

0.8mm Height Flat Top Phototransistor

EAPSR3216A1

Features

- Fast response time
- High photo sensitivity
- Small junction capacitance
- Pb free
- The product itself will remain within RoHS compliant version.

Descriptions

- EAPSR3216A1 is a phototransistor in miniature SMD package which is molded in a black with spherical top view lens. The device is Spectrally matched to visible and infrared emitting diode.

Applications

- Miniature switch
- Counters and sorter
- Position sensor
- Infrared applied system
- Encoder

Device Selection Guide

| Part Category | Chip Material | Lens Color |
|---------------|---------------|------------|
| EAPSR3216A1 | Silicon | Black |

Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Rating | Units |
|---|-----------|-----------|-------|
| Collector-Emitter Voltage | V_{CEO} | 30 | V |
| Emitter-Collector-Voltage | V_{ECO} | 5 | V |
| Collector Current | I_C | 20 | mA |
| 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) 25°C Free Air Temperature | P_d | 75 | mW |

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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 | λ_p | --- | --- | 940 | --- | nm |
| Collector-Emitter Breakdown Voltage | BV_{CEO} | $I_C=500 \mu A$ $E_e=0mW/cm^2$ | 60 | --- | --- | V |
| Emitter-Collector Breakdown Voltage | BV_{ECO} | $I_E=50 \mu A$ $E_e=0mW/cm^2$ | 7 | --- | --- | V |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=5mA$ $E_e=1m W/cm^2$ | --- | --- | 0.4 | V |
| Collector Dark Current | I_{CEO} | $V_{CE}=10V$ $E_e=0mW/cm^2$ | --- | --- | 50 | nA |
| On State Collector Current | $I_{C(ON)}$ | $V_{CE}=5V$ $E_e=1mW /cm^2$ | --- | 1.0 | --- | mA |

Typical Electro-Optical Characteristics Curves

Fig.1 Spectral Sensitivity

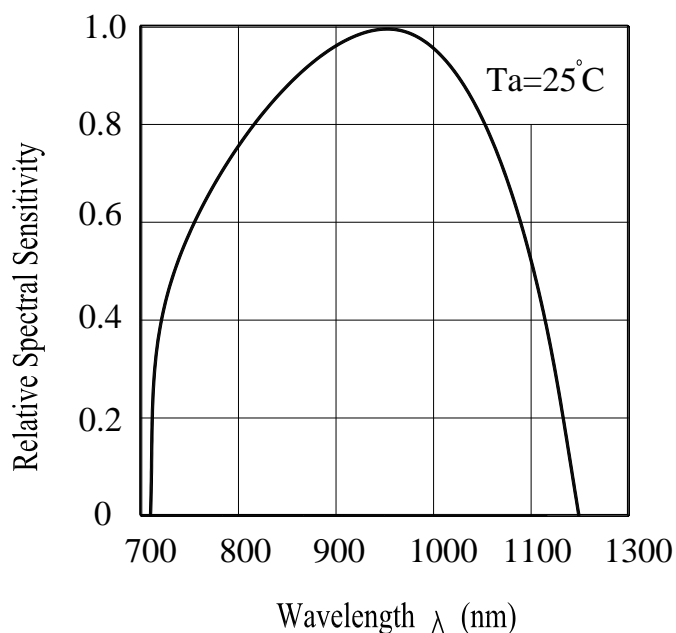


Fig.2 Collector Current vs. Irradiance

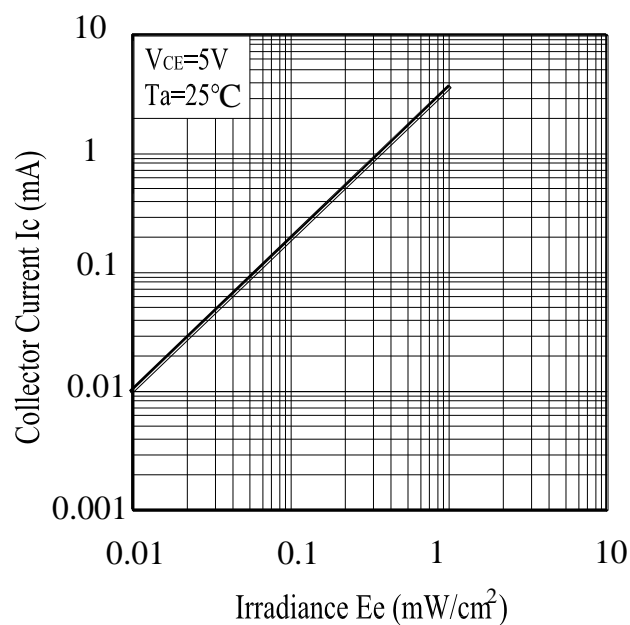
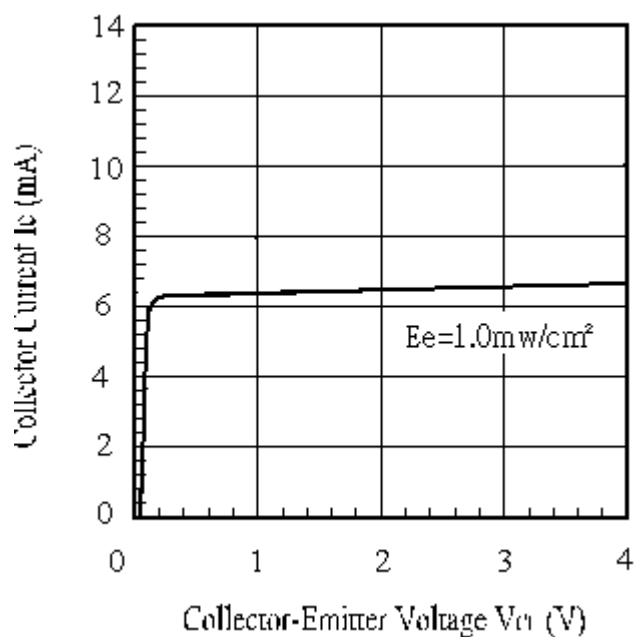


Fig.3 Collector Current vs. Collector-Emitter Voltage



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.

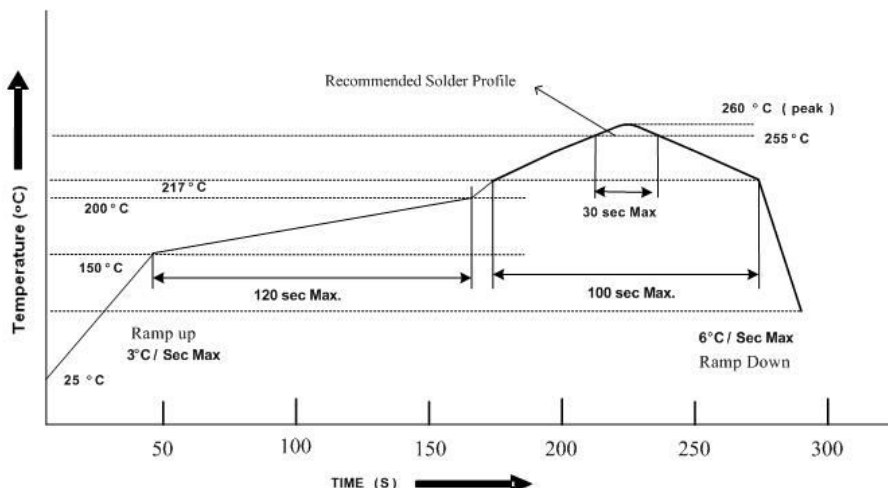
2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

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 : $60 \pm 5^{\circ}\text{C}$ for Min. 24 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.

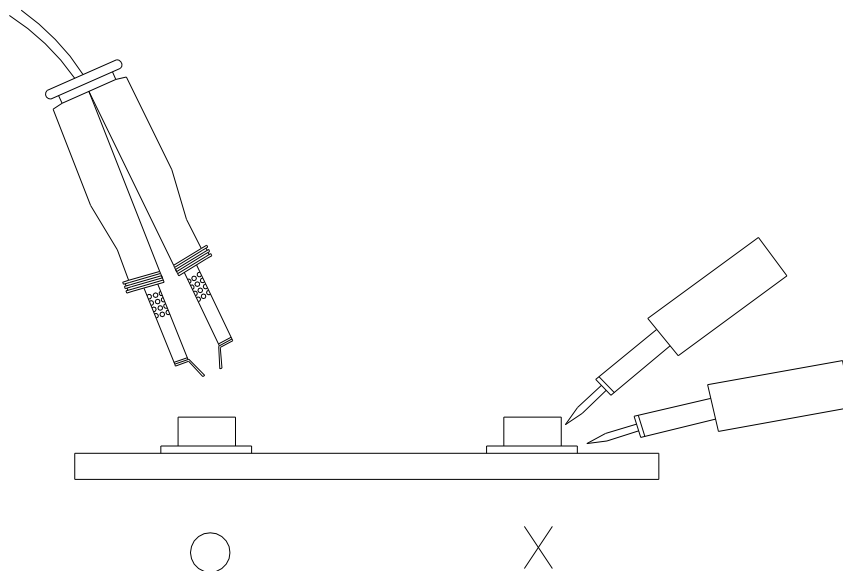
3.4 After soldering, do not warp the circuit board.

4.Soldering Iron

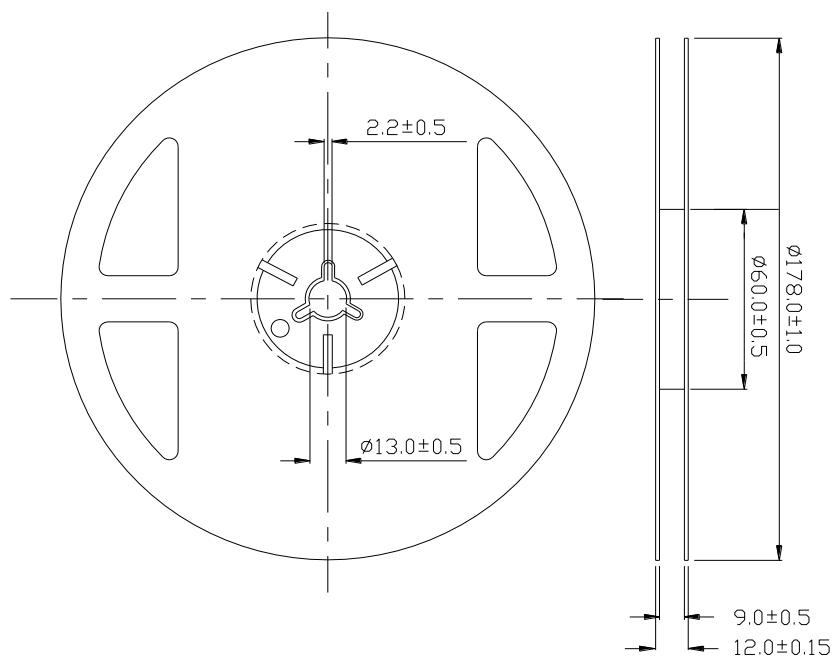
Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of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

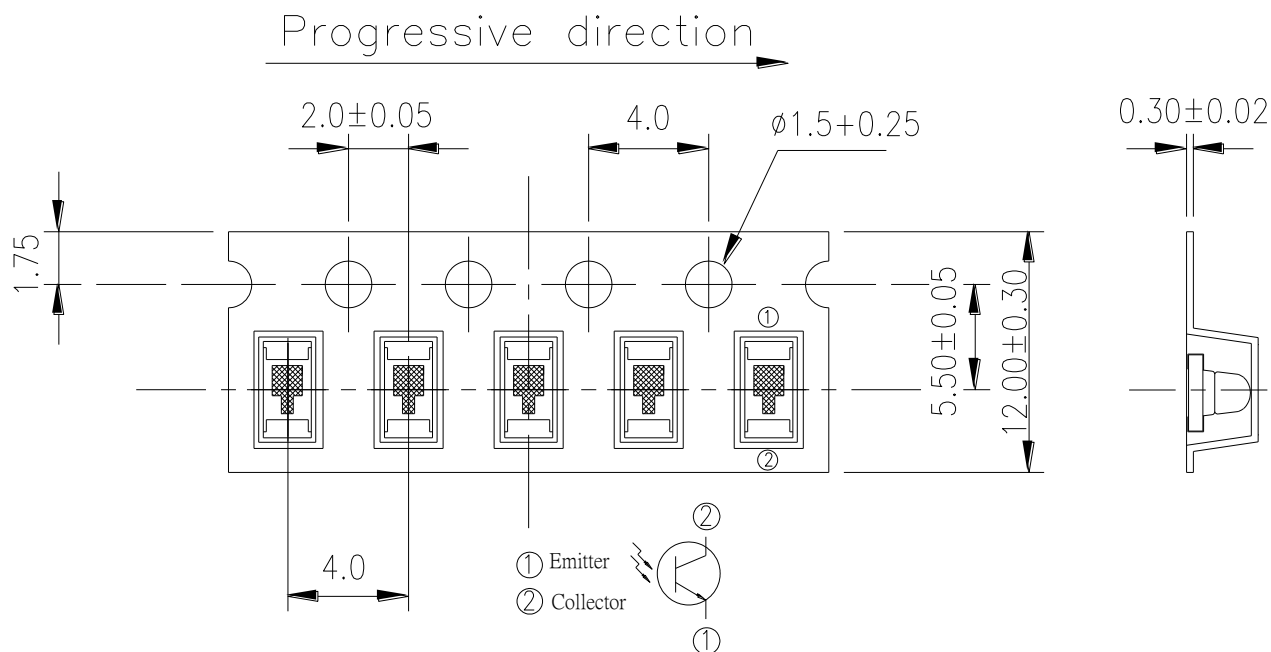


Package Dimensions



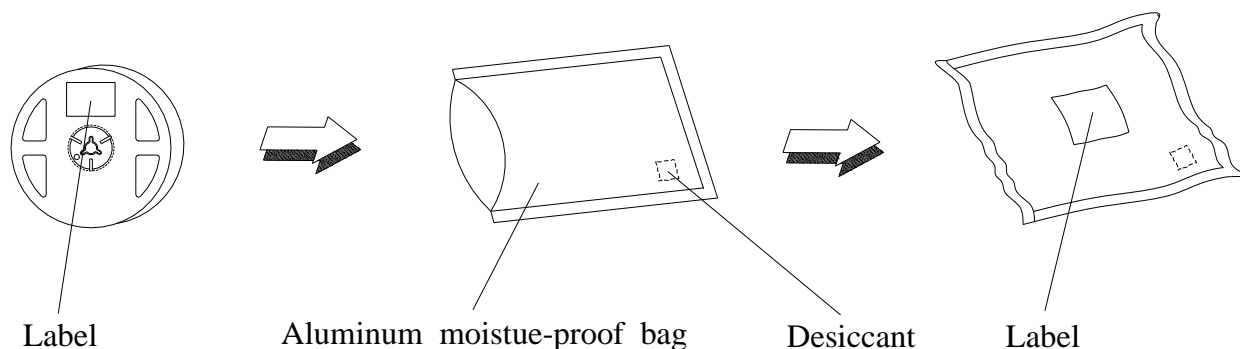
Note: The tolerances unless mentioned are ± 0.1 , unit=mm

Carrier Taping Dimensions: (Quantity: 1500PCS/Reel)



Note: The tolerances unless mentioned are ± 0.1 , unit=mm

Packing Procedure



Label Form Specification

| | | |
|------------------------------|--------------------------|--|
| | EVERLIGHT AMERICA | |
| CPN: XXXXXXXXXXXX | | |
| P/N: XXXXXXXXXXXX | | |
| | | |
| XXXXXXXXXXXXXXXXXXXX | | |
| QTY: XXXX | CAT: XXX | |
| | HUE: XXX | |
| | REF: XXX | |
| LOT NO: XXXXXXXXXXXXXXXXXXXX | | |
| | | |
| REFERENCE: XXXXXXXXXXXX | | |
| | | |
| 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.
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