## Features

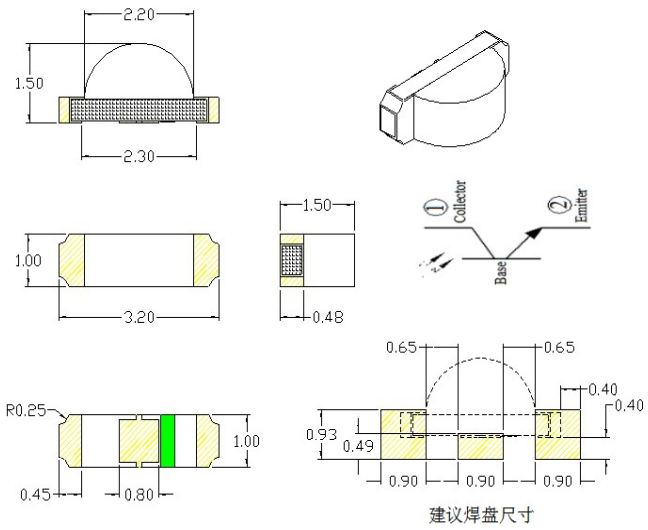
1. Outline Package:3.2x1.0x1.50mm
2. Emitted Color: non-luminance
3. Lens Appearance: Black
3. Comply with RoHS

4. PACKAGE: 4000PCS / REEL.

## Applications

1. Applicable to all kinds of mechanical keyboard launch requirements
2. Suitable for all kinds of infrared transmitting and receiving equipment
3. Infrared remote control transmitter is suitable for all kinds of electronic products
4. Applicable to all kinds of small household electrical appliance products for reflection application

## Package Outline Dimensions




## *NOTES:*

1. All dimensions are in millimeters (inches);
2. Tolerances are ±0.2mm (0.008inch)

## Absolute maximum ratings at Ta=25℃

| Parameter | | Symbol | Value | Unit |
|---|---|---|---|---|
| Power dissipation | | Pd | 100 | mW |
| Collector-Emitter Voltage | | Vceo | 30 | V |
| Emitter-Collector Voltage | | Veco | 5 | V |
| Operating temperature range | | Top | -30 ~+85 | ℃ |
| Storage temperature range | | Tstg | -40~+100 | ℃ |
| Soldering Temperature | | Tsol | Max.260° C for 8 sec Max. | |
| Electrostatic Discharge | | ESD | 2000(HBM) | V |

**Electrical-optical characteristics at Ta=25℃**

| Parameter | | Test Condition | Symbol | Value | | | Unit |
|---|---|---|---|---|---|---|---|
| | | | | Min. | Typ. | Max. | |
| Collector-Emitter Breakdowm Voltage | | $I_R$=100uA<br>$E_e$=0mW/cm$^2$ | Bvceo | 85 | -- | -- | V |
| Emitter-Collector Breakdowm Voltage | | $I_R$ =100uA<br>$E_e$=0mW/ cm$^2$ | Bveco | 8.2 | -- | -- | V |
| Collector Emitter Saturation voltage | | $I_c$ =2mA<br>$E_e$=0.5mW/ cm$^2$ | Bvc(sat) | | -- | 0.3 | V |
| Rise Time | | VCE=5V IC=1Ma<br>RL=1KΩ | Tr | | 15 | -- | us |
| Fall Time | | VCE=5V IC=1Ma<br>RL=1KΩ | Tf | -- | 15 | -- | us |
| Collector Dark Current | | VCE=20V<br>Ee=0mW/cm2 | ICEO | -- | -- | 30 | nA |
| On State Collector Current | | VCE=5V<br>Ee=1mW/cm2<br>λ =940nm | ICEO | 500 | -- | 600 | uA |
| Radiation intensity | | Ee=1mW/cm$^2$, λ<br>p=940nm<br>$V_{CE}$=5V | MW/SR | 20 | 22 | 24 | uA |

## Typical optical characteristics curves

Figure 1: Spectral Sensitivity Curve

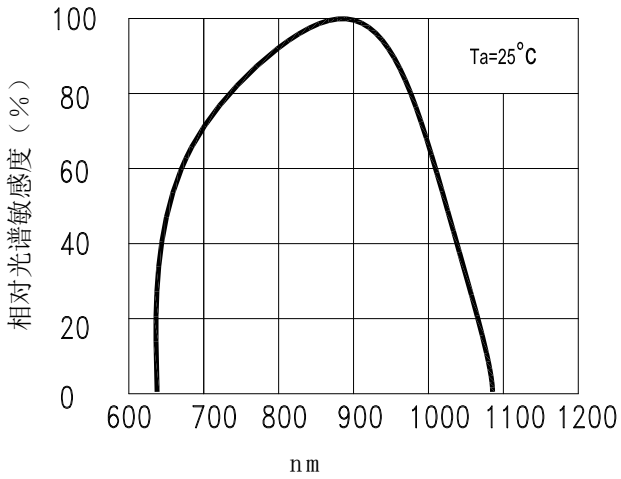



Figure 2: Collector dark current vs ambient temperature curve

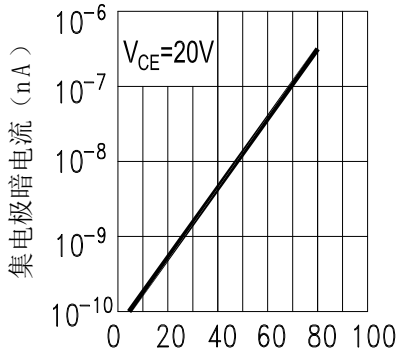



Figure 3: Dissipated power vs ambient temperature curve

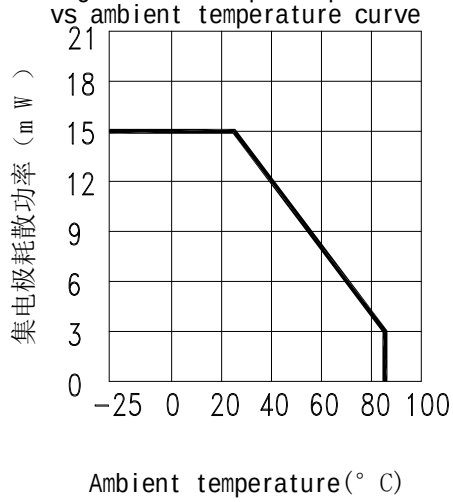



Figure 4: Relative collector current intensity vs ambient temperature curve

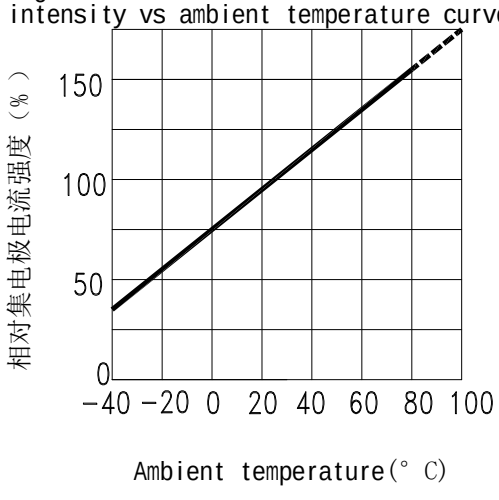



Figure 5: Collector current vs irradiance

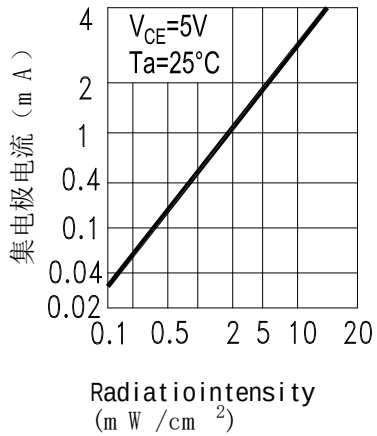
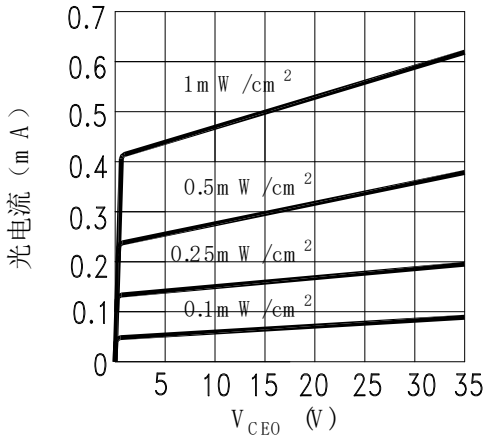



Figure 6: Photocurrent vs VCEO Curve



# RELIABILITY

Test Items and Results

| NO | Pilot projects | Guideline | Test conditions | Duration | QTY of samples | Acceptance level (unqualified QTY/total QTY of samples) |
|---|---|---|---|---|---|---|
| 1 | temperature cycle | JEITA ED-4701 | -40℃～25℃～100℃～25℃ 30 minutes 5 minutes | Loop 100 rounds | 50 | 0/50 |
| 2 | Thermal shock | MIL-STD-202G | -40℃～100℃ | Loop 100 rounds | 50 | 0/50 |
| 3 | high temperature storage | JEITA ED-4701 200 201 | 15 minutes 15 minutes $T_a$=100℃ | 1000 hours | 50 | 0/50 |
| 4 | low temperature storage | JEITA ED-4701 200 201 | $T_a$=-40℃ | 1000 hour | 50 | 0/50 |
| 5 | Normal temperature life test<br>Normal temperature life test | | $T_a$=25±5℃<br>$I_F$=20mA | 1000 小时 | 50 | 0/50 |
| 6 | High temperature and humidity life test | | $T_a$=60℃ RH=85%<br>$I_F$=20mA | 1000 hour | 50 | 0/50 |
| 7 | Solderability (reflow soldering)<br>Solderability (reflow soldering) | JEITA ED-4701<br>300 303 | $T_{sol}$=235℃±5℃,5 秒<br>use flux | Solder once 5 seconds | 10 | 0/10 |
| 8 | Solder resistance | JEITA ED-4701 | $T_{sol}$=260℃,10 秒 | Weld twice each time | 10 | 0/10 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (reflow soldering) | 300 301 | Pretreatment : 35℃ 95%RH 96 hours | 10 second | | |
| | If the above test items are different from the customer's test requirements or the special customer's special requirements can be based on the actual situation according to the customer's requirements | | | | | |
| prepare | Please make a trial production. If the customer does not request, it will be trial produced according to our test standard. Different products are tested with different currents. | | | | | |

## Cautions

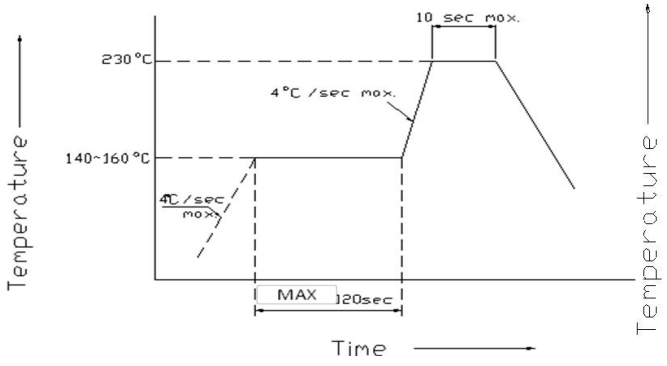
(1) Soldering Conditions

Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.

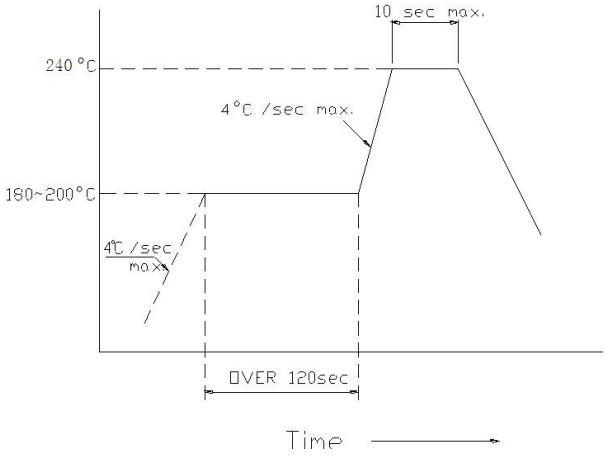
(Recommended soldering conditions)

| 回流焊接 Reflow Soldering | | | 手工焊接 | |
|---|---|---|---|---|
| | 有铅 Lead Solder | 无铅 Lead-free Solder | 温度 Temperature | 350° C Max. |
| 预热温度 Pre-heat | 140 ~ 160° C | 180 ~ 200° C | 焊接时间 Soldering time | 3 sec. Max. (one time only) |
| 预热时间 Pre-heat time | 120 sec. Max. | 120 sec. Max. | | |
| 峰值温度 Peak temperature | 230° C Max. | 240° C Max. | | |
| 焊接时间 Soldering time | 10 sec. Max. | 10 sec. Max. | | |
| 条件Condition | 参考下图 | 参考下图 | | |

Lead Solder




Lead-Free Solder



(2) Static Electricity

It is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.

All devices, equipment and machinery must be properly grounded.

Damaged LEDs will show some unusual characteristics such as the forward voltage becomes lower, or the LEDs do not light at the low current. Criteria : (VF > 2.0V at IF=0.5mA)

(3) Moisture Proof Package

It is recommended that moisture proof package be used .

(4)Cautions:

4.1.Please check if there is air leak before opening the package, if so, please return the goods back to take drying process for later using.

4.2 Products can be used within 15days after packaging, after that, they must be:

4.2.1 Soldered within 24 hrs

4.2.2 Used in the condition: 30℃ within and 60%RH below

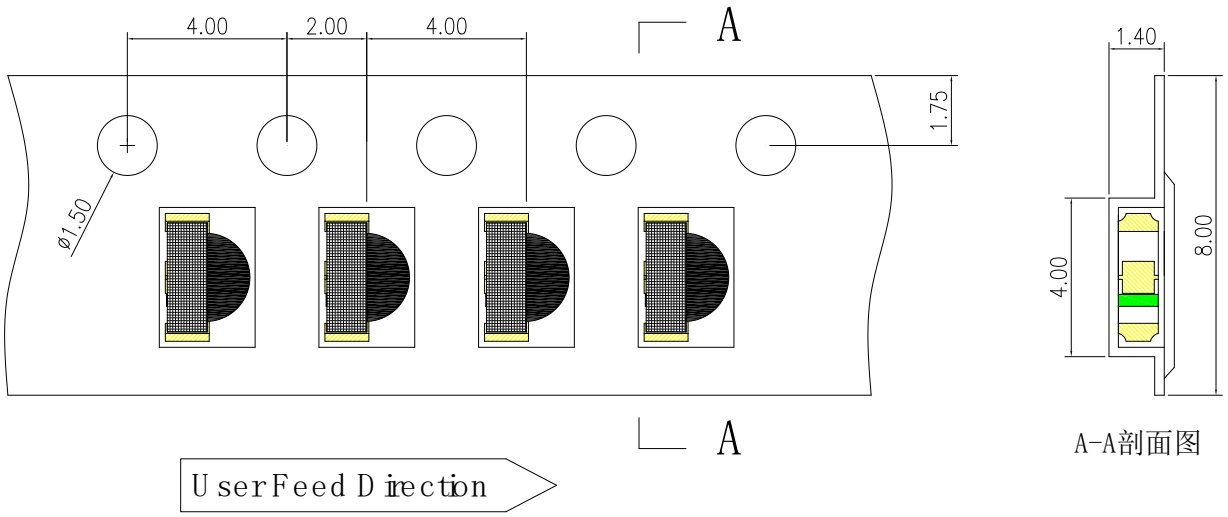
4.2.3 Stored in 30%RH for moisture below.

4.3.Products cannot be used for and over 15days after being packaged unless opening the package and take drying our process in 85℃/6H.

4.4 Products not be used for or over 60days after being packaged please return back to take drying out and packaging process for forward using.

4.5.Products not be used after opening the package need to be dried out for 85℃/6H

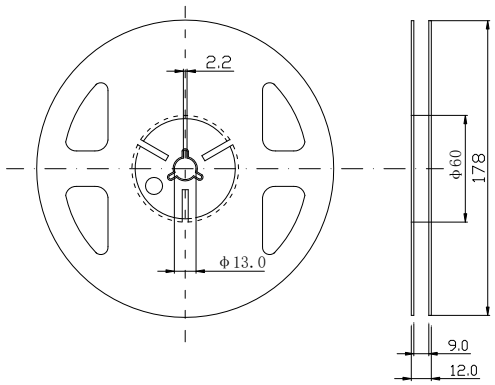
# PACKAGING



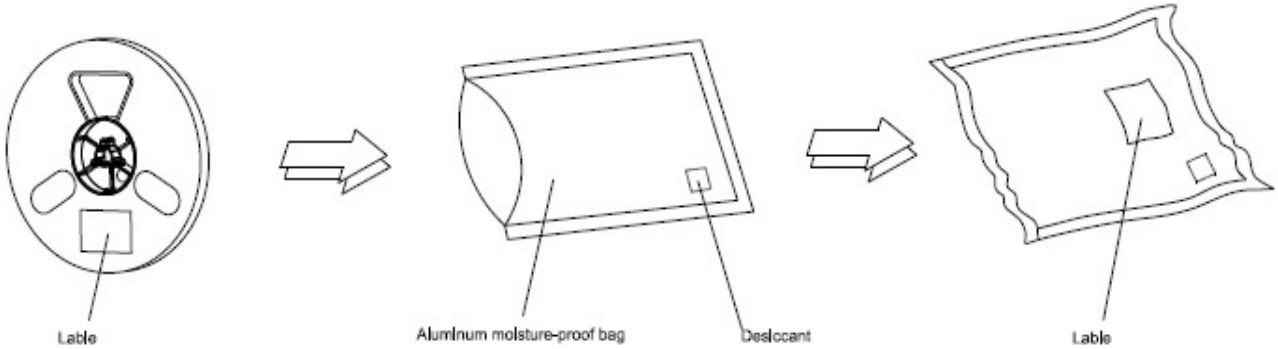

The LEDs are packed in cardboard boxes after taping.

## Reel Dimensions

.




## Moisture Resistant Packaging




Note:The tolerances unless mentioned is ±0.1mm,Unit:mm