



## Data Sheet

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Customer:

Part No:

Sample No:

Description:

Item No:

CL-SP172IR-850-02

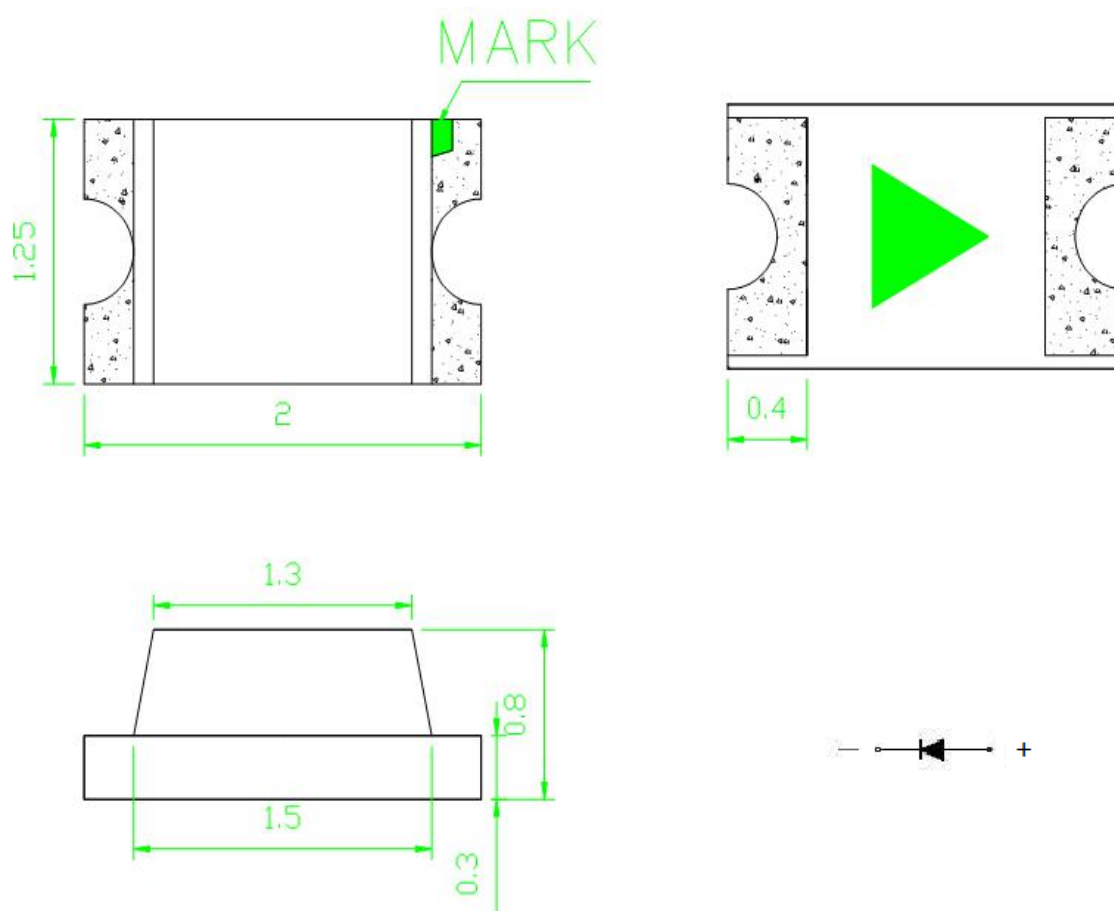
2012 SMD 850nm IR Sensor

Customer			
Check	Inspection	Approval	Date

## Features

- Peak emission wavelength at 850nm
- High power output of min. 5mW/sr @  $I_F = 20\text{mA}$
- Narrow viewing angel of 20 degree
- High speed response
- Dimension: 2.0mm(L) x 1.25mm(W) x 0.8mm(H)

## Package Dimensions



### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.1$  (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 <sub>D</sub>	120	mW
Continuous Forward Current	I <sub>F</sub>	75	mA
Reverse Voltage	V <sub>R</sub>	5	V
Operating Temperature	T <sub>OP</sub>	-30 to 80	°C
Storage Temperature	T <sub>ST</sub>	-40 to 85	°C

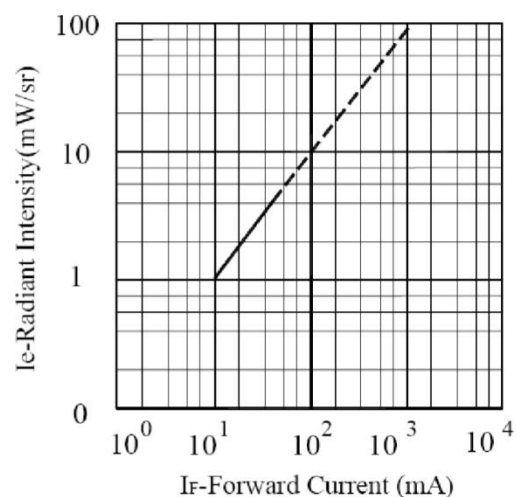
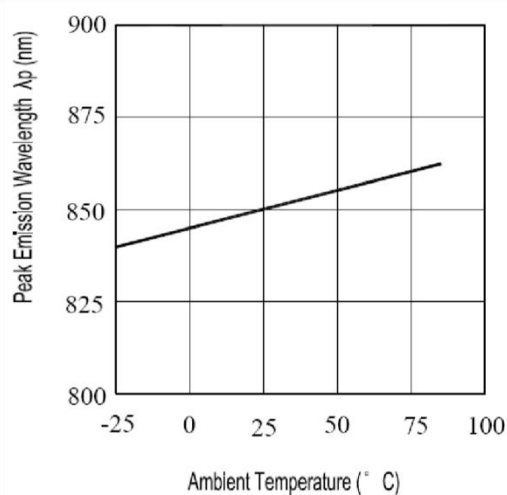
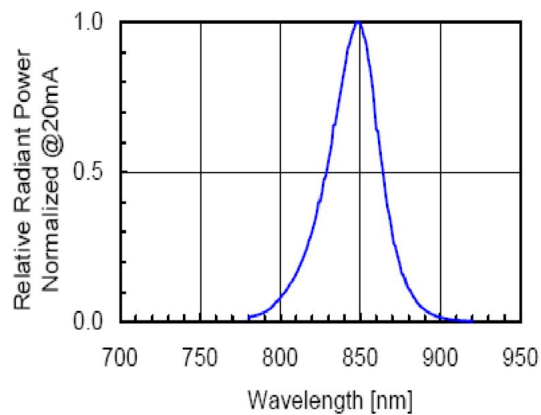
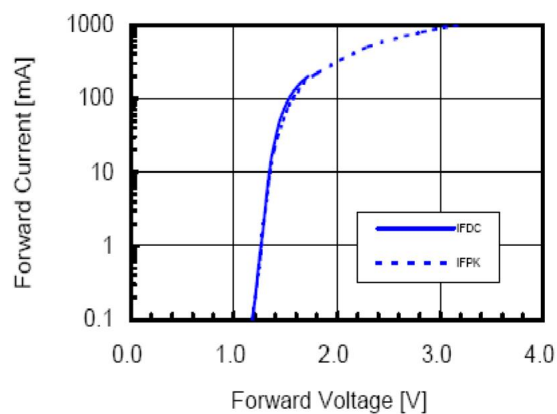
\*\* Condition for I<sub>FP</sub> is pulse of 1/10 duty and 0.1msec width

## Electrical & Optical Specifications at Ta = 25°C

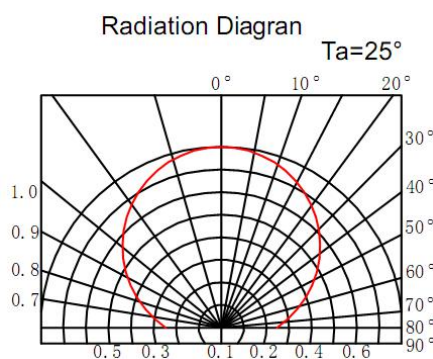
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Forward Voltage	V <sub>F</sub>	--	1.5	1.7	V	I <sub>F</sub> =20mA
Reverse Current	I <sub>R</sub>	--	--	10	uA	V <sub>R</sub> =5V
Peak Wavelength	λ <sub>p</sub>	--	850	--	nm	I <sub>F</sub> =20mA
Radiant Intensity	E <sub>e</sub>	5.0	--	--	mW/sr	I <sub>F</sub> =20mA
Spectral Bandwidth	Δλ	--	40	--	nm	I <sub>F</sub> =20mA
Rise/Fall Time	Tr / Tf		25/15	35/35	ns	I <sub>F</sub> =50mA
View angle	2θ <sub>1/2</sub>	-	120	-	deg	I <sub>F</sub> =20mA

## Typical Electrical and Optical Characteristics Curves

(25 Ambient Temperature Unless Otherwise Noted)



## Directive Characteristics



## RELIABILITY

### (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 30min 5min 30min 5min	100 Cycles	50	0/50
2	Thermal shock	MIL-STD-202G	-40°C ~ 100°C 15min 15min	500 Cycles	50	0/50
3	High Temperature Storage	JEITA ED-4701 200 201	Ta=100°C	1000 Hours	50	0/50
4	Low Temperature Storage	JEITA ED-4701 200 201	Ta=-40°C	1000 Hours	50	0/50
5	Room Temperature Life Test		Ta=25±5°C IF=20mA	1000 Hours	50	0/50
6	High Temperature High Humidity Life Test		Ta=60°C RH=85% IF=20mA	1000 Hours	50	0/50
7	Solderability (Reflow Soldering)	JEITA ED-4701 300 303	Tsol=235°C ± 5°C, 5sec (Using Flux, Lead Solder)	1 time, 5sec	10	0/10
8	Resistance to Soldering Heat (Reflow Soldering)	JEITA ED-4701 300 301	Tsol=250°C, 10 sec Pre Treatment: 35 °C 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

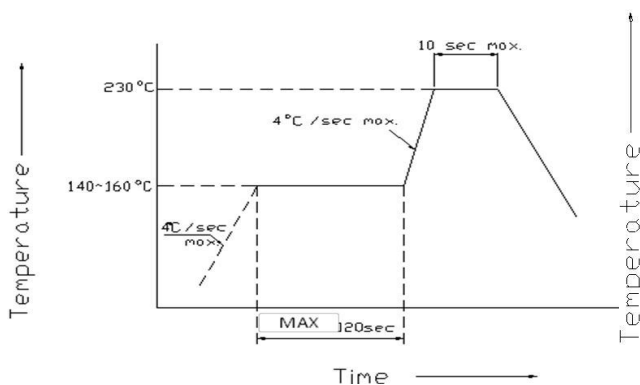
## Cautions

### (1) Soldering Conditions

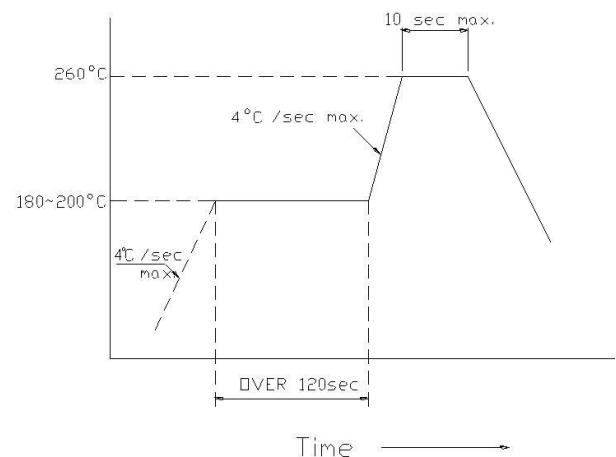
Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.

(Recommended soldering conditions)

#### (Lead Solder)

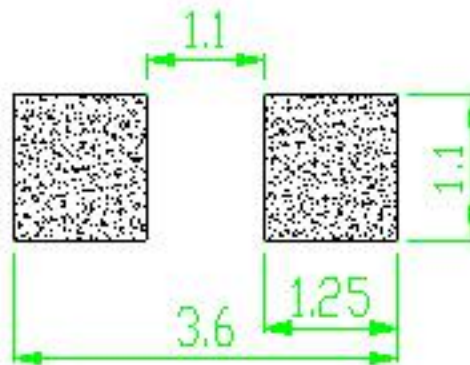


#### (Lead-Free Solder)



### Recommended Soldering Pattern

(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 : ( $V_F > 2.0V$  at  $I_F=0.5mA$ )

## (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:  $30^{\circ}C$  within and 60%RH below

4.2.3 Stored in 30%RH for moisture below.

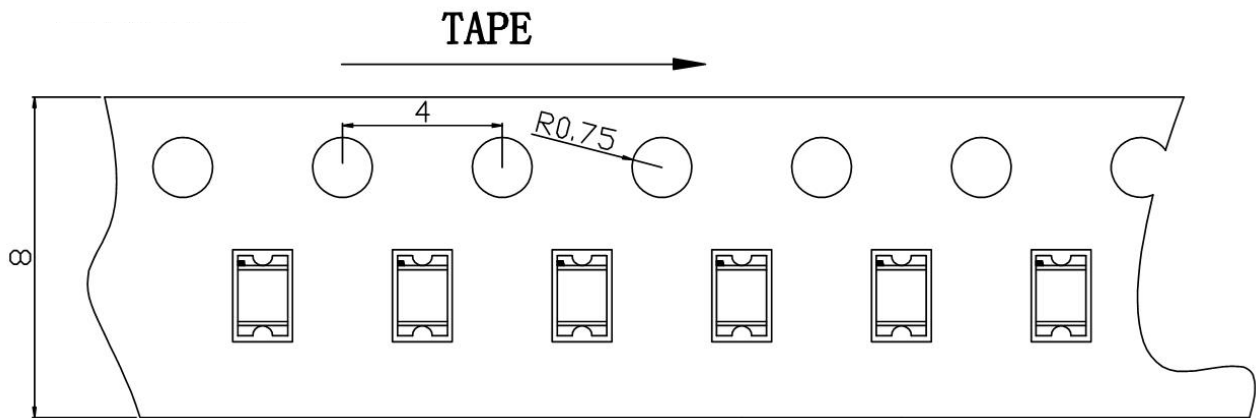
4.3. Products cannot be used for and over 15days after being packaged unless opening the package and take drying our process in  $85^{\circ}C/6H$ .

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  $85^{\circ}C/6H$

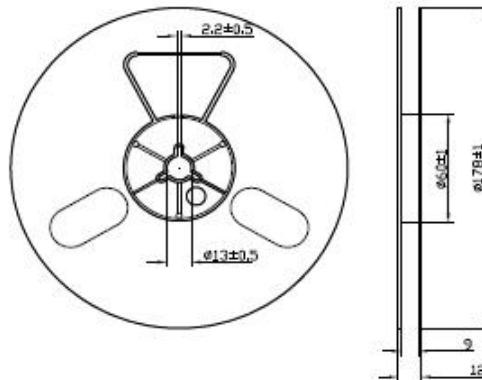
## PACKAGING

The LEDs are packed in cardboard boxes after taping.

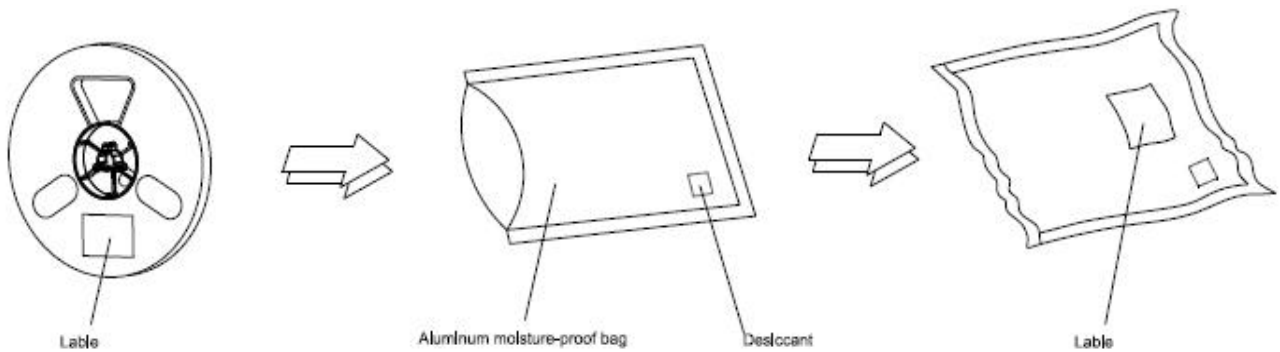


**Package: 3000 pcs/reel**

## Reel Dimensions



## Moisture Resistant Packaging



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