

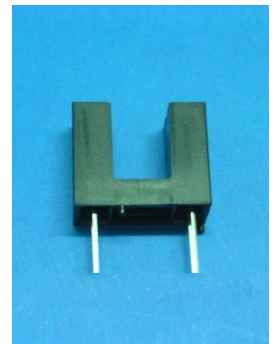
Technical Data Sheet

Opto Interrupter

EAITRCB0

Features

- Fast response time
- High analytic
- High sensitivity
- Cut-off visible wavelength $\lambda_P=940\text{nm}$
- Pb Free
- This product itself will remain within RoHS compliant version.



Description

The **EAITRCB0** consist of an infrared emitting diode and an NPN silicon phototransistor, encased side-by-side on converging optical axis in a black thermoplastic housing . The phototransistor receives radiation from the IR LED only .This is the normal situation. But when an object is between the IR and PT, phototransistor could not receive the radiation. For additional component information, please refer to IR908-7C-F and PT908-7C-F

Applications

- Mouse Copier
- Switch Scanner
- Floppy disk driver
- Non-contact Switching
- For Direct Board

Device Selection Guide

| Device No. | Chip Material | LENS COLOR |
|------------|---------------|-------------|
| IR | GaAlAs | Water clear |
| PT | Silicon | Water clear |

Absolute Maximum Ratings (Ta=25°C)

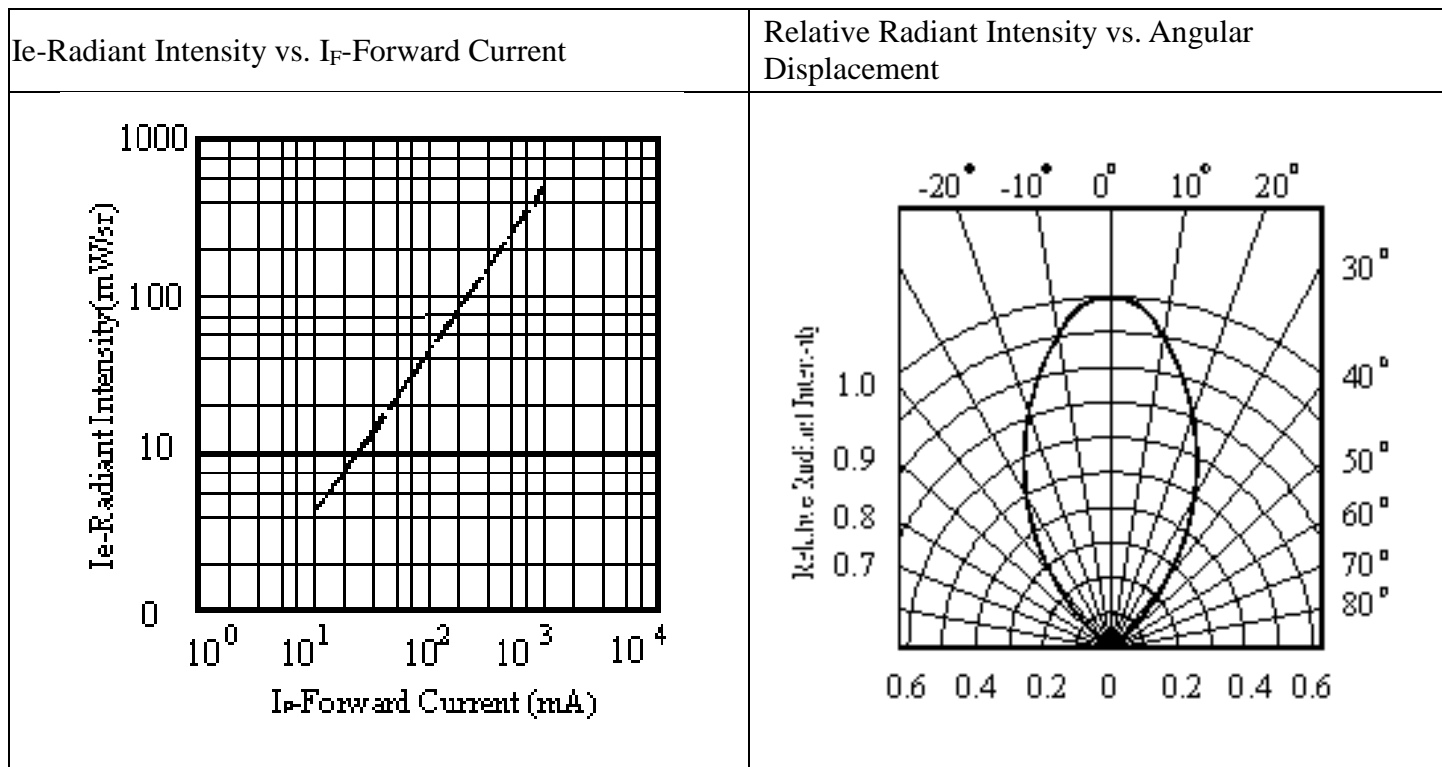
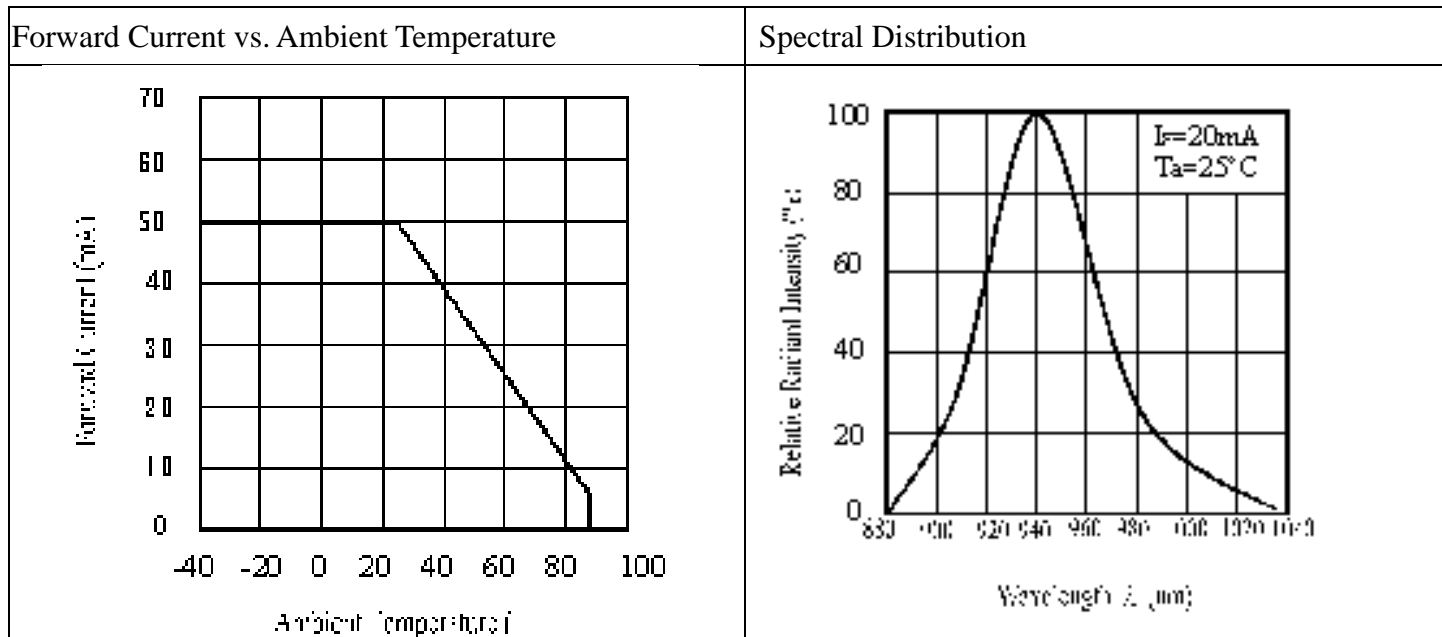
| Parameter | | Symbol | Ratings | Unit |
|---|---|--------------------|----------|------|
| Input | Power Dissipation at(or below) 25°C Free Air Temperature | Pd | 75 | mW |
| | Reverse Voltage | V _R | 5 | V |
| | Forward Current | I _F | 50 | mA |
| | Peak Forward Current (*1) Pulse width ≤100μs, Duty cycle=1% | I _{FP} | 1 | A |
| Output | Collector Power Dissipation | P _C | 75 | mW |
| | Collector Current | I _C | 20 | mA |
| | Collector-Emitter Voltage | B V _{CEO} | 30 | V |
| | Emitter-Collector Voltage | B V _{ECO} | 5 | V |
| Operating Temperature | | T _{opr} | -25~+85 | °C |
| Storage Temperature | | T _{stg} | -40~+100 | °C |
| Lead Soldering Temperature (*2) (1/16 inch form body for 5 seconds) | | T _{sol} | 260 | °C |

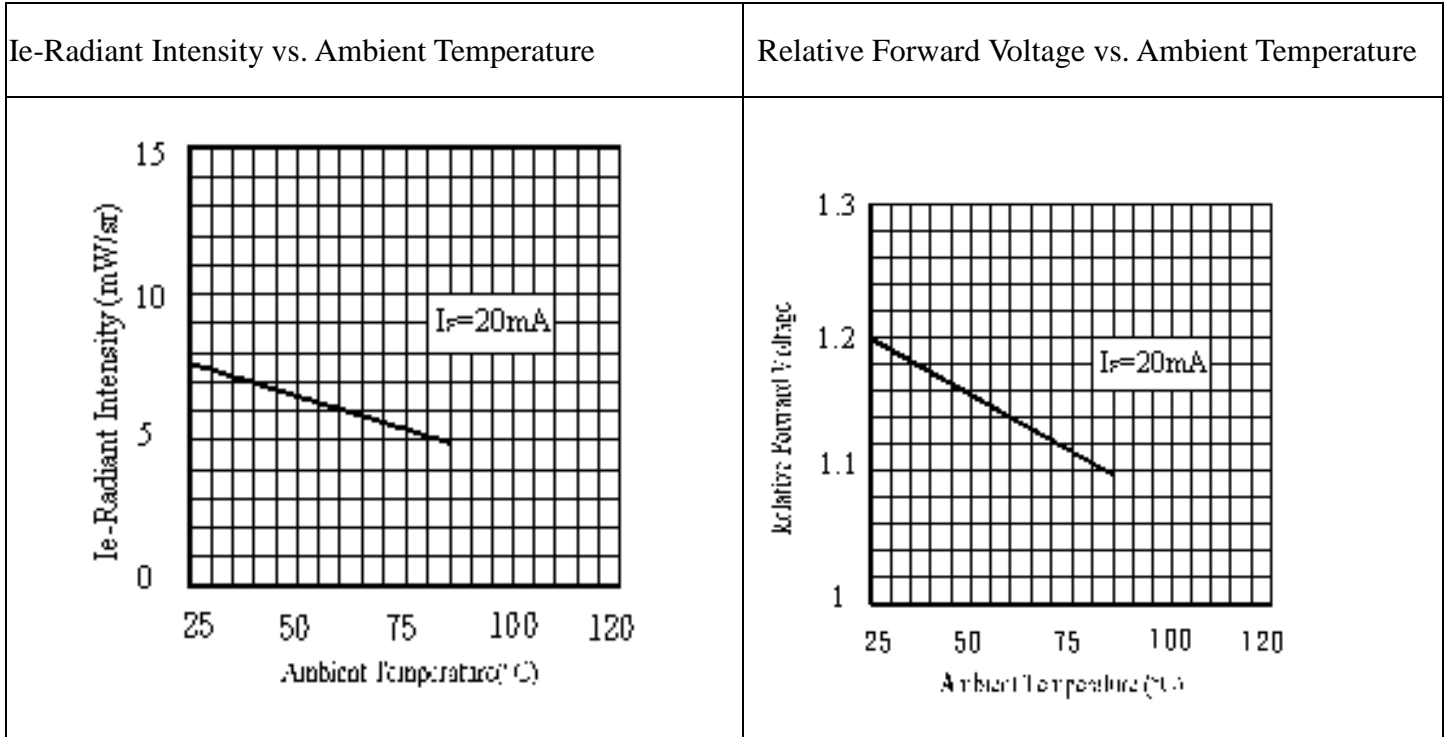
Notes: (*1) $t_w=100 \mu\text{sec.}$, $T=10 \text{ msec.}$ (*2) $t=5 \text{ Sec}$

Electro-Optical Characteristics (Ta=25°C)

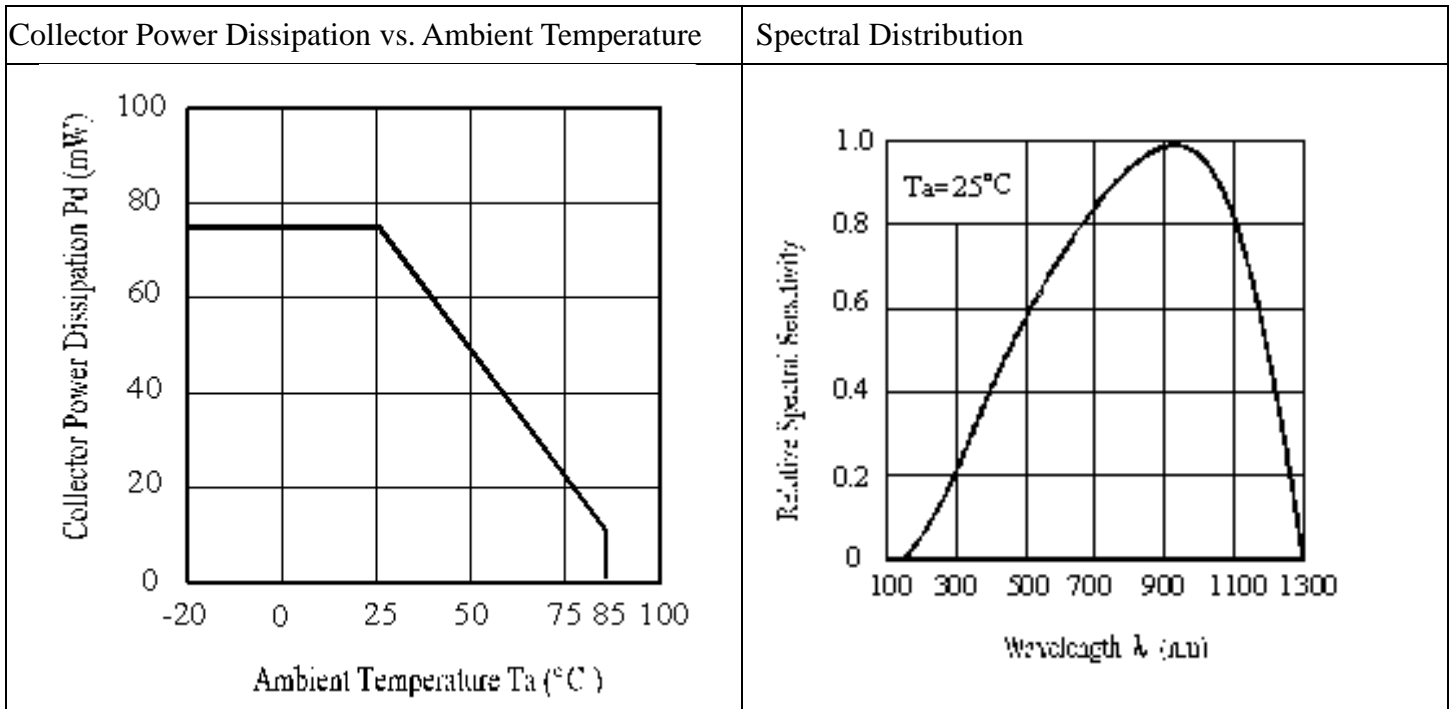
| Parameter | | Symbol | Min. | Typ. | Max. | Unit | Condition |
|-------------------------|------------------------|---------------|------|------|------|---------|--|
| Input | Forward Voltage | V_F | - | 1.2 | 1.5 | V | $I_F=20mA$ |
| | Reverse Current | I_R | - | - | 10 | μA | $V_R=5V$ |
| | Peak Wavelength | λ_P | - | 940 | - | nm | $I_F=20mA$ |
| Output | Dark Current | I_{CEO} | - | - | 100 | nA | $V_{CE}=20V, E_e=0mW/cm^2$ |
| | C-E Saturation Voltage | $V_{CE(sat)}$ | - | - | 0.4 | V | $I_C=2mA, E_e=1mW/cm$ |
| Collector Current (* 3) | | $I_{C(ON)}$ | 0.9 | - | - | mA | $V_{CE}=5V, I_F=20mA$ |
| Response Time | Rise Time | t_R | - | 15 | - | μs | $V_{CE}=5V \quad I_C=1mA \quad R_L=1K\Omega$ |
| | Fall Time | t_F | - | 15 | - | μs | |

Typical Electrical/Optical/Characteristics Curves for IR

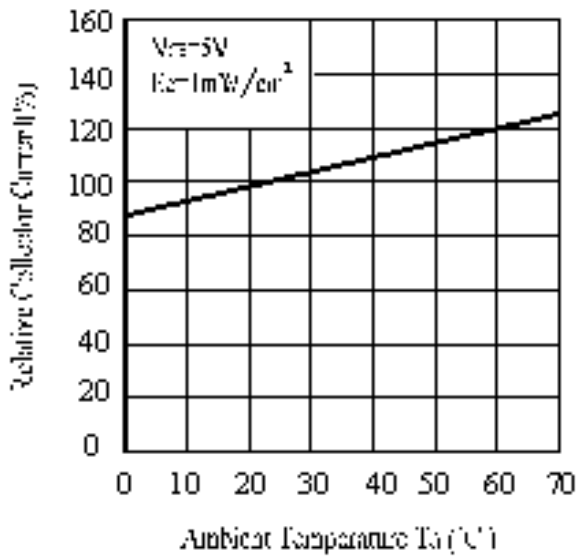




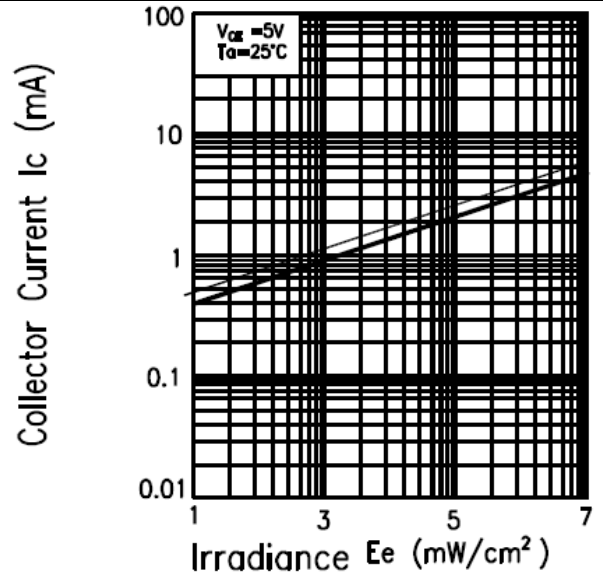
Typical Electro/Optical/Characteristics Curves for PT



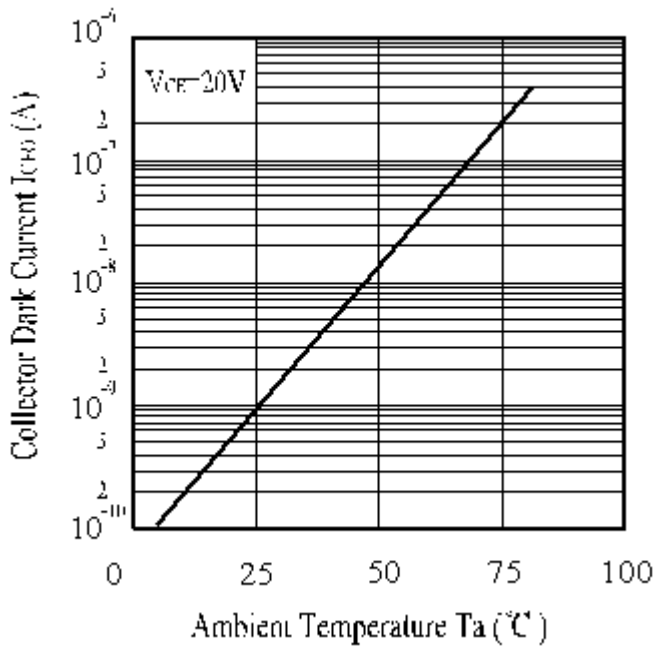
Relative Collector Current vs. Ambient Temperature



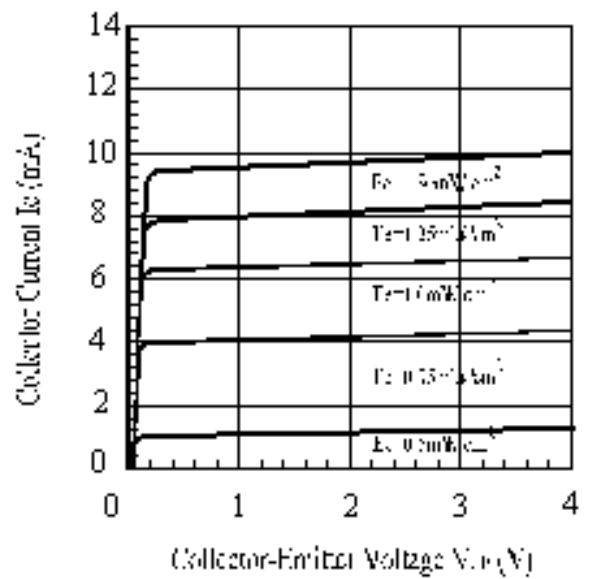
Collector Current vs. Irradiance



Collector Dark Current vs. Ambient Temperature



Collector Current vs. Collector-Emitter Voltage



Reliability Test Item And Condition

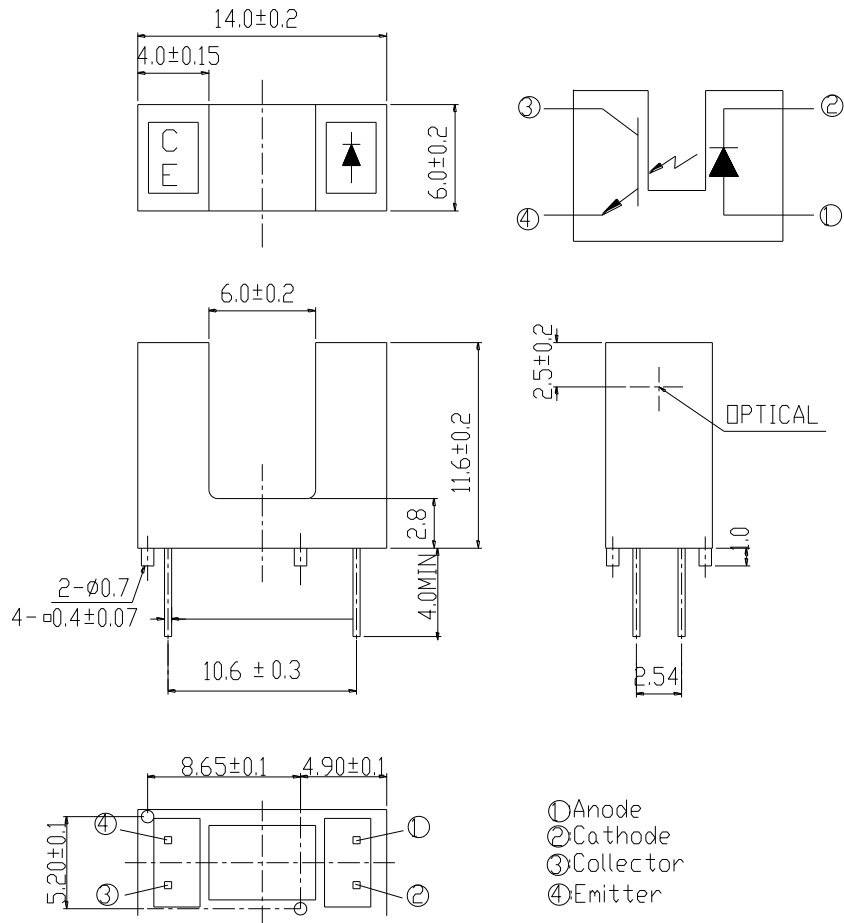
The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

| NO. | Item | Test Condition | Test Hours/ Cycle | Sample Size | Failure Judgement Criteria | Ac/Re |
|-----|----------------------------------|---|----------------------|-------------|--|-------|
| 1 | Solder Heat | TEMP : 260°C ± 5 °C | 10 sec | 22 PCs | Ic(on) ≤ L×0.8 L :Lower specification limit | 0/1 |
| 2 | Temperature Cycle | H : +100°C 15 mins ↑ 5 min ↓ L : -40°C 15 min | 300 cycle | 22 PCs | | 0/1 |
| 3 | Thermal Shock | H : +100°C 5 min ↑ 10 sec ↓ L : -10°C 5 min | 300 cycle | 22 PCs | | 0/1 |
| 4 | High Temperature Storage | TEMP. : +100°C | 1000 hrs | 22 PCs | | 0/1 |
| 5 | Low Temperature Storage | TEMP. : -40°C | 1000 hrs | 22 PCs | | 0/1 |
| 6 | DC Operating Life | V _{CE} =5V I _F =20mA | 1000 hrs | 22 PCs | | 0/1 |
| 7 | High Temperature / High Humidity | 85°C / 85% R.H. | 1000 hrs | 22 PCs | | 0/1 |

Package Dimension



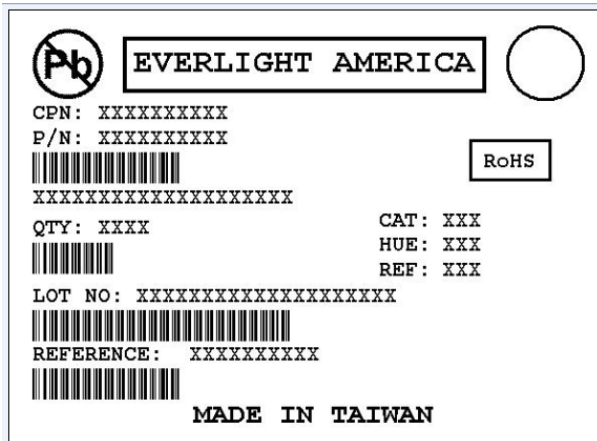
Notes:

1. All dimensions are in millimeters
2. Tolerances unless dimensions ± 0.2 mm

Packing Quantity Specification

1. 120PCS/1Plate,5Plate/1Boxe
2. 10Boxes/1Carton

Label Form Specification



- 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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