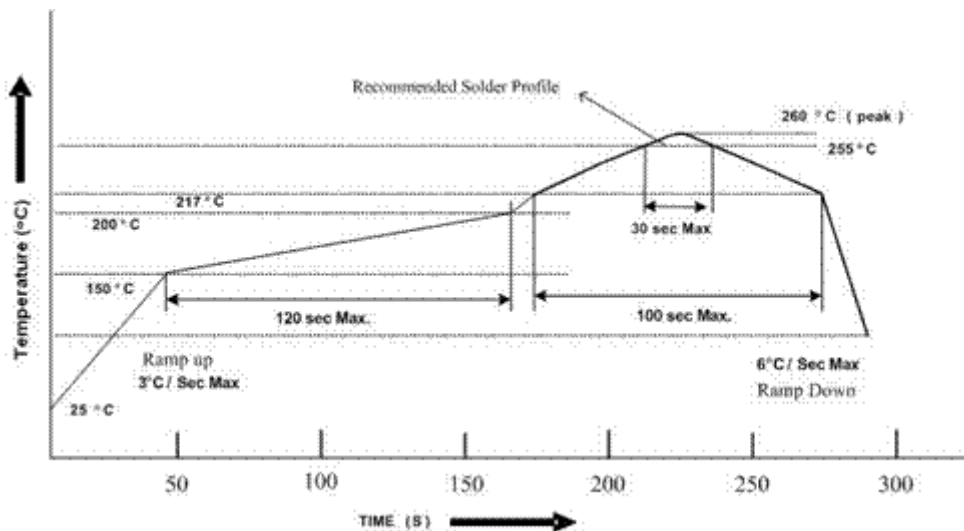
2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

2.6 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60±5°C for 48 hours.

### 3. Soldering Condition

#### 3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

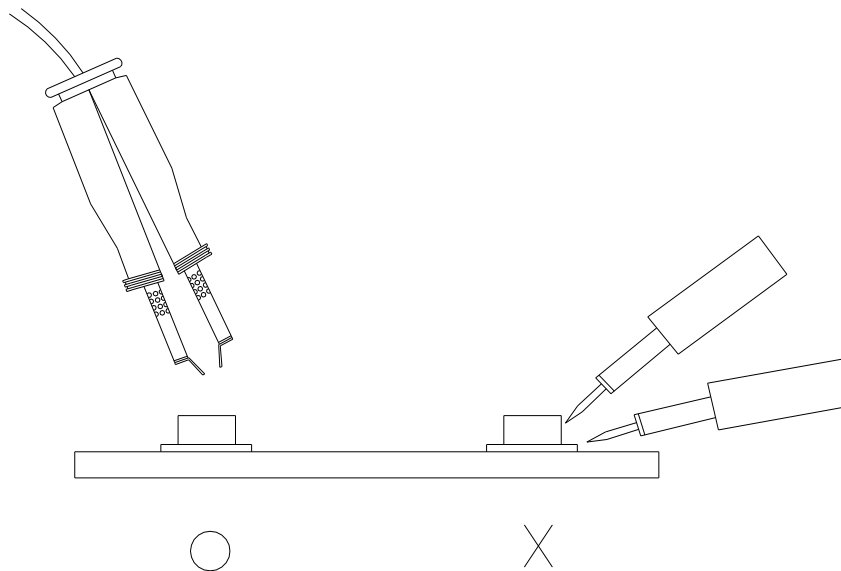
3.4 After soldering, do not warp the circuit board.

#### 4. Soldering Iron

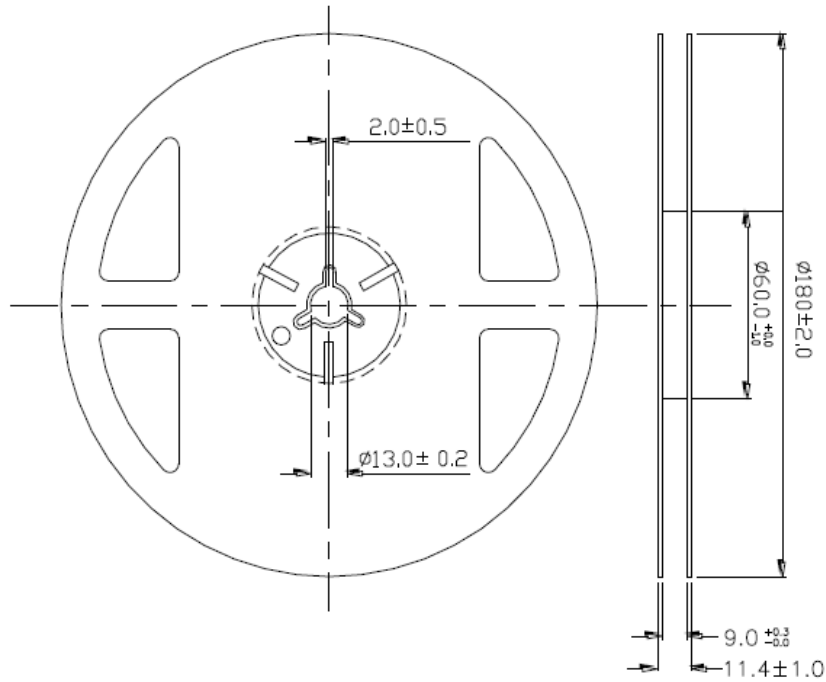
Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

#### 5. Repairing

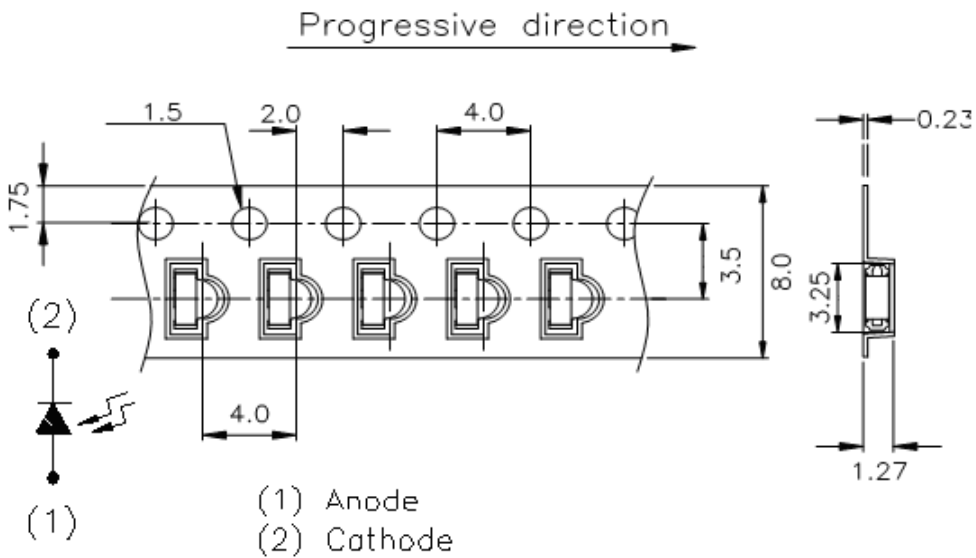
Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



**Package Dimensions**



**Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel :**



**Unit:mm**



## Label Form Specification

The diagram shows a rectangular label form with the following elements:

- Top left: A circle containing the letters "Pb".
- Top center: A rectangular box containing the text "EVERLIGHT AMERICA".
- Top right: An empty circle.
- Below "EVERLIGHT AMERICA": The text "CPN: XXXXXXXXXXXX" and "P/N: XXXXXXXXXXXX".
- Below "P/N": A barcode.
- Below the barcode: The text "XXXXXXXXXXXXXXXXXXXXX".
- Below "XXXXXXXXXXXXXXXXXXXXX": The text "QTY: XXXX" and "CAT: XXX".
- Below "QTY: XXXX": A barcode.
- Below "CAT: XXX": The text "HUE: XXX" and "REF: XXX".
- Below "HUE: XXX": The text "LOT NO: XXXXXXXXXXXXXXXXXXXX".
- Below "LOT NO: XXXXXXXXXXXXXXXXXXXX": A barcode.
- Below the barcode: The text "REFERENCE: XXXXXXXXXXXX".
- Below "REFERENCE: XXXXXXXXXXXX": A barcode.
- Bottom center: The text "MADE IN TAIWAN".
- Right side: A small rectangular box containing the text "RoHS".

CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

## Notes

1. Above specification may be changed without notice. Everlight Americas will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. Everlight Americas assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
3. These specification sheets include materials protected under copyright of Everlight Americas corporation. Please don't reproduce or cause anyone to reproduce them without Everlight Americas's consent.