# Data Sheet

Customer: _____

Part No: CL-SP192IR-850-02

Sample No: _____

Description: 1608 SMD 850nm IR Sensor

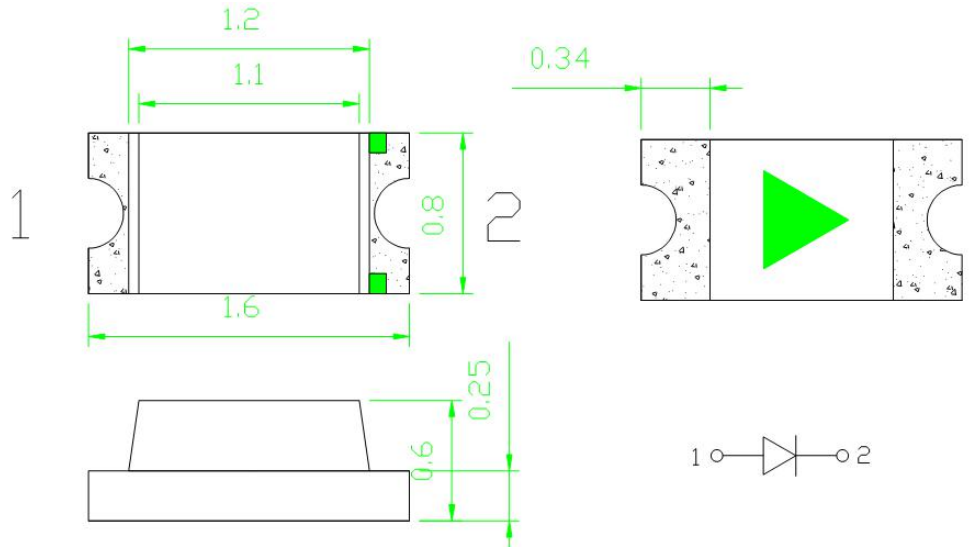
Item No: _____

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

# Features

- Peak emission wavelength at 850nm
- High power output of min. 5mW/sr @ $I_F$ = 20mA
- Narrow viewing angel of 20 degree
- High speed response
- Dimension: 1.6mm(L) x 0.8mm(W) x 0.6mm(H)

# Package Dimensions




Notes:

1. All dimension

s are in millimeters (inches).

2. Tolerance is ±0.1(0.004") unless otherwise noted.

3.Specifications are subject to change without notice.

# Absolute Maximum Ratings at Ta = 25°C

| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Power Dissipation | $P_D$ | 120 | mW |
| Continuous Forward Current | $I_F$ | 75 | mA |
| Reverse Voltage | $V_R$ | 5 | V |
| Operating Temperature | $T_{OP}$ | -30 to 80 | ℃ |
| Storage Temperature | $T_{ST}$ | -40 to 85 | ℃ |

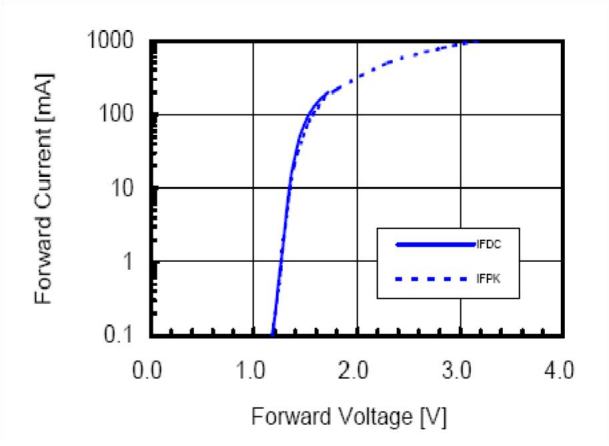
** Condition for $I_{FP}$ is pulse of 1/10 duty and 0.1msec width

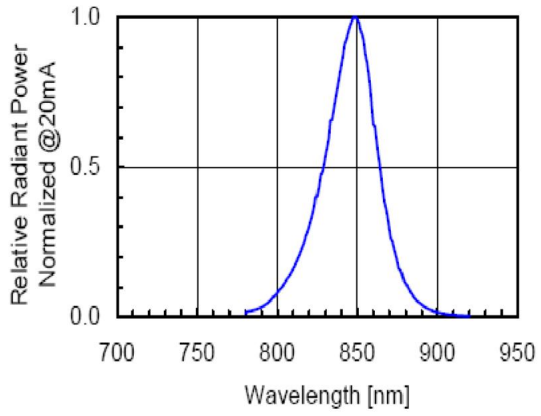
# Electrical & Optical Specifications at Ta = 25°C

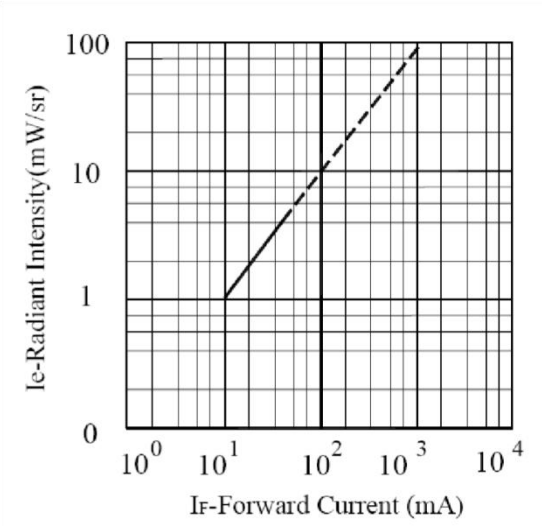
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|---|---|---|---|---|---|---|
| Forward Voltage | $V_F$ | -- | 1.3 | 1.7 | V | $I_F$=20mA |
| Reverse Current | $I_R$ | -- | -- | 10 | uA | $V_R$=5V |
| Peak Wavelength | λp | -- | 850 | -- | nm | $I_F$=20mA |
| Radiant Intensity | Ee | 5.0 | -- | -- | mW/sr | $I_F$=20mA |
| Spectral Bandwidth | Δλ | -- | 40 | -- | nm | $I_F$=20mA |
| Rise/Fall Time | Tr / Tf | | 25/15 | 35/35 | ns | $I_F$=50mA |
| View angle | $2\theta_{1/2}$ | - | 120 | - | deg | $I_F$=20mA |

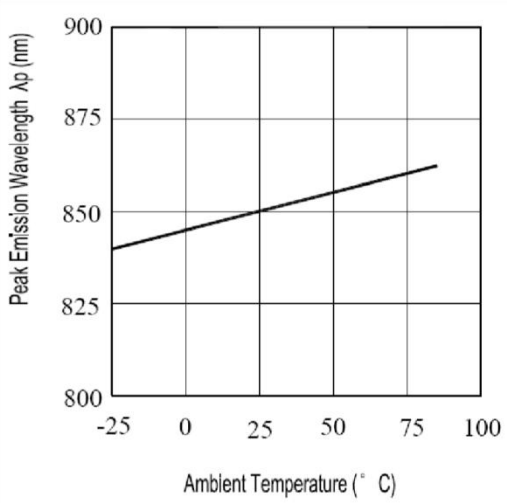
# Typical Electrical and Optical Characteristics Curves

(25 Ambient Temperature Unless Otherwise Noted)

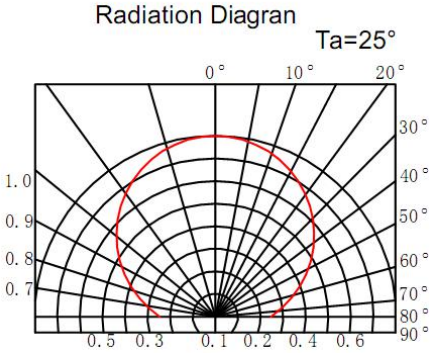



## Directive Characteristics



(1) Test Items and Results

| NO. | Test Item | Reference Standard | Test Conditions | (Hours/ Cycles) | Sample | Number of Damaged |
|---|---|---|---|---|---|---|
| 1 | Temperature Cycle | JEITA ED-4701 | -40 °C - 25 °C - 100 °C - 25 °C<br>30min 5min 30min 5min | 100 Cycles | 50 | 0/50 |
| 2 | Thermal shock | MIL-STD-202G | -40℃～100℃<br>15min 15min | 500 Cycles | 50 | 0/50 |
| 3 | High Temperature Storage | JEITA ED-4701<br>200 201 | Ta=100℃ | 1000 Hours | 50 | 0/50 |
| 4 | Low Temperature Storage | JEITA ED-4701<br>200 201 | Ta=-40℃ | 1000 Hours | 50 | 0/50 |
| 5 | Room Temperature Life Test | | Ta=25±5℃<br>IF=20mA | 1000 Hours | 50 | 0/50 |
| 6 | High Temperature High Humidity Life Test | | Ta=60℃ RH=85%<br>IF=20mA | 1000 Hours | 50 | 0/50 |
| 7 | Solderability (Reflow Soldering) | JEITA ED-4701<br>300 303 | Tsol=235℃±5℃, 5sec<br>(Using Flux, Lead Solder) | 1 time, 5sec | 10 | 0/10 |
| 8 | Resistance to Soldering Heat (Reflow Soldering) | JEITA ED-4701<br>300 301 | Tsol=250℃, 10 sec<br>Pre Treatment: 35 °C<br>95% RH96 Hrs | 2 time, 10sec | 10 | 0/10 |

The above test items such as differences or special customer specific requirements according to the actual situation in accordance with the requirements of customers to try the requirements with the customer, the customer is not required by our test standard test. Different products using different current test

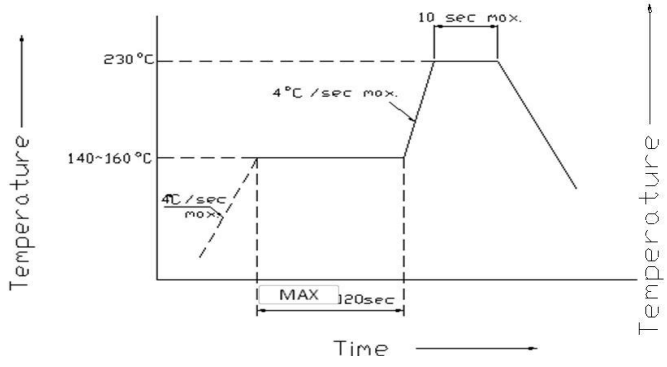
## Cautions

(1) Soldering Conditions

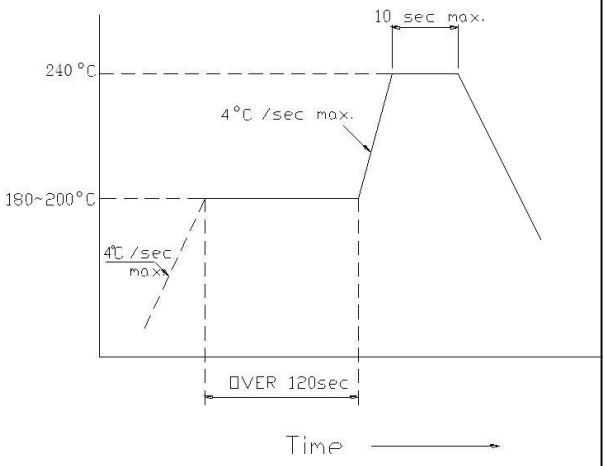
Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.

(Recommended soldering conditions)

（Lead Solder）

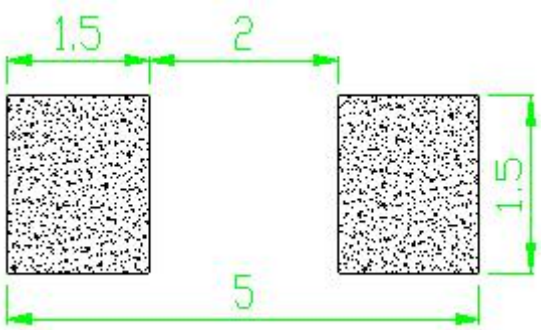



(Lead-Free Solder)




**Recommended Solderi**

**(Units : mm)**



(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.

2.0V 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:

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.

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

Soldered within 24 hrs

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

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.

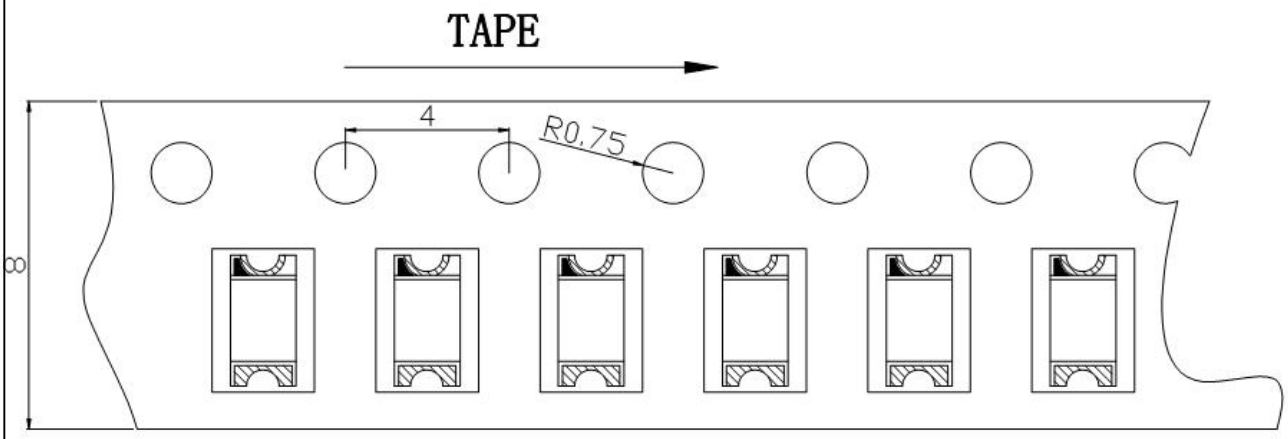
Products not be used for or over 60days after being packaged please return back to take drying out and packaging process for forward using.

4.5.

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

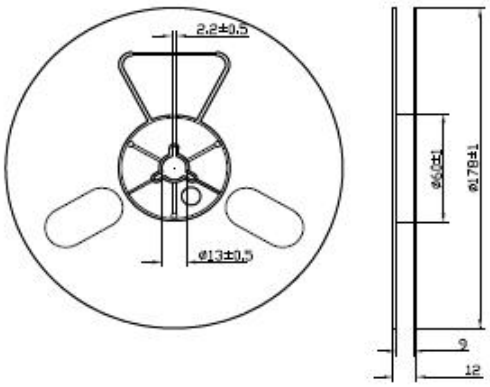
## PACKAGING

The LEDs are packed in cardboard boxes after taping.

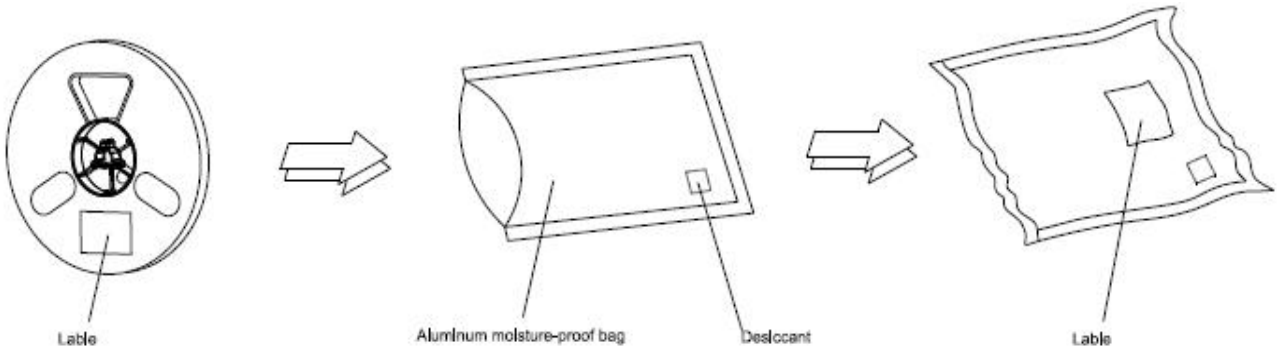



Package: 4000 pcs/reel

**Reel Dimensions**




**Moisture Resistant Packaging**




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