

### 1.9mm Round Subminiature“ Z-Bend” Lead Photodiode EAPDSZ2120A0



#### Features

- Fast response time
- High photo sensitivity
- Small junction capacitance
- Compatible with infrared and vapor phase reflow solder process.
- Pb free
- The product itself will remain within RoHS compliant version.

#### Descriptions

- EAPDSZ2120A0 is a high speed and high sensitive PIN photodiode in miniature top view lens SMD package and it is molded in a black plastic .The device is spectrally matched with the infrared emitting diode.

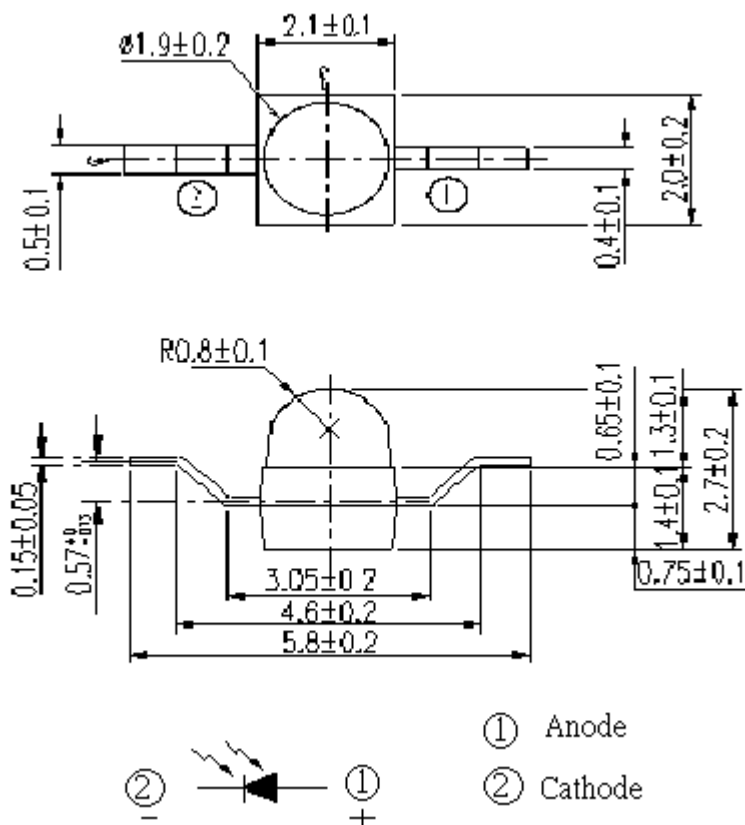
#### Applications

- Infrared applied system
- Copier
- Sensor in automotive project

#### Device Selection Guide

| Part Category | Chip Material | Lens Color |
|---------------|---------------|------------|
| EAPDSZ2120A0  | Silicon       | Black      |

## Package Dimensions



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

## Absolute Maximum Ratings (Ta=25°C)

| Parameter                                                   | Symbol    | Rating    | Units |
|-------------------------------------------------------------|-----------|-----------|-------|
| Reverse Voltage                                             | $V_R$     | 32        | V     |
| Operating Temperature                                       | $T_{opr}$ | -25 ~ +85 | °C    |
| Storage Temperature                                         | $T_{stg}$ | -40 ~ +85 | °C    |
| Soldering Temperature *1                                    | $T_{sol}$ | 260       | °C    |
| Power Dissipation at(or below)<br>25°C Free Air Temperature | $P_d$     | 150       | mW    |

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

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

| Parameter                      | Symbol          | Condition                                               | Min | Typ | Max  | Unit    |
|--------------------------------|-----------------|---------------------------------------------------------|-----|-----|------|---------|
| Rang of Spectral Bandwidth     | $\lambda_{0.5}$ | ---                                                     | 730 | --- | 1100 | nm      |
| Wavelength of Peak Sensitivity | $\lambda_p$     | ---                                                     | --- | 940 | ---  | nm      |
| Short-Circuit Current          | $I_{SC}$        | Ee=1mW/cm <sup>2</sup><br>$\lambda_p=875nm$             | --- | 4   | ---  | $\mu A$ |
| Reverse Light Current          | $I_L$           | Ee=1mW/cm <sup>2</sup><br>$\lambda_p=875nm$<br>$V_R=5V$ | 1   | 4   | ---  | $\mu A$ |
| Reverse Dark Current           | $I_D$           | Ee=0mW/cm <sup>2</sup><br>$V_R=10V$                     | --- | --- | 10   | nA      |
| Reverse Breakdown Voltage      | $V_{BR}$        | Ee=0mW/cm <sup>2</sup><br>$I_R=100 \mu A$               | 32  | 170 | ---  | V       |

## Typical Electro-Optical Characteristics Curves

Fig.1 Spectral Sensitivity

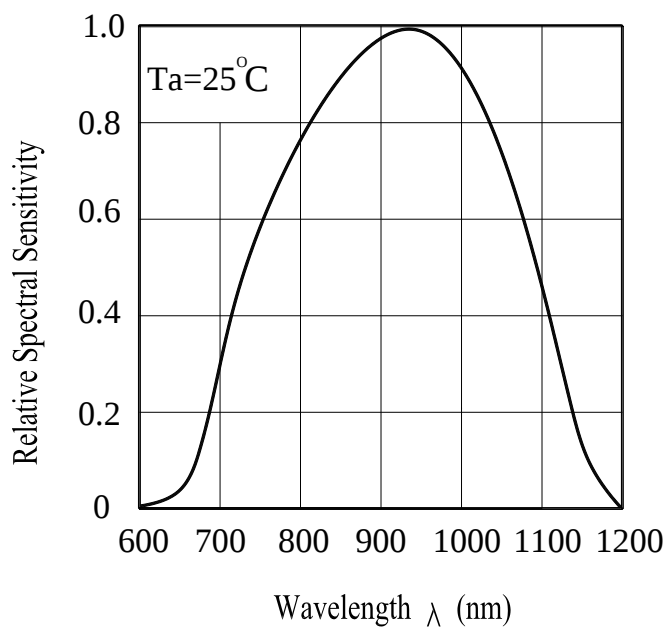
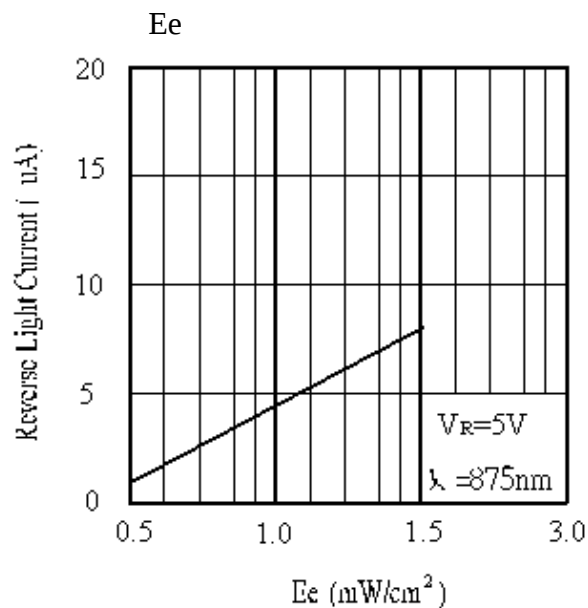


Fig.2 Reverse Light Current vs.  $E_e$



## 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.

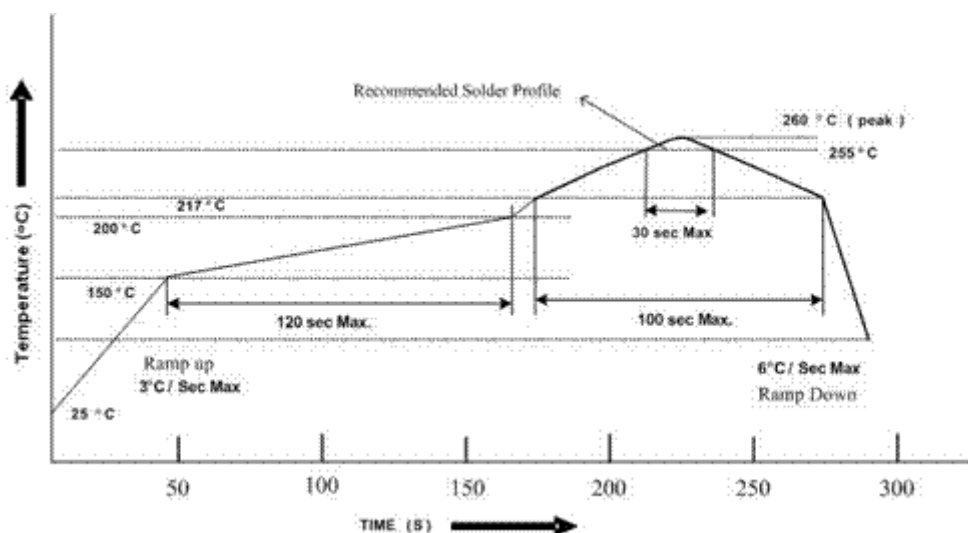
2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

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.

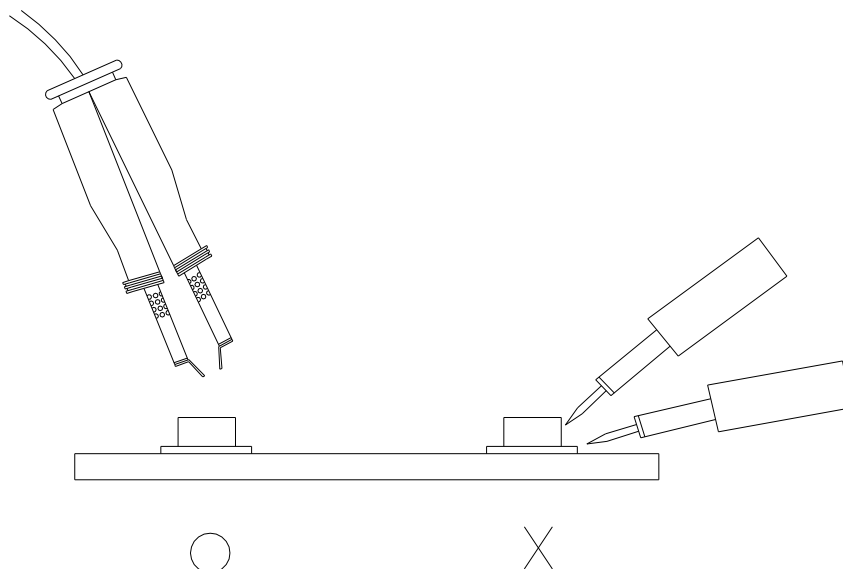
3.4 After soldering, do not warp the circuit board.

#### 4. Soldering Iron

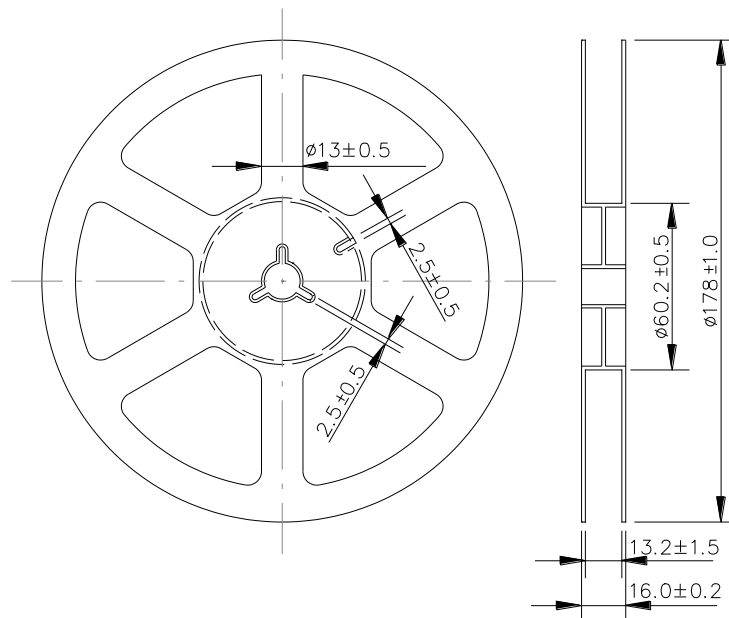
Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of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

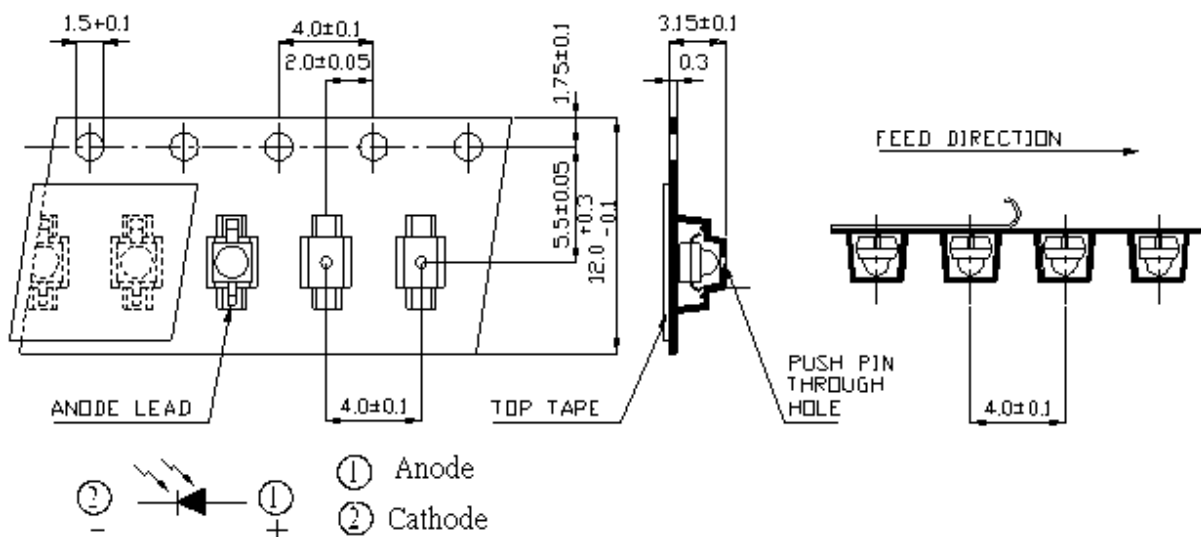


## Package Dimensions



**Note:** The tolerances unless mentioned are  $\pm 0.1$ , unit=mm.

## Carrier Tape Dimensions: (Quantity: 1000PCS/Reel)



**Note:** The tolerances unless mentioned are  $\pm 0.1$ , unit=mm.

## Label Form Specification

The diagram shows a rectangular label with the following elements:

- EVERLIGHT AMERICA** logo at the top center.
- RoHS** logo on the right side.
- CPN: XXXXXXXXXX** and **P/N: XXXXXXXXXX** at the top left.
- A barcode below the CPN and P/N fields.
- QTY: XXXX** and **LOT NO: XXXXXXXXXXXXXXXXXXXX** on the left side.
- CAT: XXX**, **HUE: XXX**, and **REF: XXX** on the right side.
- REFERENCE: XXXXXXXXXX** at the bottom left.
- MADE IN TAIWAN** at the bottom center.

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.