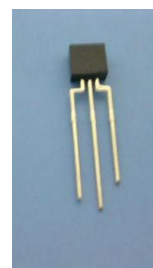


### Side Face Silicon Phototransistor EAPLP04RRAA3

#### Features

- Fast response time
- High photo sensitivity
- Pb free
- This product itself will remain within RoHS compliant version.



#### Description

- EAPLP04RRAA3 is a high speed and high sensitive dual phototransistor molded in a black plastic package with plat side view.
- The device is spectrally matched with IR emitters.

#### Applications

- Mouse
- Optoelectronic Switch
- Photo Interrupter

## Device Selection Guide

| Chip Materials | Lens Color |
|----------------|------------|
| Si             | Black      |

## Absolute Maximum Ratings (Ta=25°C)

| Parameter                                                    | Symbol    | Rating      | Unit |
|--------------------------------------------------------------|-----------|-------------|------|
| 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 | °C   |
| Storage Temperature                                          | $T_{stg}$ | -40 ~ +85°C | °C   |
| Lead Soldering Temperature(*1)                               | $T_{sol}$ | 260         | °C   |
| Power Dissipation at (or below)<br>25°C Free Air Temperature | $P_D$     | 75          | mW   |

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

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

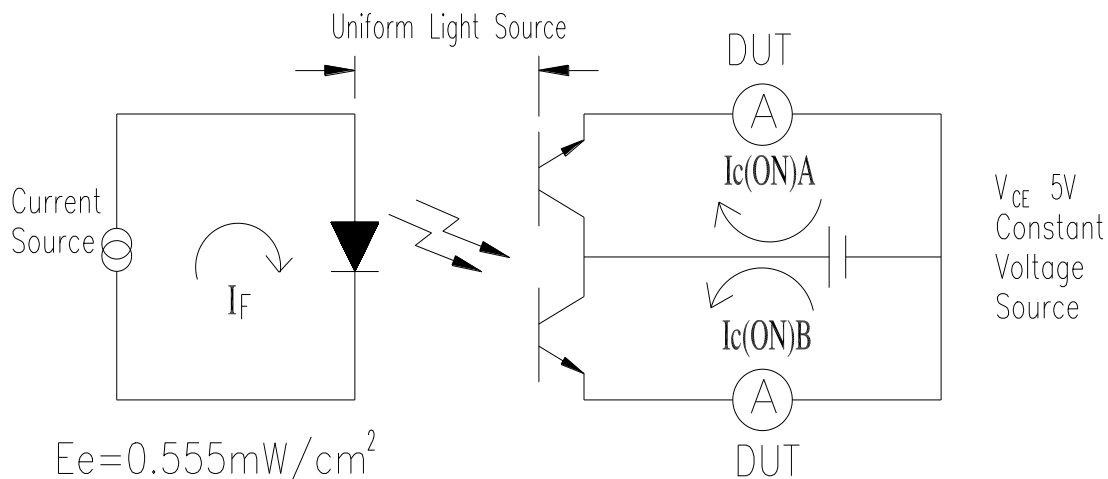
| Parameter                             | Symbol          | Condition                                    | Min | Typ | Max  | Unit    |
|---------------------------------------|-----------------|----------------------------------------------|-----|-----|------|---------|
| Collector – Emitter Breakdown Voltage | $BV_{CEO}$      | $I_C=100\mu A$<br>$E_e=0mW/cm^2$             | 30  | --- | ---  | V       |
| Emitter-Collector Breakdown Voltage   | $BV_{ECO}$      | $I_E=100\mu A$<br>$E_e=0mW/cm^2$             | 5   | --- | ---  | V       |
| Collector-Emitter Saturation Voltage  | $V_{CE(sat)}$   | $I_C=2mA$<br>$E_e=1mW/cm^2$                  | --- | --- | 0.4  | V       |
| Rise Time                             | $t_r$           | $V_{CE}=5V$<br>$I_C=1mA$<br>$R_L=1000\Omega$ | --- | 15  | ---  | $\mu S$ |
| Fall Time                             | $t_f$           |                                              | --- | 15  | ---  |         |
| Collector Dark Current                | $I_{CEO}$       | $E_e=0mW/cm^2$<br>$V_{CE}=20V$               | --- | --- | 100  | nA      |
| On State Collector Current            | $I_{C(on)}$     | $V_{CE}=5V$ ,<br>$E_e=0.555mW/cm^2$          | 129 | --- | 1085 | $\mu A$ |
| Wavelength of Peak Sensitivity        | $\lambda_p$     | ---                                          | --- | 940 | ---  | nm      |
| Rang of Spectral Bandwidth            | $\lambda_{0.5}$ | ---                                          | 760 | --- | 1100 | nm      |

**Test Method For On State Collector Current :**

Condition :  $E_e=0.555\text{mW/cm}^2$  ,  $V_{CE}=5\text{V}$

Test Item : Collector Current [ $I_{C(ON)}$ ]

Unit :  $\mu\text{A}$



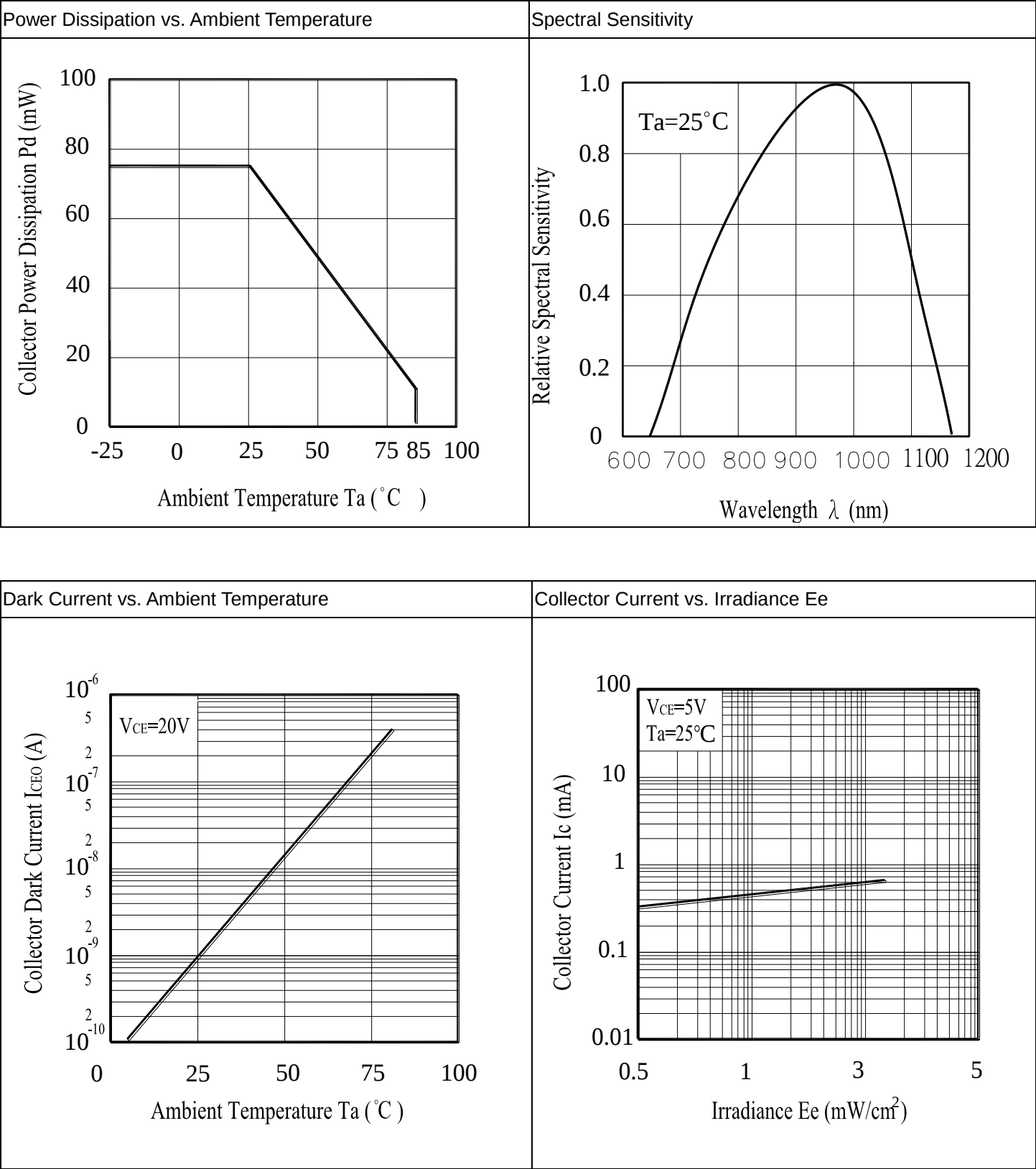
**To Distinguish Intensity:**

Condition:  $V_{CE}=5\text{V}$   $E_e=0.555\text{mW/cm}^2$

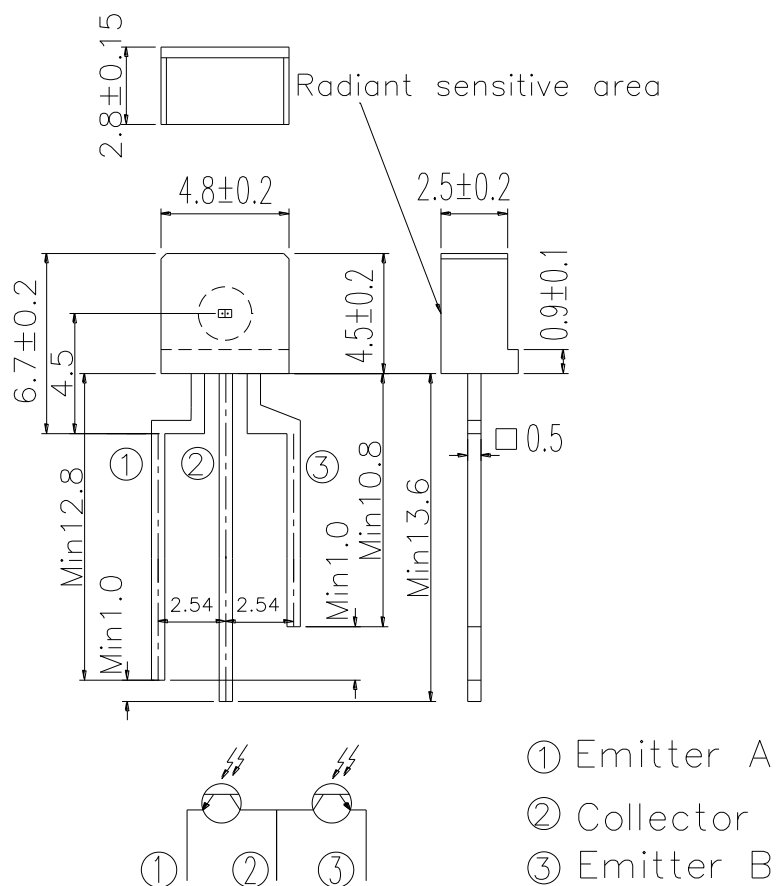
Ranks

| Ranks | Symbol      | Min | Typ | Max  | Unit          | Test Condition                                |
|-------|-------------|-----|-----|------|---------------|-----------------------------------------------|
| A1    | $I_{C(ON)}$ | 129 | --- | 226  | $\mu\text{A}$ | $E_e=0.555\text{mW/c m}^2$ $V_{CE}=5\text{V}$ |
| A2    | $I_{C(ON)}$ | 195 | --- | 306  | $\mu\text{A}$ | $E_e=0.555\text{mW/c m}^2$ $V_{CE}=5\text{V}$ |
| A3    | $I_{C(ON)}$ | 262 | --- | 380  | $\mu\text{A}$ | $E_e=0.555\text{mW/c m}^2$ $V_{CE}=5\text{V}$ |
| A4    | $I_{C(ON)}$ | 330 | --- | 461  | $\mu\text{A}$ | $E_e=0.555\text{mW/c m}^2$ $V_{CE}=5\text{V}$ |
| A5    | $I_{C(ON)}$ | 398 | --- | 544  | $\mu\text{A}$ | $E_e=0.555\text{mW/c m}^2$ $V_{CE}=5\text{V}$ |
| A6    | $I_{C(ON)}$ | 468 | --- | 625  | $\mu\text{A}$ | $E_e=0.555\text{mW/c m}^2$ $V_{CE}=5\text{V}$ |
| A7    | $I_{C(ON)}$ | 536 | --- | 703  | $\mu\text{A}$ | $E_e=0.555\text{mW/c m}^2$ $V_{CE}=5\text{V}$ |
| A8    | $I_{C(ON)}$ | 604 | --- | 785  | $\mu\text{A}$ | $E_e=0.555\text{mW/c m}^2$ $V_{CE}=5\text{V}$ |
| A9    | $I_{C(ON)}$ | 673 | --- | 862  | $\mu\text{A}$ | $E_e=0.555\text{mW/c m}^2$ $V_{CE}=5\text{V}$ |
| A10   | $I_{C(ON)}$ | 742 | --- | 944  | $\mu\text{A}$ | $E_e=0.555\text{mW/c m}^2$ $V_{CE}=5\text{V}$ |
| A11   | $I_{C(ON)}$ | 812 | --- | 1018 | $\mu\text{A}$ | $E_e=0.555\text{mW/c m}^2$ $V_{CE}=5\text{V}$ |
| A12   | $I_{C(ON)}$ | 882 | --- | 1085 | $\mu\text{A}$ | $E_e=0.555\text{mW/c m}^2$ $V_{CE}=5\text{V}$ |

Typical Electro-Optical Characteristics Curves



## Package Dimension



Note: Tolerances unless dimensions  $\pm 0.25\text{mm}$

### Packing Quantity Specification

1. 1000Pcs/1Bag , 8Bags/1Box
2. 10Boxes/1Carton

### 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 small empty circle.
- Below "Pb" logo: The text "CPN: XXXXXXXXXXXX" and "P/N: XXXXXXXXXXXX", followed by a barcode.
- Below the first barcode: The text "XXXXXXXXXXXXXXXXXXXXX".
- Below the second barcode: The text "QTY: XXXX" and "CAT: XXX".
- Below the third barcode: The text "HUE: XXX" and "REF: XXX".
- Below the fourth barcode: The text "LOT NO: XXXXXXXXXXXXXXXXXXXXX".
- Below the fifth barcode: The text "REFERENCE: XXXXXXXXXX".
- Below the sixth barcode: The text "MADE IN TAIWAN".
- On the right side, between the first and second barcodes: A small rectangular box containing the text "RoHS".

- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number
- X: Month
- Reference: Identify Label 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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