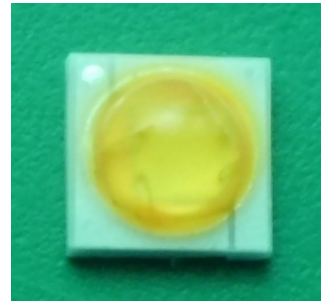


**High Power Ceramic LED**  
**P/ N: HL-C3535F13W1EA(White)**



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES



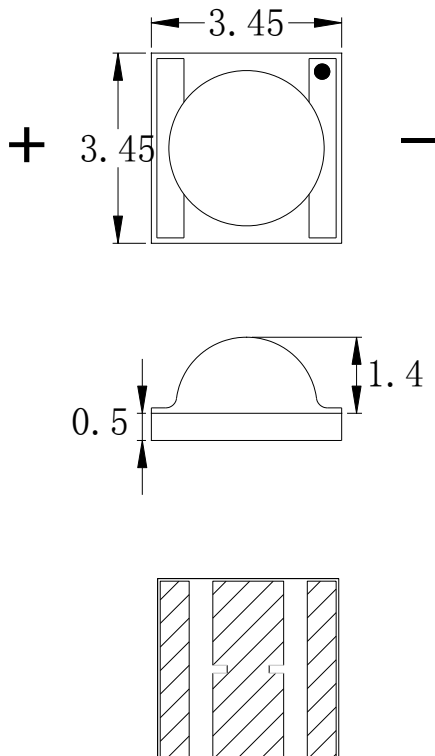
**Features**

- Dimension 3.45mm×3.45mm×1.9mm
- Long operating life
- High efficiency
- Lambertian radiation pattern
- Low voltage DC operated
- Cool beam, safe to the touch
- High heat dissipation efficiency
- Superior ESD protection
- RoHS compliant
- Maximum drive Current:700mA

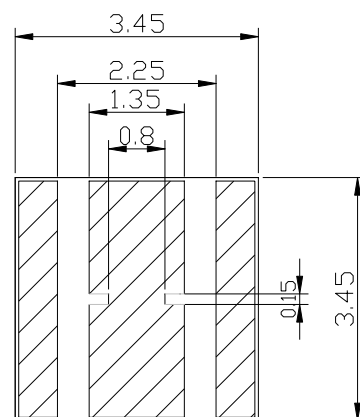
**Applications**

- Reading lamps
- Portable lightings /(flash lightings, bicycle)
- Indoor/Outdoor lightings
- Edge-lit signs (Exit, point of sale)
- Traffic signaling
- Architectural, landscaping and entertainment/advertising installations.

**Package Dimensions**



**Recommended Soldering**



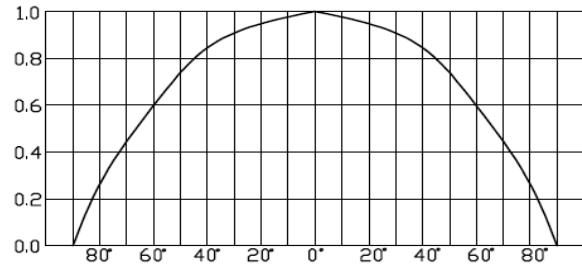
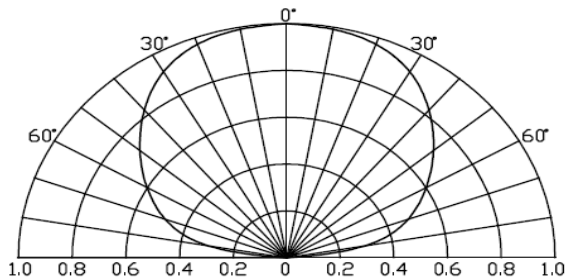
**Notes:**

1. All dimension units are millimeters.
2. All dimension tolerance is ±0.1mm unless otherwise noted.

## High Power Ceramic LED

### P/N: HL-C3535F13W1EA(White)

### Radiation Pattern



### Device Selection Guide

Part No.	Chip		Lens Color
	Material	Emitting Color	
HL-C3535F13W1EA	InGaN	White	Yellow diffused

### Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Device	Min.	Typ.	Max.	Units	Test Conditions
ΦV	Luminous Flux	White	100	110	—	lm	I <sub>F</sub> =350mA
			160	180			I <sub>F</sub> =700mA
V <sub>F</sub>	Forward Voltage [1]		3.0	3.4	3.6	V	I <sub>F</sub> =350mA
TC	Color Temperature[4]		5665		6530	K	I <sub>F</sub> =350mA
IR	Reverse Current		—	—	10	uA	V <sub>R</sub> = 5V
2θ <sub>1/2</sub>	50% power angle		120		140	deg	I <sub>F</sub> =350mA

Note:

- 1.For each die.
- 2.θ<sub>1/2</sub> is the angle from optical centerline where the luminous flux is 1/2 the optical centerline value.
- 3.The value only for reference.

### Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Rating	Units
Power dissipation[1]	P <sub>d</sub>	1	W
DC Forward Current[1]	I <sub>F</sub>	350	mA
Peak Forward Current (Duty 1/10@1KHZ ) [1]	I <sub>FP</sub>	700	mA
Reverse Voltage[1]	V <sub>R</sub>	5	V
Operating Temperature Range	T <sub>opr</sub>	-40°C To +65°C	
Storage Temperature Range	T <sub>stg</sub>	-40°C To +100°C	

Note:

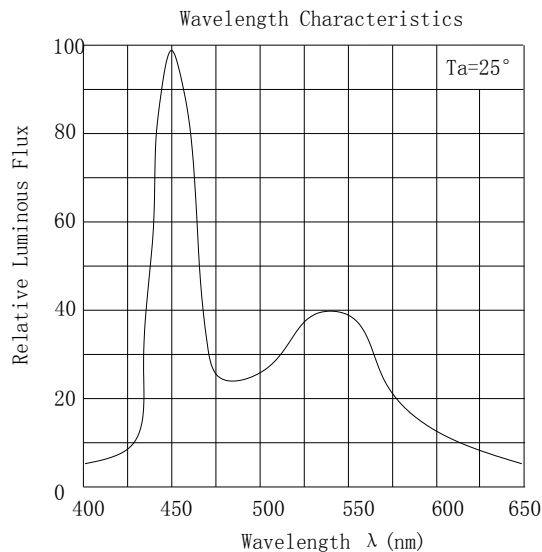
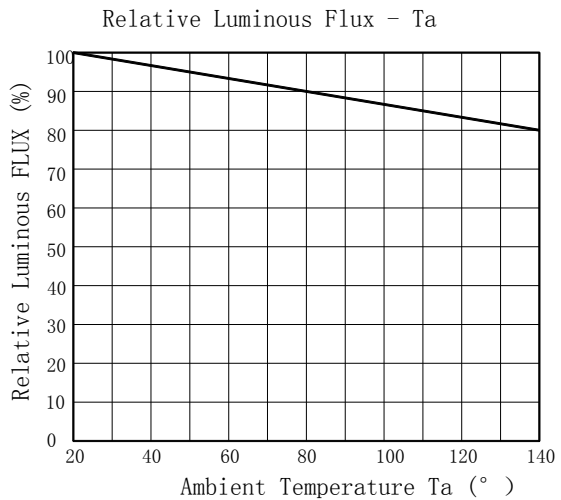
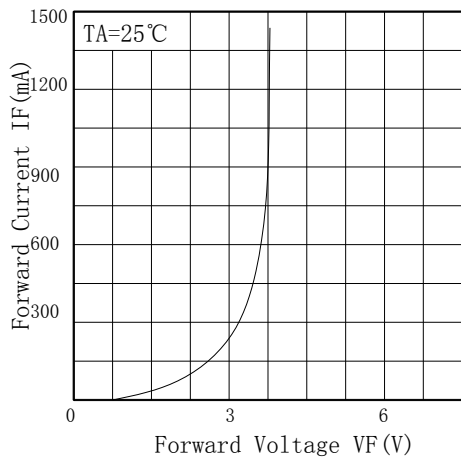
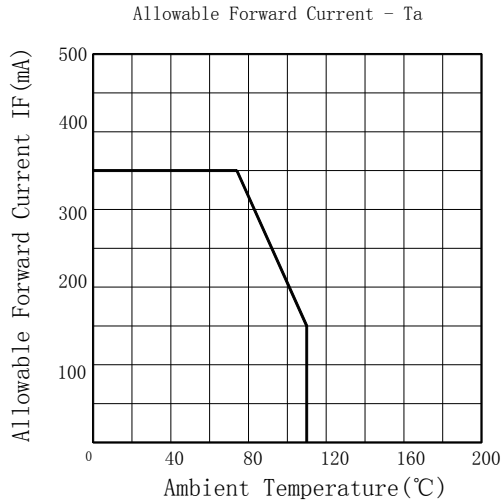
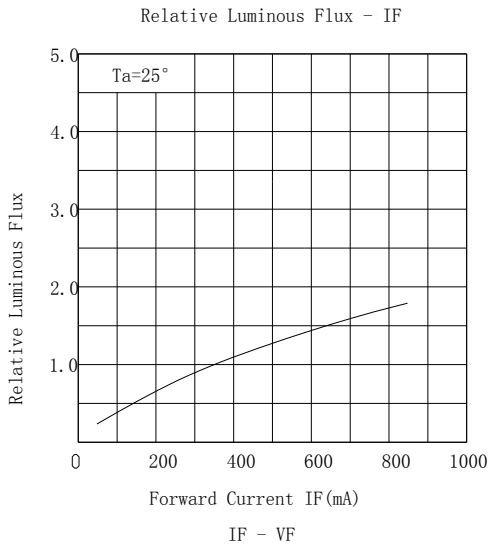
- 1.1/10 Duty Cycle,0.1ms Pulse Width.
- 2.The temperature of Aluminum PCB do not exceed 55°C.



# High Power Ceramic LED

P/N: HL-C3535F13W1EA(White)

## Typical Optical/Electrical Characteristics Curves ( $T_a=25^{\circ}\text{C}$ Unless Otherwise Noted )





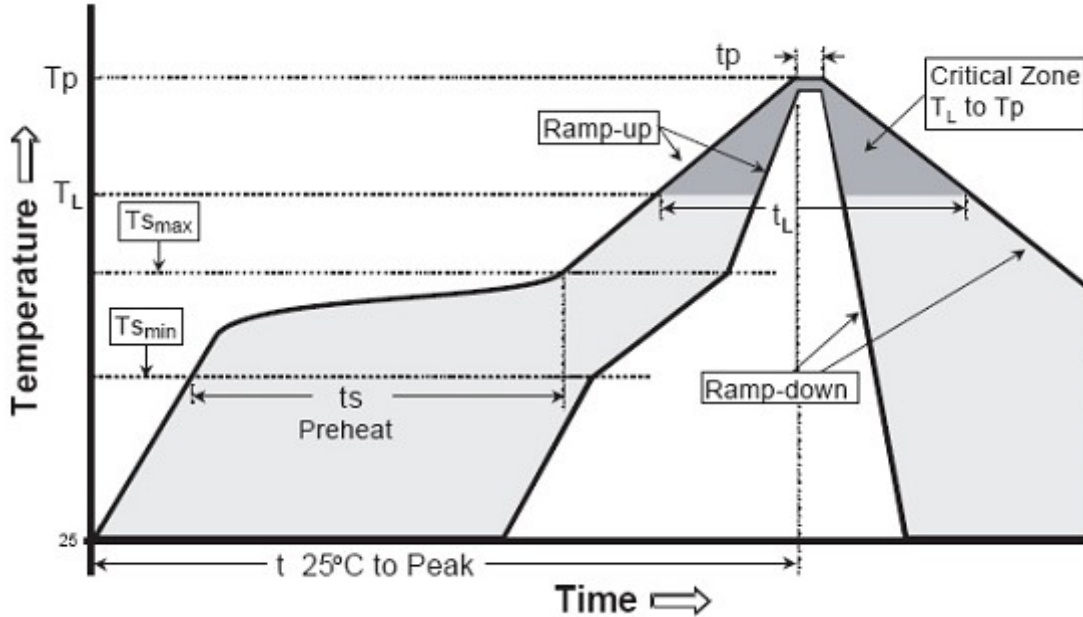
**High Power Ceramic LED**  
**P/N: HL-C3535F13W1EA(White)**

**Soldering**

**Manual Of Soldering**

The temperature of the iron tip should not be higher than 300°C and Soldering within 3 seconds per solder-land is to be observed.

**Reflow soldering** :(All temperatures refer to topside of package, measured on the package body surface.)



Profile Feature	Lead-Based solder	Lead-Free Solder
Average Ramp-Rate (Tsm <sub>max</sub> to Tp)	3°C/second max	3°C/second max
Preheat: Temperature Min (Tsm <sub>min</sub> )	100°C	150°C
Preheat: Temperature Max (Tsm <sub>max</sub> )	150°C	200°C
Preheat: Time (ts <sub>min</sub> to ts <sub>max</sub> )	60-120 seconds	60-180 seconds
Time Maintained Above: Temperature (TL)	183°C	217°C
Time Maintained Above: Time (tL)	60-150 seconds	60-150 seconds
Peak/Classification Temperature (Tp)	215°C	260°C
Time Within 5°C of Actual Peak Temperature (tp)	10-15 seconds	20-40 seconds
Ramp-Down Rate	6°C/second max	6°C/second max
Time 25°C to Peak Temperature	6 minutes max	8 minutes max

**Caution:**

- 1.Reflow soldering should not be done more than two times.The reflow temperature we recommend is 245°C(±5°C),the maximum soldering temperature should be limited 260°C.
- 2.Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable, suitable tools have to be used.
- 3.When soldering, do not press on the LEDs during heating.
- 4.After soldering, do not warp the circuit board.do not stack PCBS containg HL-3535 LEDS so that anything rests on the LED lens.

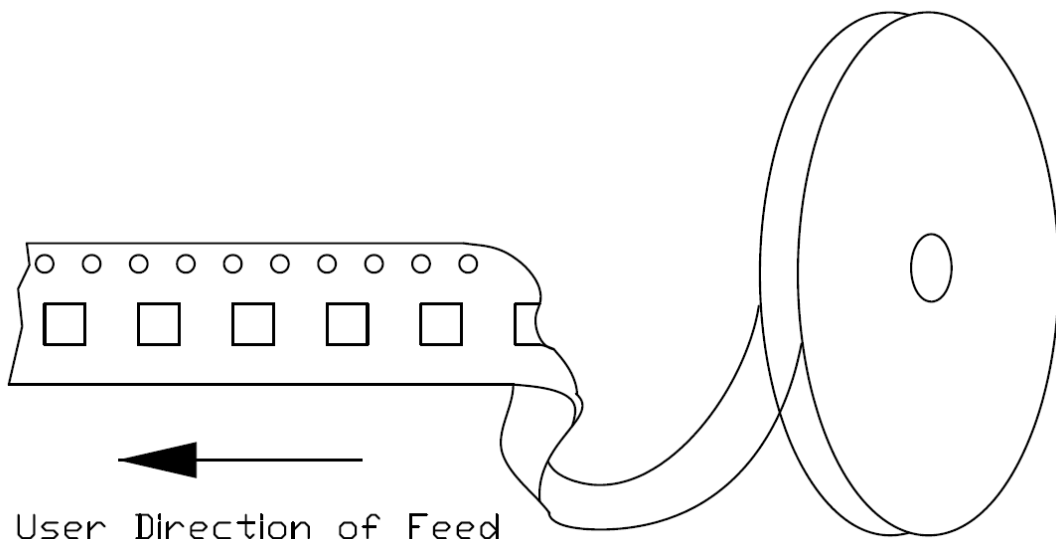
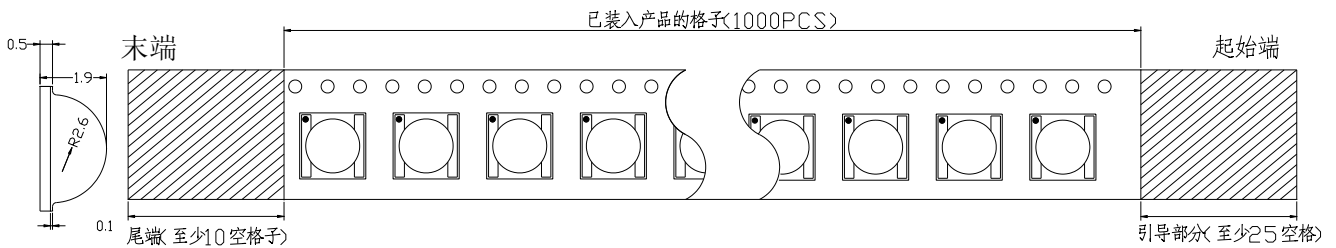
**High Power Ceramic LED**  
**P/N: HL-C3535F13W1EA(White)**

**Label**

ΦV: Luminous Flux rank  
VF: Forward voltage rank  
TC: Color temperature  
LOT.NO: Lot Number

	<b>HONGLITRONIC</b> 鸿利光电	
TYPE:XXXXXXXXXXXX		QTY:XXX PCS
Bin:		
ΦV: _____	TC: _____	VF: _____
DATE: _____		LOT. NO: _____

**Tape Specifications(Units:mm)**

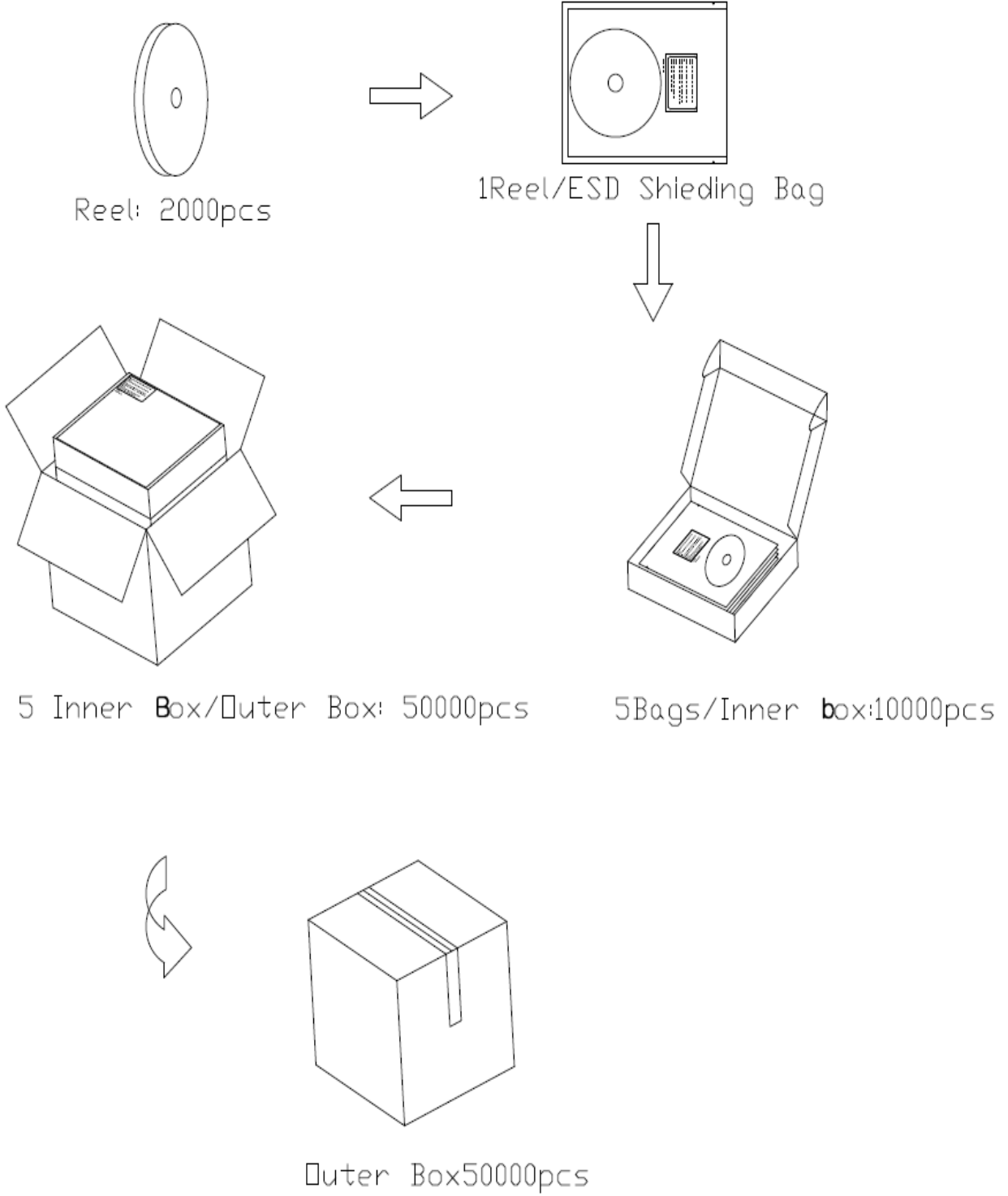




Under Development	
Mass production	●

**High Power Ceramic LED**  
**P/N: HL-C3535F13W1EA(White)**

**Packing**



**High Power Ceramic LED**  
**P/N: HL-C3535F13W1EA(White)**

**Precaution for use**

1.Storage

To avoid the moisture penetration ,we recommend storing LEDs in a dry box (or a desiccator) with a desiccant. The recommended conditions are temperature 5 to 30 degrees Centigrade. Humidity 60% maximum.

2.Precaution after opening packing

2.1.Soldering should be done right after opening the package (within 24Hrs).

2.2.Keeping of a fraction.

-Sealing

-Temperature: 5~30°C Humidity: less than 30%

2.3.If the package has been opened than 1 week or the color of desiccant changed, components should be dried for 12 Hrs at 60±5°C.

3.Any mechanical force or any excess vibration shall not be accepted to apply during cooling process to normal temperature after soldering.

4.Please avoid rapid cooling after soldering.

5.Components should not be mounted on warped direction of PCB.

6.This device should not be used in any fluid such as water, oil ,organic solvent etc.

When washing is required, Isopropyl Alcohol should be used.

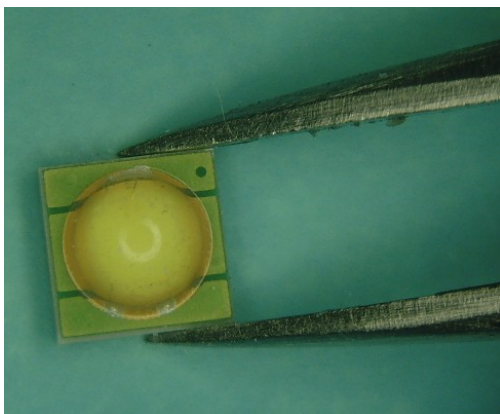
7.When the LEDs are illuminating, operating current should be decided after considering the package maximum temperature.

8.Avoid touching Lens parts especially by sharp tools such as pincette.

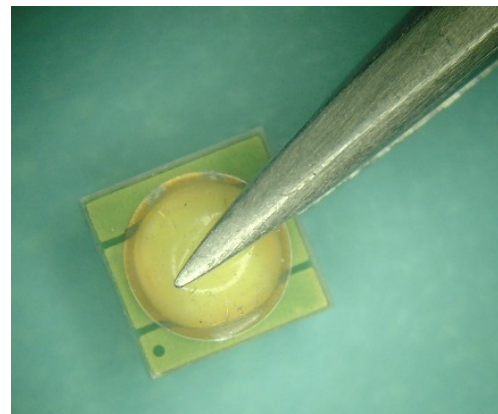
9.Please do not force over 1000g impact or pressure diagonally on the silicone lens. It will cause fatal damage on this product.

10.Please do not cover the silicone resin of the LEDs with other resin.

11.Do not use metal suction nozzle, rubber or silica gel suction nozzle is recommended.



**OK**



**NG**

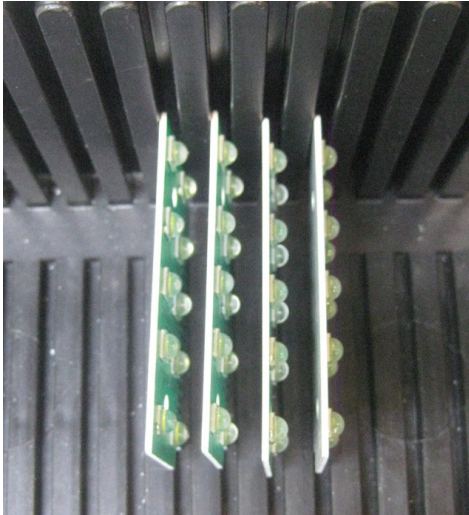


Under Development	
Mass production	●

**High Power Ceramic LED**  
**P/N: HL-C3535F13W1EA(White)**

12. Do not stack PCBs or assemblies containing the LEDs so that anything rests on the LED lens. Force applied to the LED lens may result in the lens being knocked off. PCBs or assemblies containing the LEDs should be stacked in a way to allow at least 2 cm clearance above the LED lens.

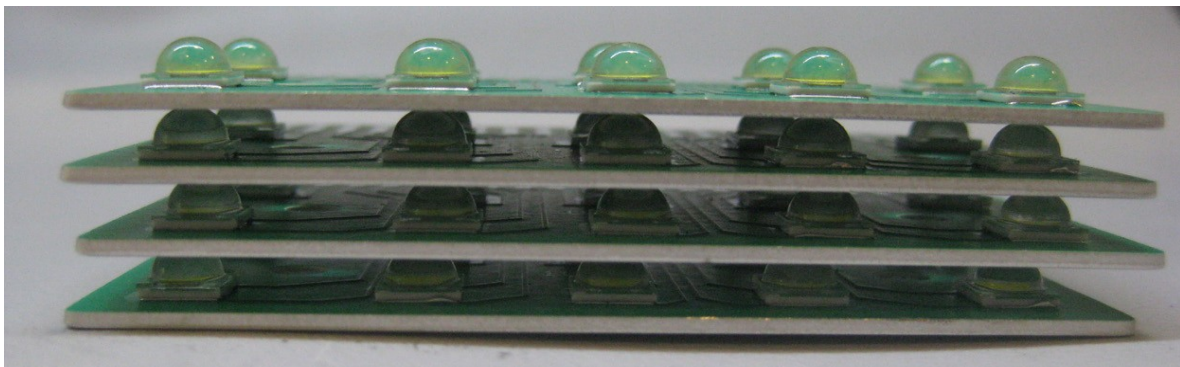
13. Do not use bubble wrap directly on top of the LEDs. Force from the bubble wrap can potentially damage the LED.



**OK**



**OK**



**NG**