

Data Sheet

Customer: _____

Part No: _____ CL-SP192HY-34-5M-02 _____

Sample No: _____

Description: _____

Item No: _____

| Customer | | | |
|----------|------------|----------|------|
| Check | Inspection | Approval | Date |
| | | | |

Features

- .0603 package
- .Top view LED
- .Compatible with infrared and vapor phase reflow solder process.
- .Pb-free
- .RoHS compliant

Description

.The Ciellight 192 package has high efficacy, high power consumption, wide viewing angle and a compact form factor.

.These features make this package an ideal LED for all lighting applications.

Applications

- .General lighting
- .Decorative and Entertainment Lighting
- .Indicators
- .Automotive Telecommunication
- .Switch lights

Device Selection Guide

| Chip Material | Emitted Color | Resin Color |
|---------------|------------------|-------------|
| GaAsP | Brilliant Yellow | Water Clear |

Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Rating | Unit |
|-------------------------------------------------------------|------------------|-----------------------------------------------------------------------------|------|
| Continuous Forward Current | I _F | 30 | mA |
| Operating Temperature | T _{opr} | -30 ~ +80 | °C |
| Storage Temperature | T _{stg} | -40 ~ +85 | °C |
| Peak Forward Current (Duty 1/10@1ms) | I _{FP} | 100 | mA |
| Soldering Temperature* ¹ | T _{sol} | Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec. | |
| Power Dissipation at(or below) 25°C Free Air Temperature | P _d | 80 | mW |
| Electrostatic Discharge(HBM) | ESD | 2000 | V |

Notes: *1: Soldering time ≤ 5 seconds

Electro-Optical Characteristics (Ta=25°C)

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|--------------------|-------------------|------|------|------|------|---------------------|
| Forward Voltage | V _F | 1.7 | --- | 2.1 | V | I _F =5mA |
| Reverse Current | I _R | --- | --- | 10 | μA | V _R =5V |
| Luminous Intensity | I _v | 0.7 | 2.2 | --- | mcd | I _F =5mA |
| Viewing Angle | 2θ _{1/2} | --- | 120 | --- | deg | I _F =5mA |

Notes:

- 1.Tolerance of Luminous Intensity ±10%.
- 2.Tolerance of Forward Voltage : ±0.05V.

Bin Range of Luminous Intensity

| Bin Code | Min | Max | Unit | Condition |
|----------|-----|-----|------|---------------------|
| B2 | 0.7 | 1.2 | mcd | I _F =5mA |
| C1 | 1.2 | 2.2 | | |
| C2 | 2.2 | 3.6 | | |

Note:

Tolerance of Luminous Intensity: $\pm 10\%$.

Bin Range of Dominant Wavelength

| Bin Code | Min | Max | Unit | Condition |
|----------|-----|-----|------|---------------------|
| 1 | 582 | 585 | nm | I _F =5mA |
| 2 | 585 | 588 | | |
| 3 | 588 | 591 | | |
| 4 | 591 | 594 | | |
| 5 | 594 | 597 | | |

Note:

Tolerance of Dominant Wavelength: $\pm 1\text{nm}$.

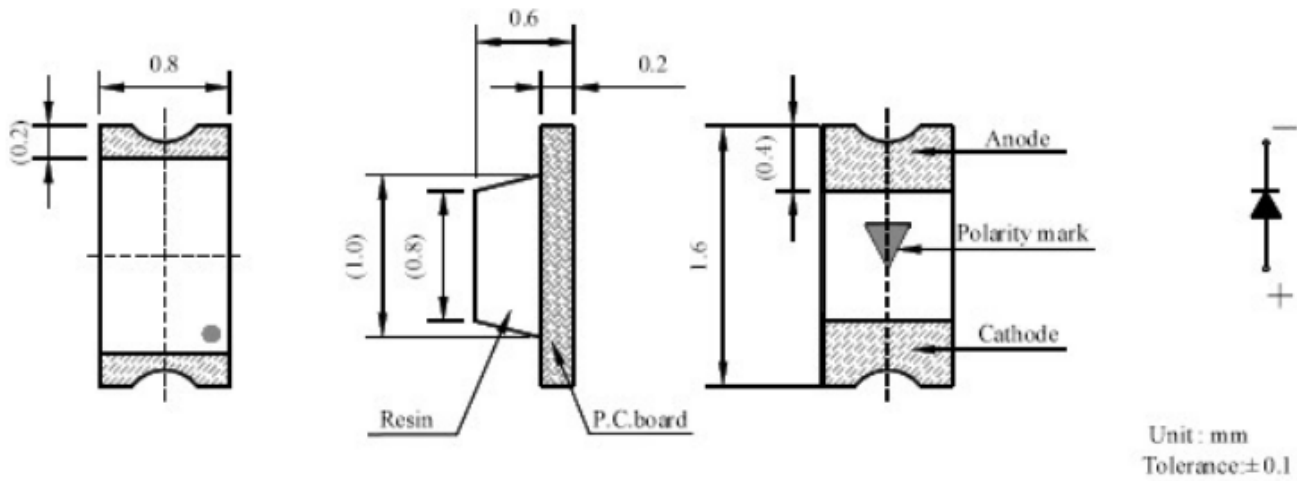
Bin Range of Forward Voltage

| Bin Code | Min | Max | Unit | Condition |
|----------|-----|-----|------|---------------------|
| 17 | 1.7 | 1.8 | V | I _F =5mA |
| 18 | 1.8 | 1.9 | | |
| 19 | 1.9 | 2.0 | | |
| 20 | 2.0 | 2.1 | | |

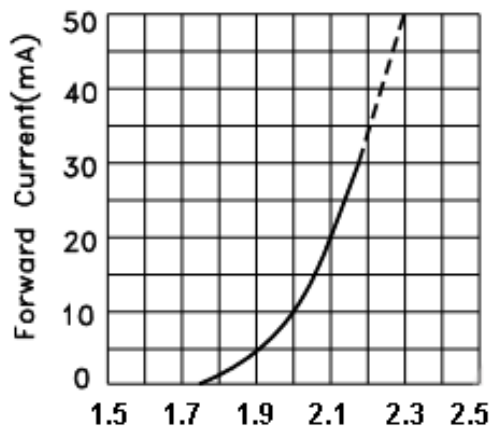
Note:

Tolerance of Forward Voltage: $\pm 0.05\text{V}$.

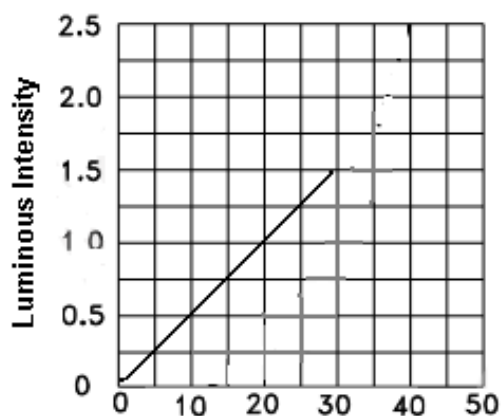
Package Dimensions



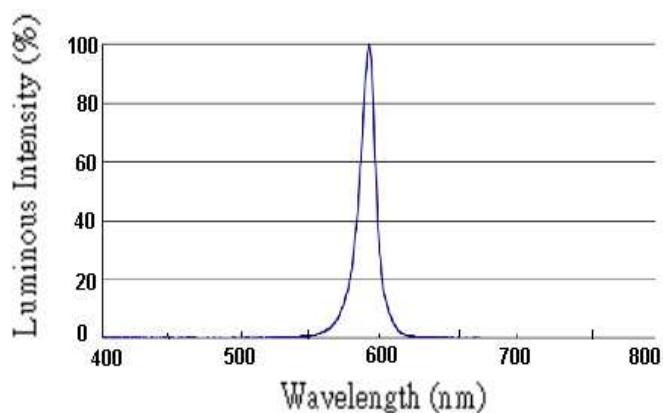
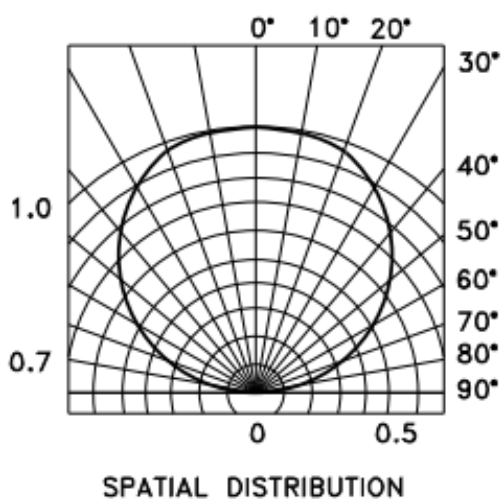
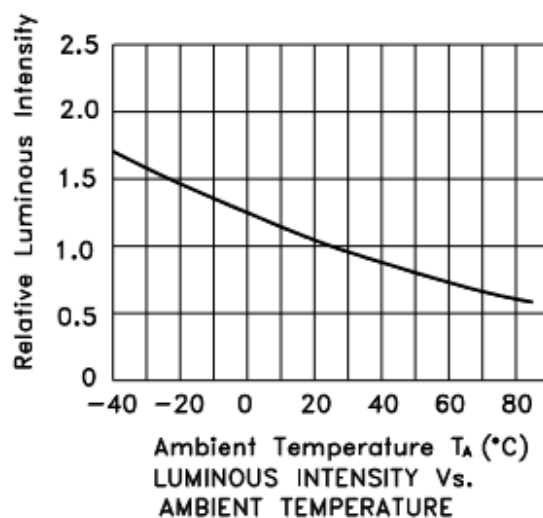
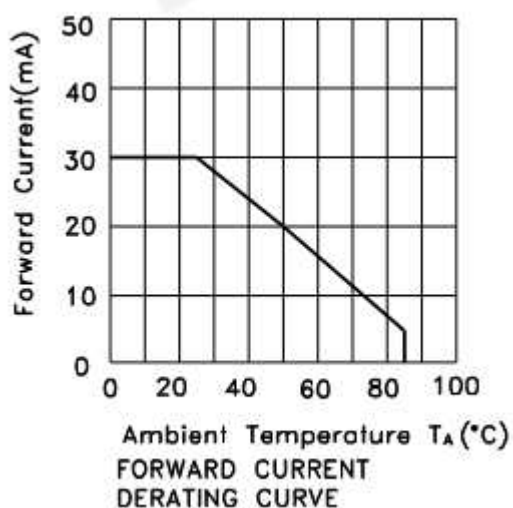
Note: Tolerance unless mentioned is ± 0.1 mm, Unit = mm.



Forward current Vs. Forward voltage



Luminous Intensity Vs. Forward current



Label Form Specification

CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

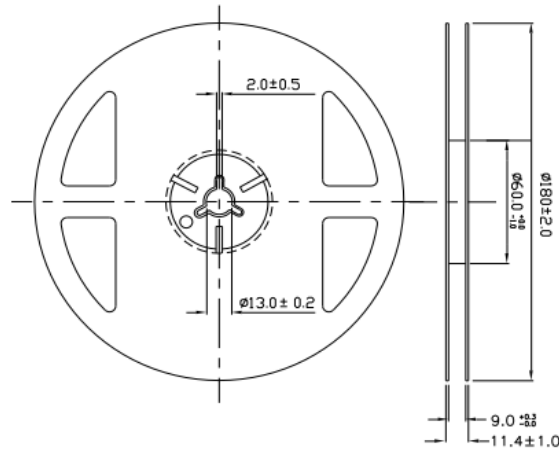
CAT: Ranks

HUE: Peak Wavelength

REF: Reference

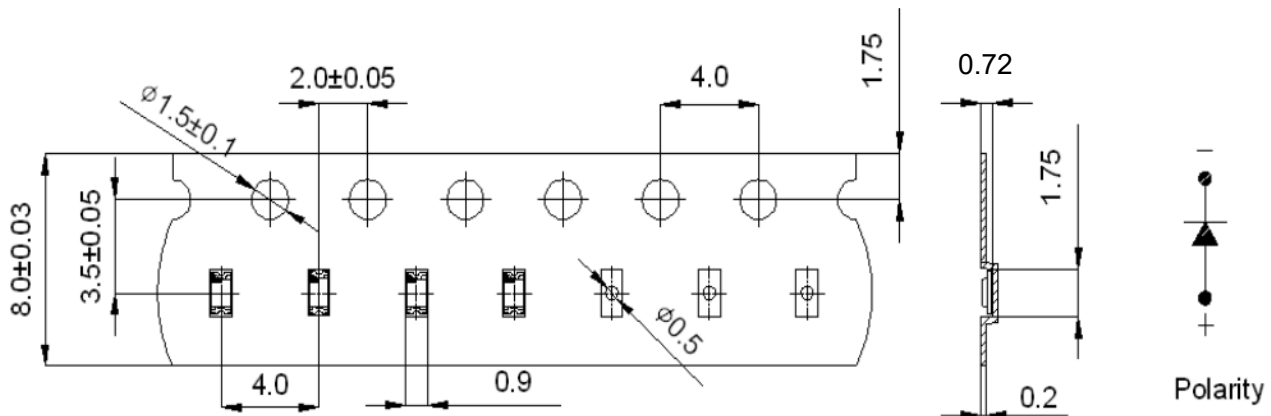
LOT No: Lot Number

Reel Dimensions



Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$,Unit = mm

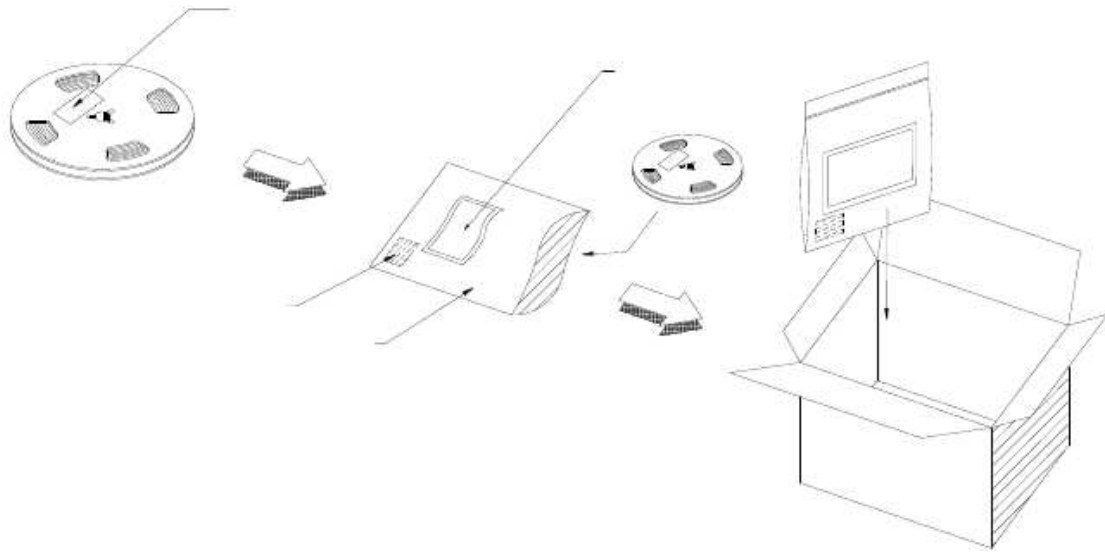
Carrier Tape Dimensions:(Quantity: 4000pcs/reel)



Note:

- 1.Tolerance unless mentioned is $\pm 0.1\text{mm}$,Unit = mm.
- 2.Minimum packing amount is 1000/2000 pcs per reel.

Moisture Resistant Packing Process



Reliability Test Items and Conditions

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

Confidence level : 90%

LTPD : 10%

| No. | Items | Test Condition | Test Hours/Cycles | Sample Size | Ac/Re |
|-----|-------------------------------------------|---------------------------------------------|-------------------|-------------|-------|
| 1 | Reflow Soldering | Temp. : 260°C/10sec. | 6 Min | 22 PCS | 0/1 |
| 2 | Thermal Shock | H : +100°C 5min ∫ 10 sec L : -10°C 5min | 300 Cycles | 22 PCS | 0/1 |
| 3 | Temperature Cycle | H : +100°C 15min ∫ 5 min L : -40°C 15min | 300 Cycles | 22 PCS | 0/1 |
| 4 | High Temperature/Humidity Reverse Bias | Ta=85°C,85%RH | 1000 Hrs. | 22 PCS | 0/1 |
| 5 | Low Temperature Storage | Ta=-40°C | 1000 Hrs. | 22 PCS | 0/1 |
| 6 | High Temperature Storage | Ta=100°C | 1000 Hrs. | 22 PCS | 0/1 |
| 7 | DC Operation Life | Ta=25°C IF = 20 mA | 1000 Hrs. | 22 PCS | 0/1 |

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 40°C or less and 90%RH or less.

2.3 The LEDs should be used within a year.

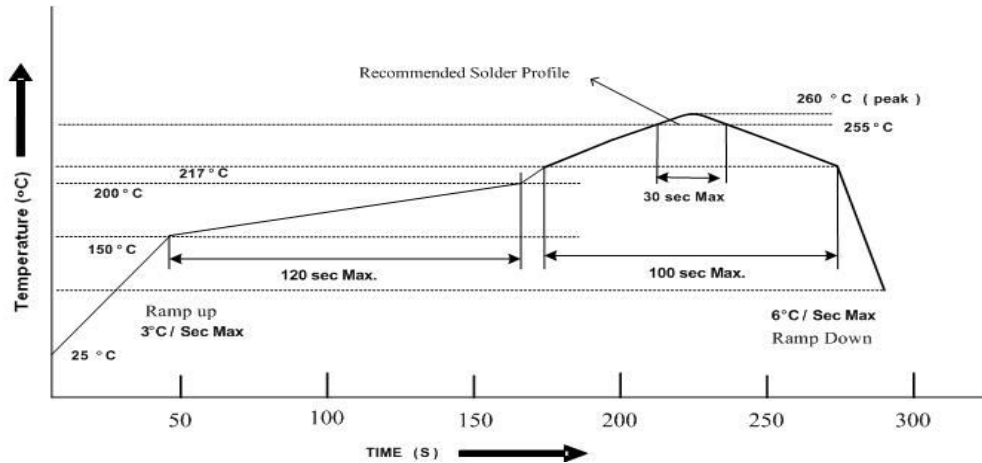
2.4 After opening the package, the LEDs should be kept at 30°C or less and 60%RH or less.

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 J-STD-33 Standard.

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.