

Silicon Planar PIN Photodiode

EAPDSZ4439A4



Features

- High sensitivity
- Low capacitance
- Short switching time
- Wide temperature range
- Small package
- Pb free
- The product itself will remain within RoHS compliant version.

Descriptions

- EAPDSZ4439A4 is high sensitivity, fast switching times, low capacitance, compact size, and lack of measurable degradation make it suitable for diverse applications, such as TV and appliance remote control, IR sound transmission, video recorders, and measurement and control.

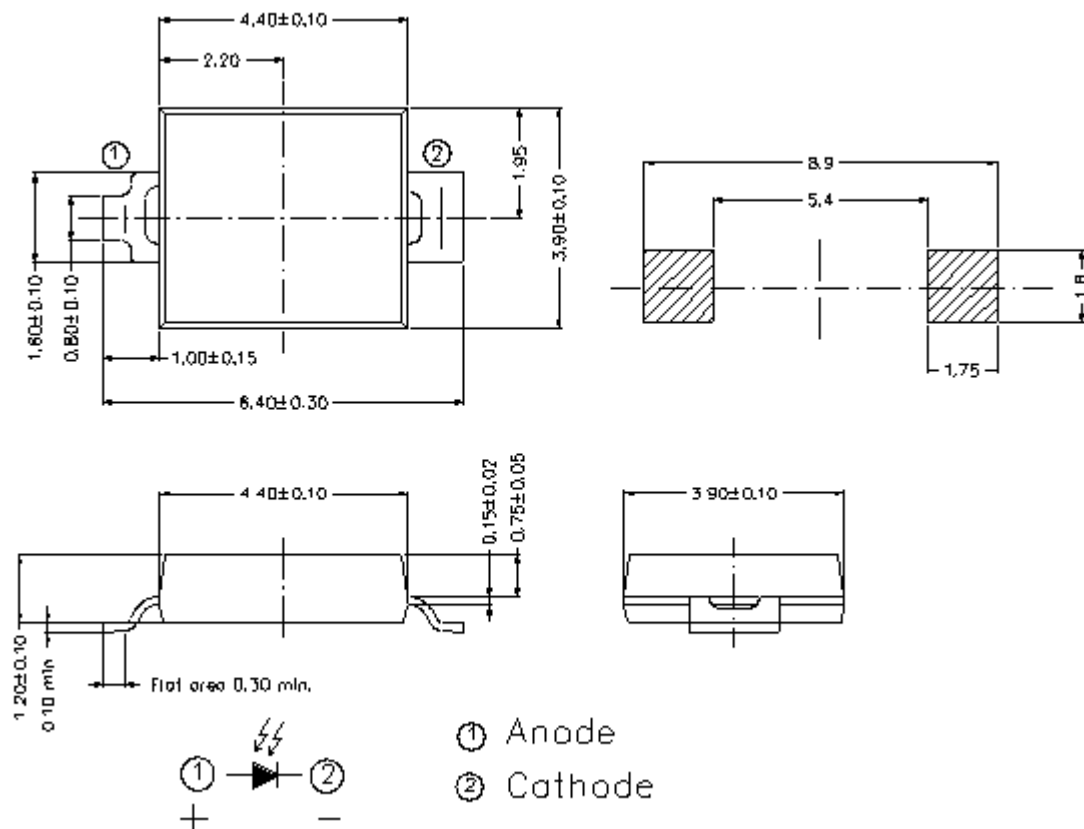
Applications

- High speed photo detector
- Copier
- Elevator

Device Selection Guide

Part Category	Chip Material	Lens Color
EAPDSZ4439A4	Silicon	Water clear

Package Dimensions



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

Notes: *1:Soldering time ≤ 5 seconds.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Rang Of Spectral Bandwidth	$\lambda_{0.5}$	---	400	---	1100	nm
Wavelength Of Peak Sensitivity	λ_p	---	---	940	---	nm
Short- Circuit Current	I_{SC}	Ee=1mW/cm ² $\lambda_p=875nm$	---	35	---	μA
Reverse Light Current	I_L	Ee=1mW/cm ² $\lambda_p=875nm$ $V_R=5V$	17	25	---	μA
Reverse Dark Current	I_D	Ee=0mW/cm ² $V_R=10V$	---	5	30	nA
Reverse Breakdown Voltage	V_{BR}	Ee=0mW/cm ² $I_R=100 \mu A$	32	170	---	V
Temperature coefficient of V_{oc}	$TK_{V_{oc}}$	Ee=1mW/cm ² $\lambda_p=940nm$	---	-2.6	---	mV/K
Temperature coefficient of I_{sc}	$TK_{I_{sc}}$	Ee=1mW/cm ² $\lambda_p=940nm$	---	-0.1	---	%/K

Typical Electro-Optical Characteristics Curves

Fig.1 Spectral Sensitivity

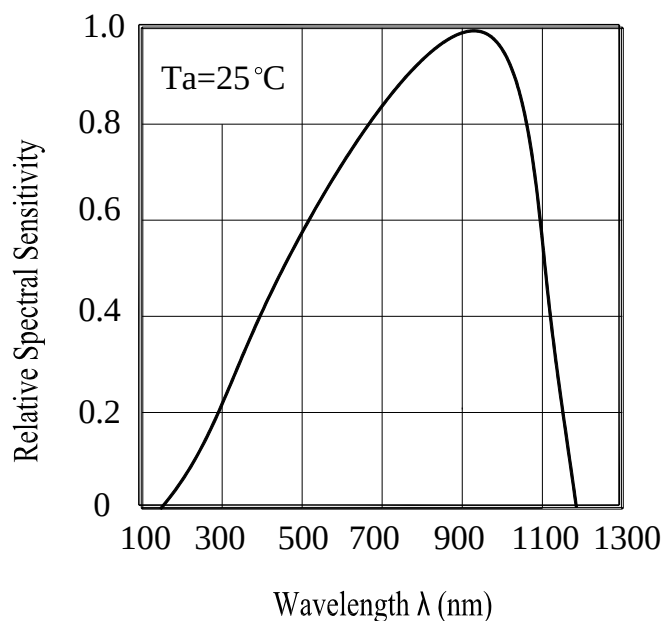
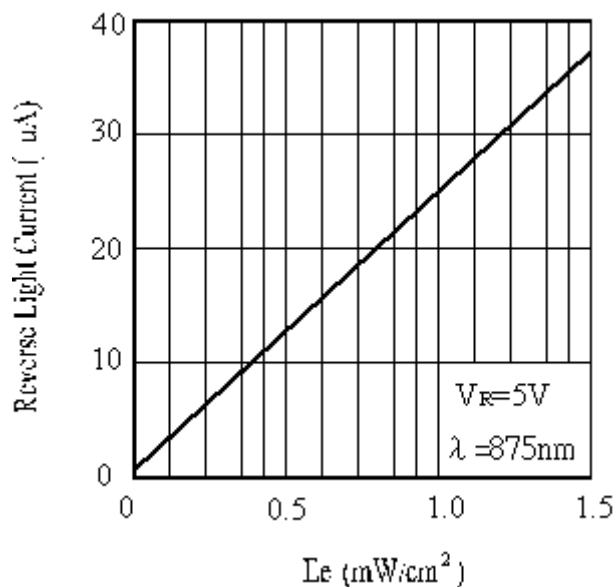


Fig. 2 Reverse Light Current vs. E_e



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.

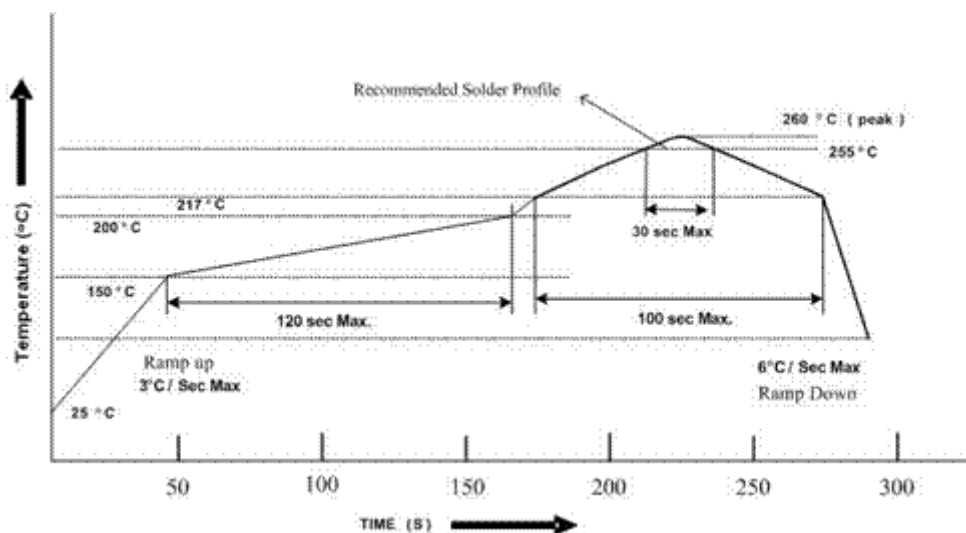
2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

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.

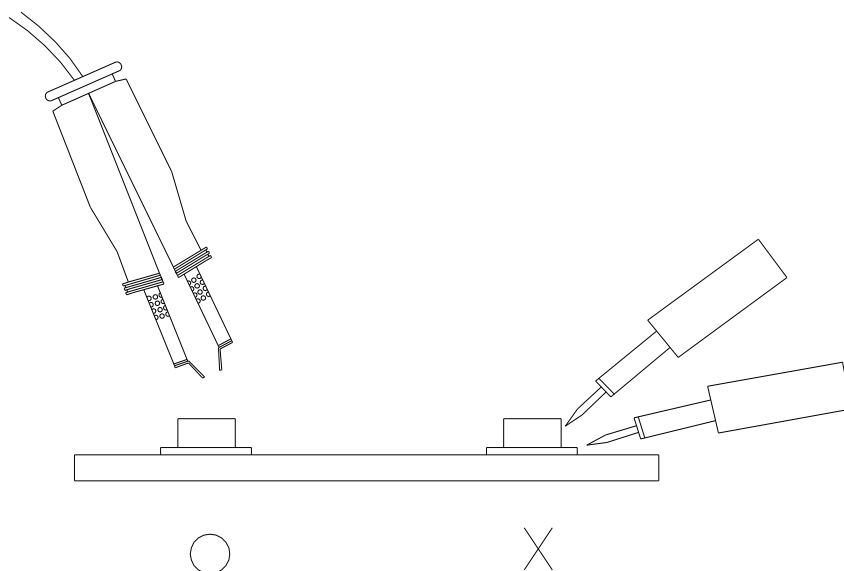
3.4 After soldering, do not warp the circuit board.

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.



ions

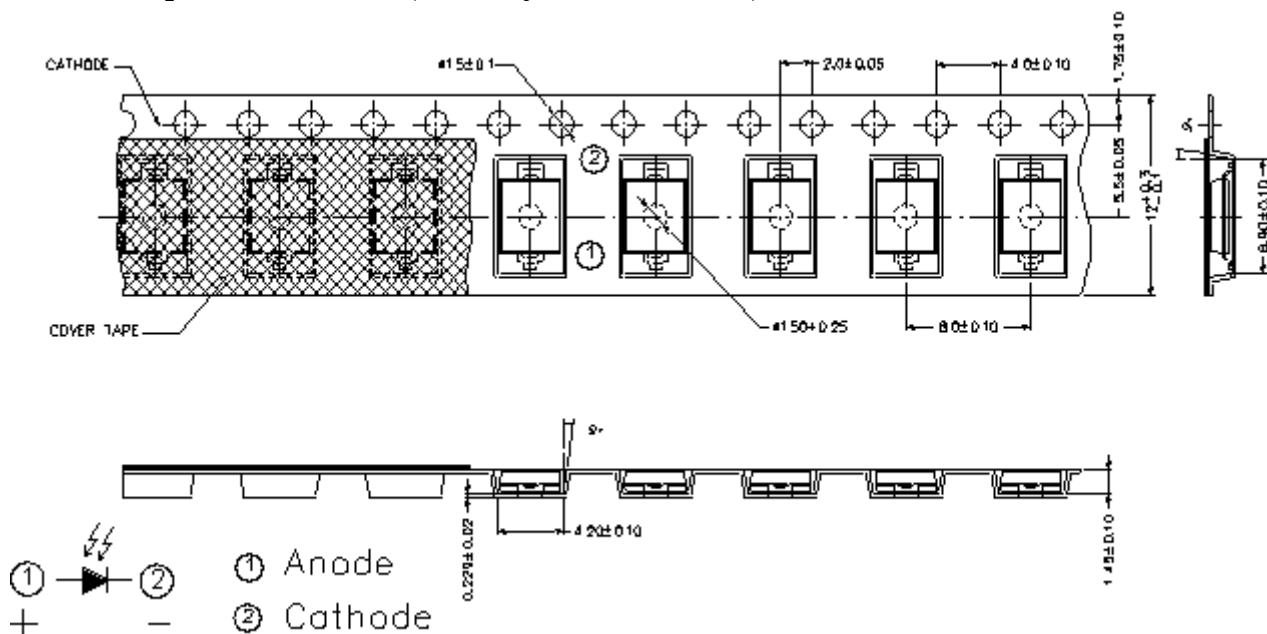
Technical drawing of a circular mechanical part, showing a top view and a side view.

Top View Dimensions:

- Central hub diameter: $\phi 13 \pm 0.5$
- Spoke width: 2.5 ± 0.5

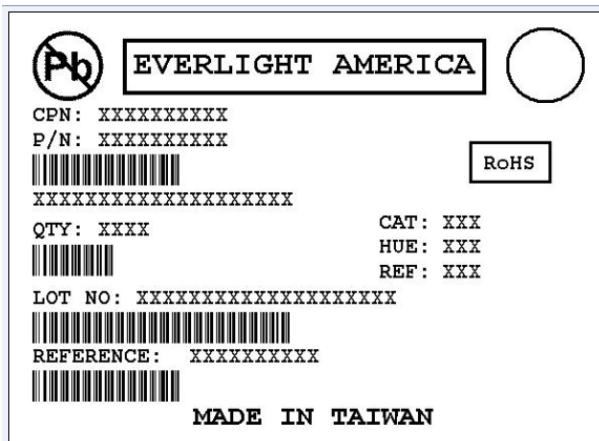
Side View Dimensions:

- Total height: 178 ± 1.0
- Central hub height: $\phi 60.2 \pm 0.5$
- Base thickness: 13.2 ± 1.5
- Bottom flange thickness: 16.0 ± 0.2

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

7

Label Form Specification



The diagram shows a rectangular label with the following elements:

- Top Left:** A circular logo with the letters "Pb" inside.
- Top Center:** A rectangular box containing the text "EVERLIGHT AMERICA".
- Top Right:** A circular logo.
- Below Top Left:** Text "CPN: XXXXXXXXXX" and "P/N: XXXXXXXXXX".
- Below Top Center:** A barcode.
- Below Top Right:** A rectangular box containing the text "RoHS".
- Below Barcode:** Text "XXXXXXXXXXXXXXXXXXXXX".
- Below Text:** Text "QTY: XXXX" and "CAT: XXX".
- Below Text:** Text "HUE: XXX" and "REF: XXX".
- Below Text:** Text "LOT NO: XXXXXXXXXXXXXXXXXXXXX".
- Below Text:** Text "REFERENCE: XXXXXXXXXX".
- Bottom:** A barcode and the text "MADE IN TAIWAN".

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.