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## DATA SHEET

ESL NO.: ESS-5730WWDT-R80-WR

CUS NO.:

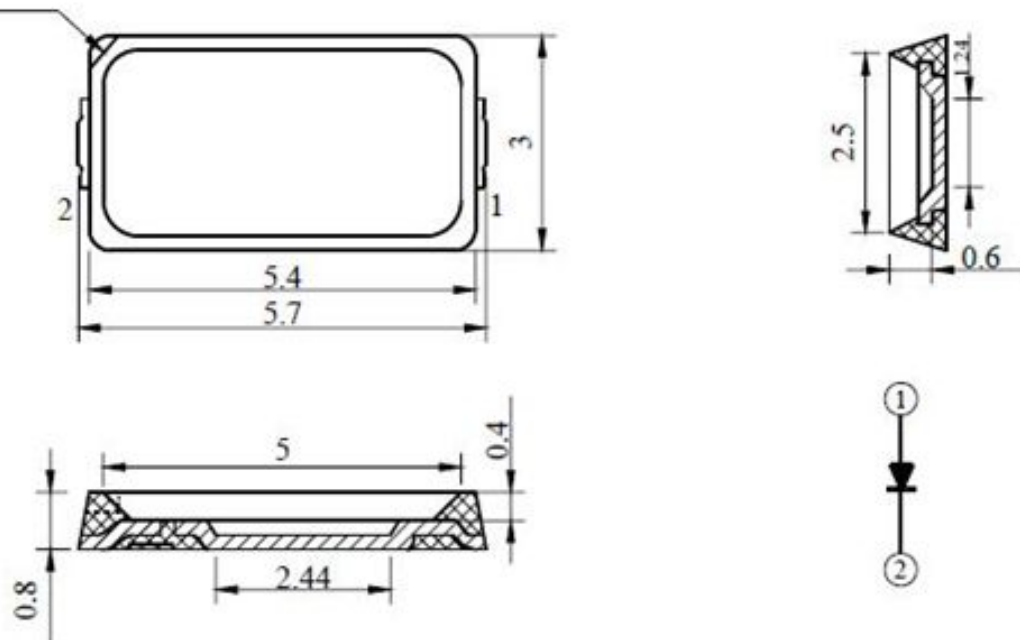
REV: A / 0

Producer: 张帆 Auditor: 沈云 Approver: 姜良

CUSTOMER'S APPROVAL: \_\_\_\_\_ DCC: \_\_\_\_\_

PACKAGE DIMENSIONS

CATHODE MARK



Note:

1. All Dimensions are in millimeters.
2. Tolerance is  $\pm 0.25\text{mm}$  (0.010 "). Unless otherwise specified.



# 5730 SMD LED

ESS-5730WWDT-R80-WR

REV:A / 0

## Absolute maximum ratings

Ta=25°C

| Parameter                                | Symbol | Value    | Unit |
|--|--------|----------|------|
| Forward current                          | If     | 150      | mA   |
| Reverse voltage                          | Vr     | 5        | V    |
| Power dissipation                        | Pd     | 600      | mW   |
| Operating temperature range              | Top    | -40~+85  | °C   |
| Storage temperature range                | Tstg   | -40~+100 | °C   |
| Peak pulsing current ( 1/8 duty f=1KHz ) | Ifp    | 300      | mA   |

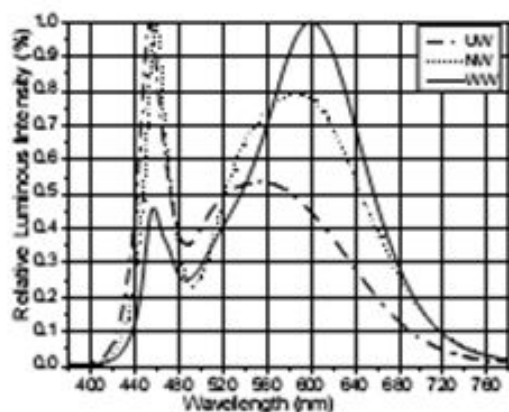
## Electro-Optical characteristics

(TA=25°C)

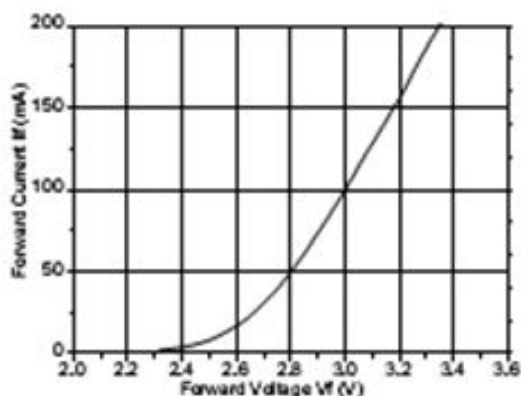
| Parameter               | Test Condition | Symbol         | Value |     |      | Unit    |
|-------------------------|----------------|----------------|-------|-----|------|---------|
|                         |                |                | Min   | Typ | Max  |         |
| Color Temperature       | If=150mA       | CCT            | 2600  |     | 3500 | K       |
| Forward voltage         | If=150mA       | Vf             | 3.0   | --  | 3.6  | V       |
| Light                   | If=150mA       | $\phi$         | 55    | --  | 65   | Lm      |
| Color Rendering Index   | If=150mA       | CRI            | 80    |     | --   | /       |
| Viewing angle at 50% IV | --             | 2 $\theta$ 1/2 | --    | 120 | --   | Deq     |
| Reverse current         | Vr=5V          | Ir             | --    | 10  | --   | $\mu$ A |

### Typical photo electricity characteristic curve chart

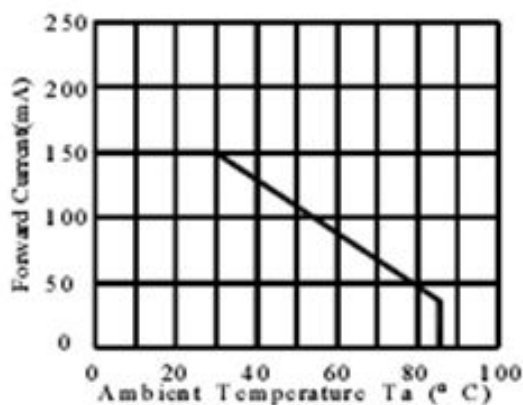
Relative Luminous Intensity Vs. Wavelength Ta=25°C



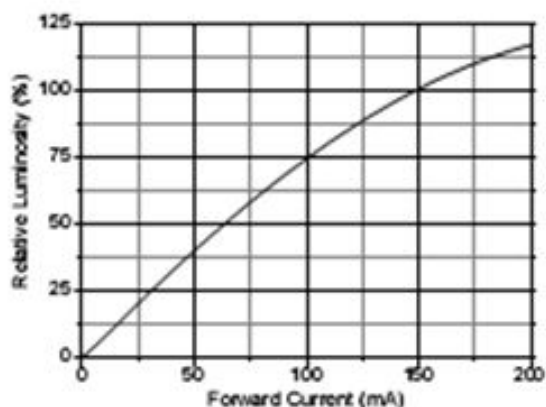
Forward Current vs Forward Voltage at Ta=25°C



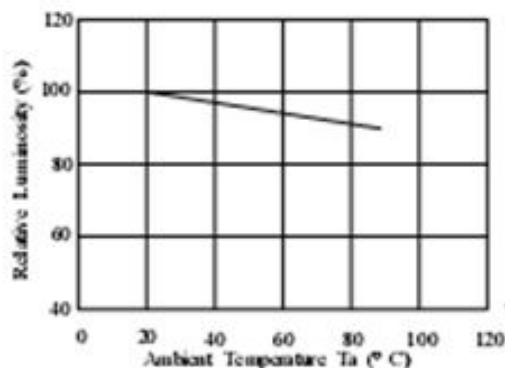
Forward Current Vs. Ambient Temperature



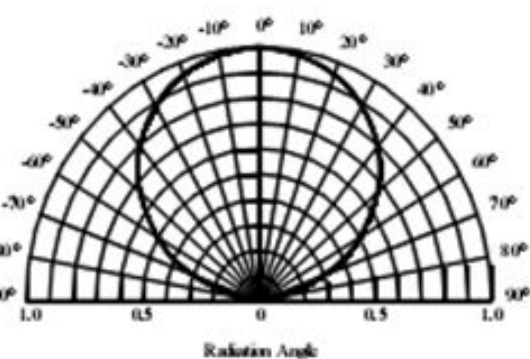
Forward Current Vs. Relative Luminosity Ta=25°C



Relative Luminosity Vs. Ambient Temperature

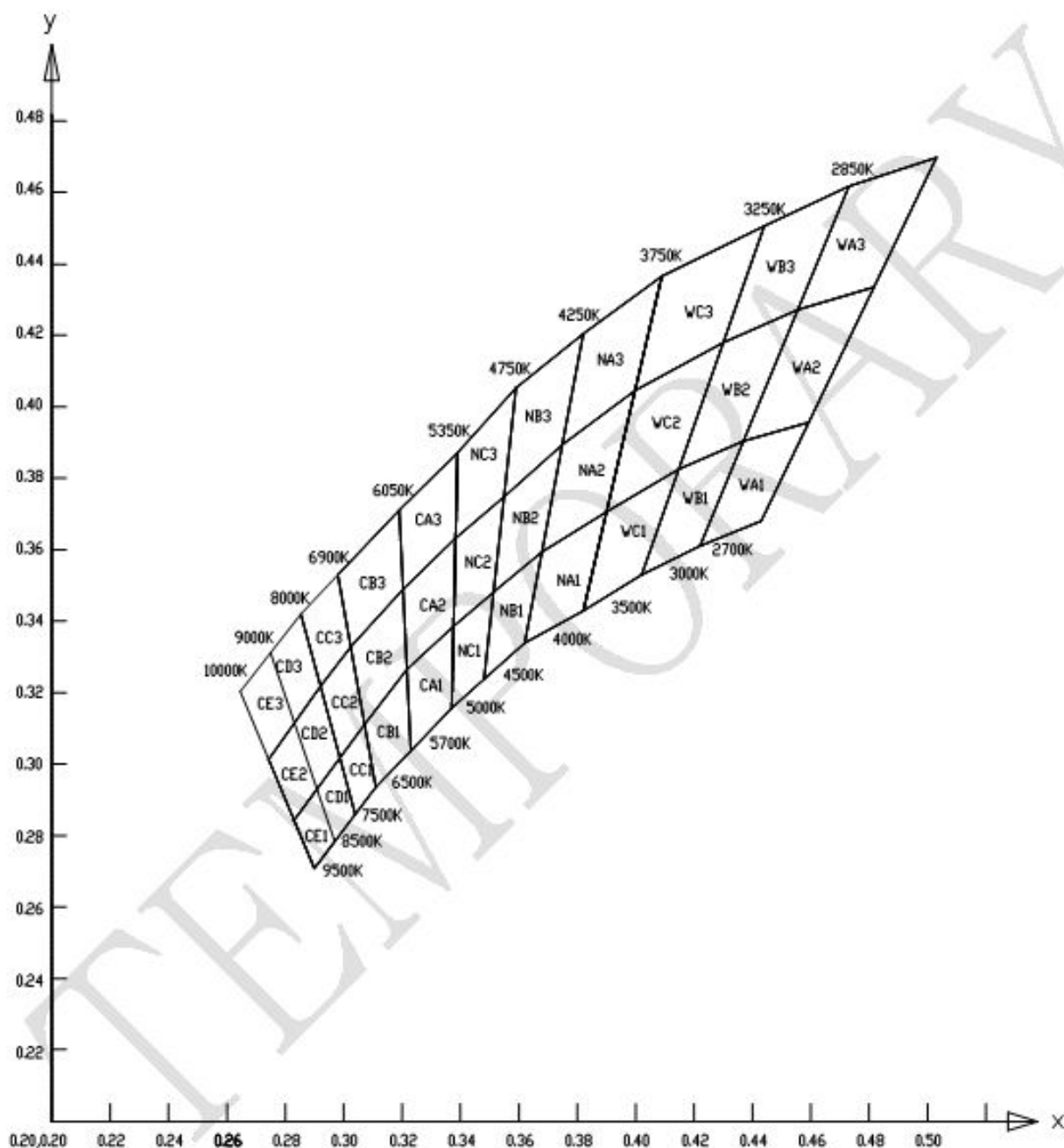


Radiation diagram



Typical photo electricity characteristic curve chart

CIE 1931 xy CHROMATICITY DIAGRAM





# 5730 SMD LED

ESS-5730WWDT-R80-WR

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## ※※BIN range

Forward voltage (tolerance is  $\pm 0.05V$  @  $IF=150mA$ ):

| BIN CODE | Min. (V) | Max. (V) |
|----------|----------|----------|
| S        | 2.9      | 3.0      |
| T        | 3.0      | 3.1      |
| U        | 3.1      | 3.2      |
| V        | 3.2      | 3.3      |
| W        | 3.3      | 3.4      |
| X        | 3.4      | 3.5      |

Luminous intensity (tolerance is  $\pm 10\%$  @  $IF=150mA$ ):

| BIN CODE | Min.(lm) | Max.(lm) |
|----------|----------|----------|
| B13      | 50       | 55       |
| B14      | 55       | 60       |
| B15      | 60       | 65       |

## ※ Reliability test items and conditions:

| No. | Test Item                         | Test Conditions  | Sample size | Ac/Re |
|-----|-----------------------------------|--|-------------|-------|
| 1   | Operation Life                    | Test $I_f=DC60mA$<br>Temp: Room temperature<br>Test time=1000hrs           | 22          | 0/1   |
| 2   | High Temperature<br>High Humidity | Temp. $\pm 85^{\circ}C$<br>RH=85%HR<br>Test time=1000hrs                   | 22          | 0/1   |
| 3   | Thermal Shock                     | $-35^{\circ}C$ ~ $+85^{\circ}C$<br>20min 10s 20min<br>Test Time=300cycles  | 22          | 0/1   |
| 4   | High Temperature<br>Storage       | High Temp. $\pm 85^{\circ}C$<br>Test time=1000hrs                          | 22          | 0/1   |
| 5   | Low Temperature<br>Storage        | Low $T_a=-35^{\circ}C$<br>Test time=1000hrs                                | 22          | 0/1   |
| 6   | Temperature Cycle                 | $-35^{\circ}C$ ~ $+100^{\circ}C$<br>15min 5min 15min<br>Test Time=300cycle | 22          | 0/1   |
| 7   | Reflow Soldering                  | Operation heating :<br>$240^{\circ}C$ (Max.), within 10seconds. (Max.)     | 22          | 0/1   |

## ※ Judgment criteria of failure for the reliability

- ?  $I_v$ : Below 50% of initial values
- ?  $V_f$ : Over 20% of upper limit value
- ?  $IR$ : Over 2 times of upper limit value





## 5730 SMD LED

ESS-5730WWDT-R80-WR

REV:A / 0

### ※ Precautions for use :

1. Customer must apply the current limiting resistor in the circuit so as to drive the LEDs within the rated current. Otherwise slight voltage shift maybe will cause big current change and burn out will happen.
2. Also, caution should be taken not to overload the LEDs with instantaneous high voltage at the turning ON and OFF of the circuit.
3. Storage:

3.1 Don't open the moisture proof bag before ready to use the LEDs.

3.2 The LEDs should be kept at 30°C or less and 60%RH or less before opening the package.

The max. storage period before opening the package is 1 year.

3.3 After opening the package, the LEDs should be kept at 30°C/35%RH or less, and it should

be used within 7 days.

3.4 If the LEDs be kept over the conditions of 3.4, baking is required before mounting.

### Baking

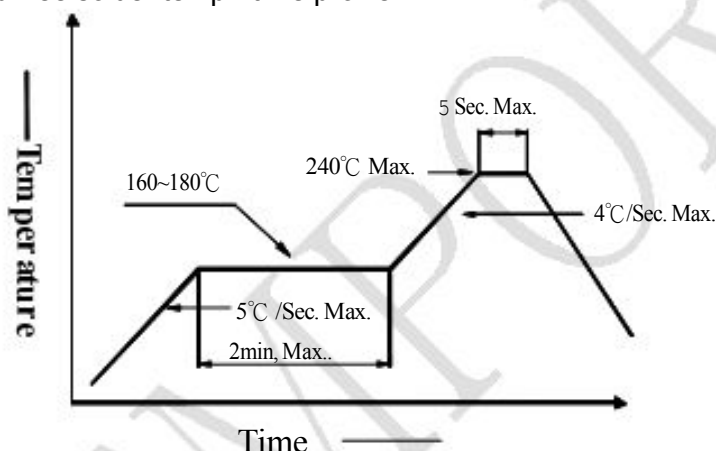
condition as below: 60±5°C for 12 hrs.

4. Soldering condition:

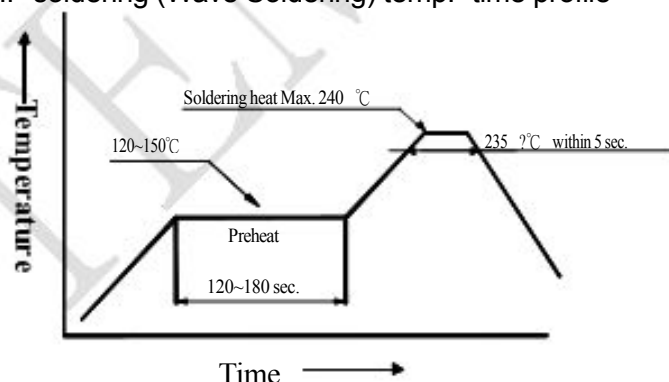
#### 4.1 Manual of soldering :

The temp. of the iron should be lower than 260°C and soldering within 3sec per solder-pad is to be observed.

#### 4.2 Pb-free solder temp. -time profile



#### 4.3 DIP soldering (Wave Soldering) temp. -time profile

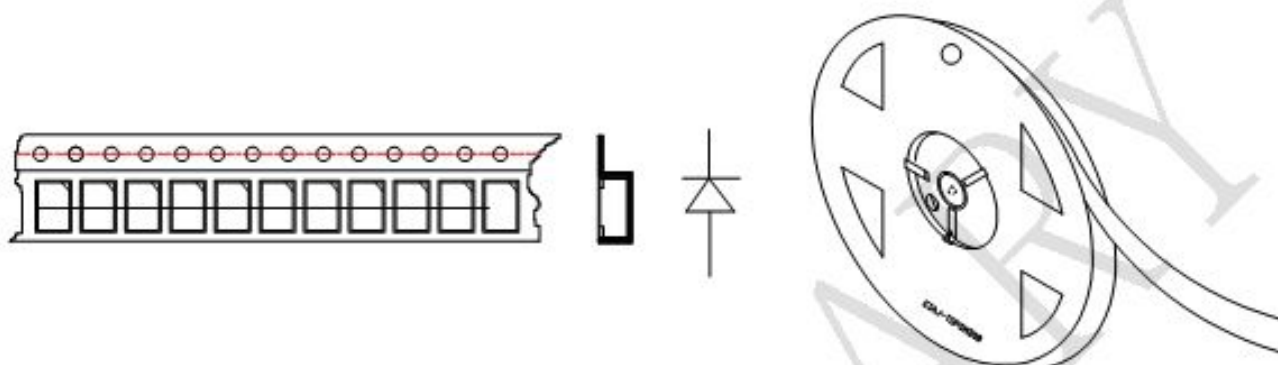


### Note:

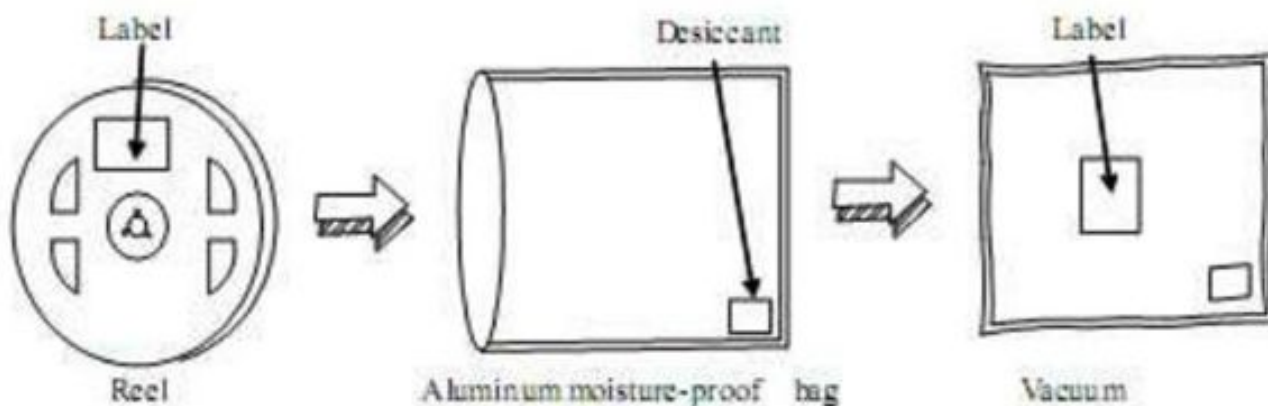
- a) Reflow soldering should not be done more than two times.
- b) Don't put stress on the LEDs when soldering.
- c) Don't warp the circuit board before it have been returned to normal ambient conditions after soldering.

## Tape and Packaging

### 1、Tape leader and reel (1000±3 pcs/Reel)



### 2、Packing



### 3、Storage:

- 1)、Don't open the moisture proof bag before the products are ready to use。
- 2)、Before opening the packing, the LED should be kept at 30℃ or less and 90RH or less
- 3)、After opening the moisture proof bag, should use the LED immediately, do not expose the led in air for a week.
- 4)、If the LEDs exceed the storage time or the moisture absorbability material has faded away, Backing treatment should be performed using the following conditions: 60+/-5℃ for 24 hours.