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TEL：886-3-565-8800

Lextar

PT20W11 V1
Flash LED
(Product Specification)

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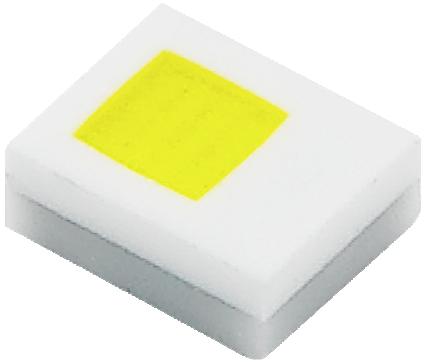
Approval Sheet

PT20W11 V1 Flash LED
Product Specification

RoHS

Product	2016 Flash LED
Model Name	PT20W11 V1
Customer	
Issue Date	2015/8/24



Feature

- ✓ High Brightness in small SMD package (L x W x H): 2.14 x 1.74 x 2.00 mm
- ✓ Environmental friendly ; RoHS compliance
- ✓ CIE 1931
- ✓ Multi layer ceramic-metal package Tech.
- ✓ Qualified according to JEDEC moisture sensitivity Level 1
- ✓ ESD protection : 8KV(HBM)

Applications

- ✓ Camera flash light
- ✓ Torch light for video

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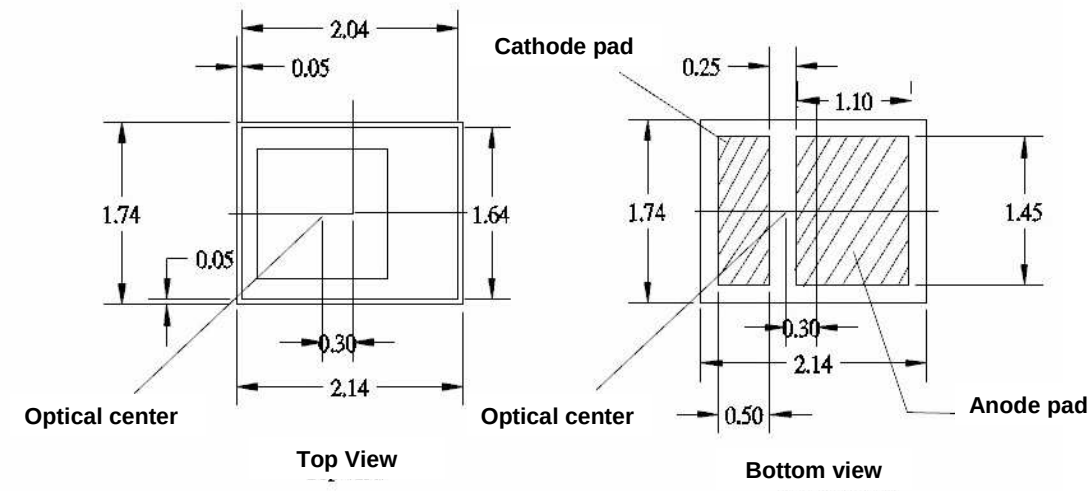
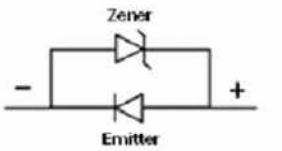
Package Dimension

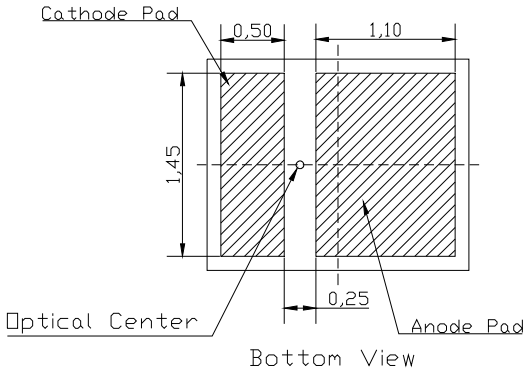


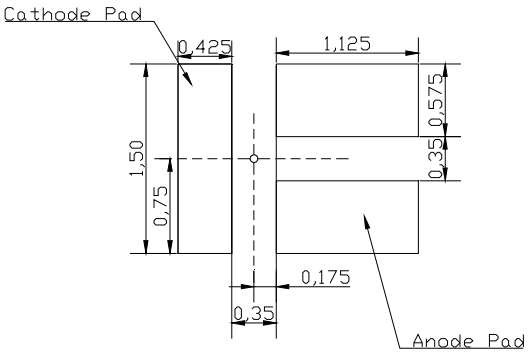


Unit : mm

Tolerance : ±0.1mm

Recommend Soldering Pad Layout





Unit : mm

Tolerance : ±0.1mm

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Opto-Electronical Characteristics

Parameter	Symbol	Condition	Min.	Typical	Max.	Unit
Forward Voltage	V_F	I_F = 1000mA	2.7	-	3.9	V
Luminous Flux	Φv	I_F = 1000mA	220	250	350	lm
Color Temperature	CCT	I_F = 1000mA	5000	5500	6000	K
View Angle	θ	I_F = 1000mA	-	120	-	deg
Thermal Resistance	R_{th}	I_F = 1000mA	-	10	-	°C/W

Notes: Optical and electronical testing condition is based on 50ms pulse.

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
DC Forward Current(1)	I_F	500	mA
Pulse Forward Current(2)	I_{FP}	1500	mA
Power Dissipation (Pulse Mode)	Pd	5.1	W
Electrostatic Discharge (HBM)	ESD	8000	V
Storage Temperature	Ts	-40 ~ 100	°C
Operation Temperature	T_{opr}	-40 ~ 85	°C
Junction Temperature	T_J	135	°C
Soldering Temperature		260 (5sec)	°C

(1) Operating temperature has to be controlled under junction temperature limitation.

(2) I_{FP} shall be applied under conditions as max duration time 400ms and 1/10 duty cycle.

(3) Reliability tests are based on MCPCB.

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Forward Voltage Rank (Ta=25℃)

Vf Rank	Min.	Max.	Unit	Condition
G	2.7	3.0	V	I_F = 1000mA
H	3.0	3.3	V	I_F = 1000mA
J	3.3	3.6	V	I_F = 1000mA
K	3.6	3.9	V	I_F = 1000mA

Notes: Forward Voltage tolerance is ±0.1V.

Luminous Flux Rank (Ta=25℃)

Luminous Flux Rank	Min.	Max.	Unit	Condition
A	220	250	lm	I_F = 1000mA
4	250	270	lm	I_F = 1000mA
5	270	300	lm	I_F = 1000mA
6	300	350	lm	I_F = 1000mA

Notes: Luminous flux tolerance is ± 10%.

Color Rank (Ta=25℃)

CCT	CIE Rank	CIE X	CIE Y
5000K~5500K	A5055	0.3350	0.3694
		0.3505	0.3900
		0.3445	0.3510
		0.3350	0.3350
5500K~6000K	A5560	0.3241	0.3549
		0.3350	0.3694
		0.3350	0.3350
		0.3260	0.3185

Notes: Color coordinates measurement tolerance is ±0.01.

Bin code definition (for example)

Vf Rank	Luminous Flux Rank	CIE Rank
J	4	A5560

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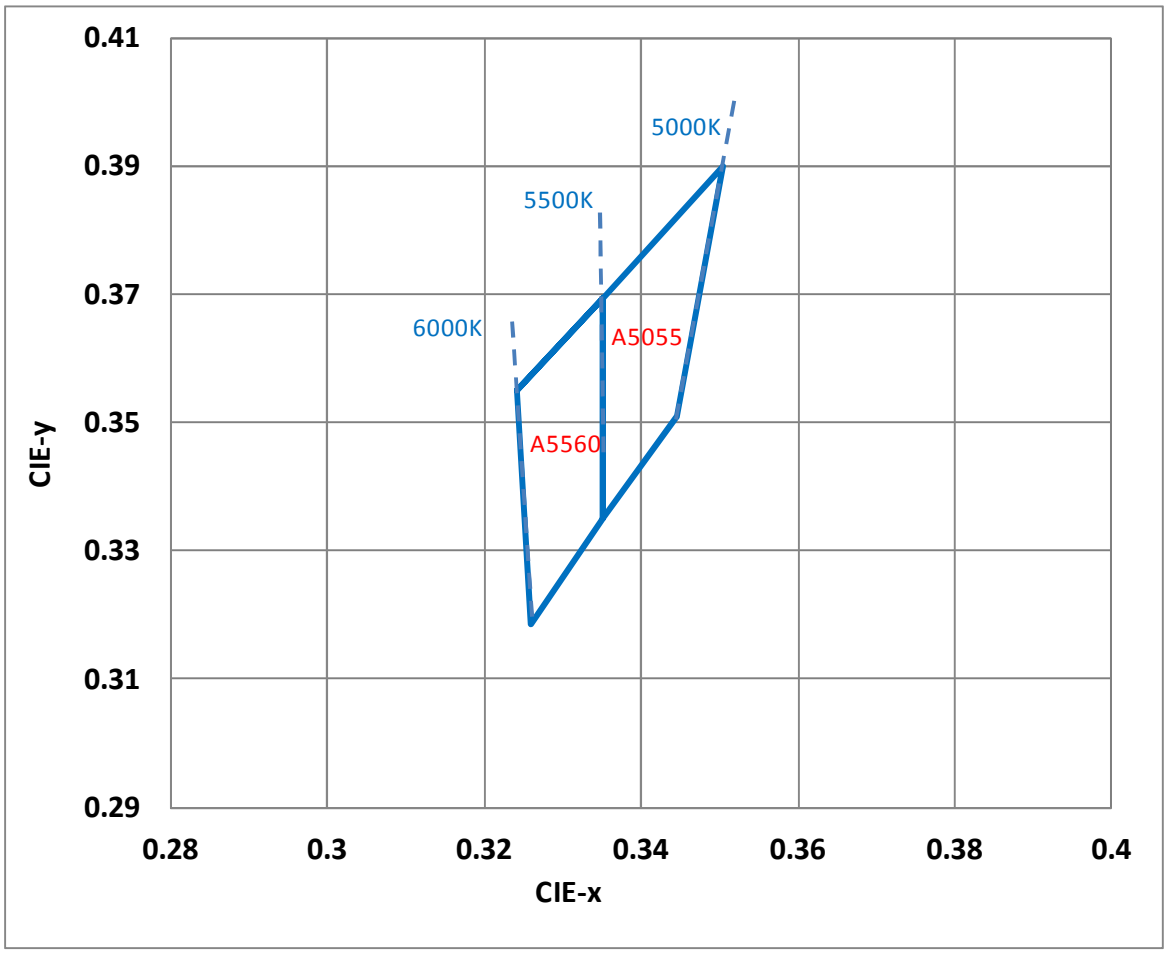
Chromaticity Coordinates



Notes: Correlated color Temperature is derived from the CIE 1931Chromaticity diagram.

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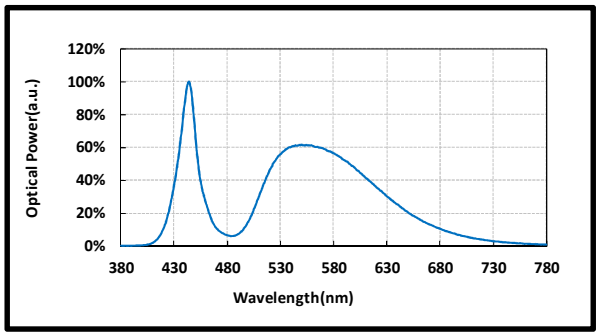
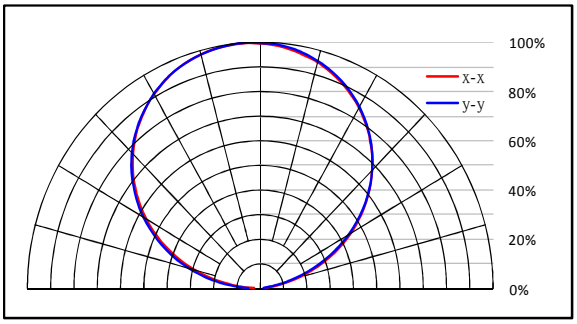
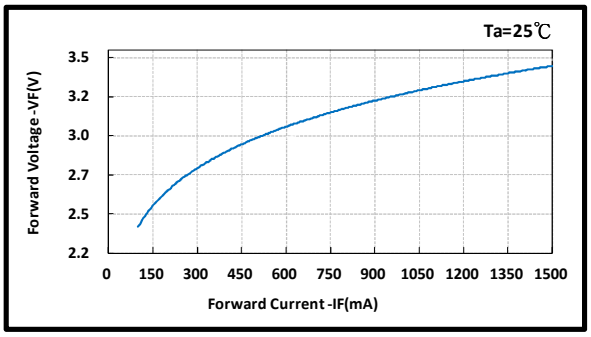
Spectrum



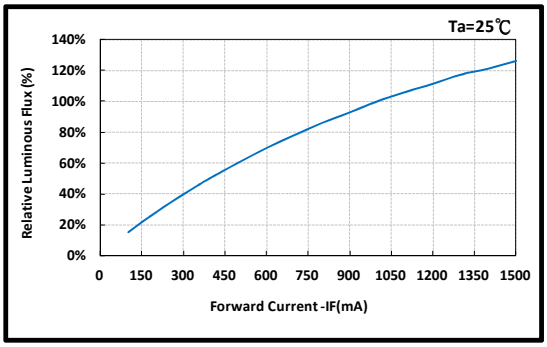
Radiation Pattern



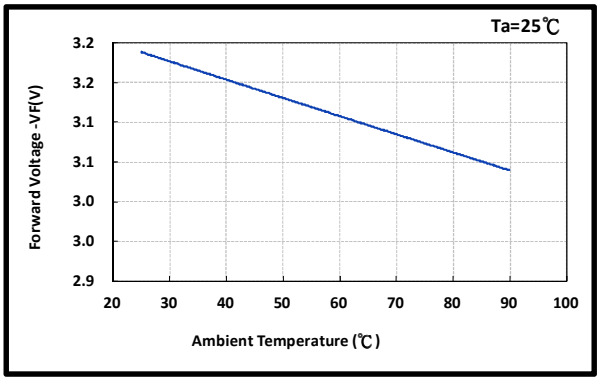
Forward Current vs. Forward Voltage



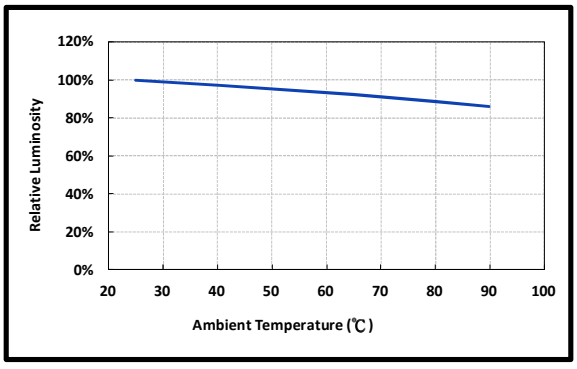
Forward Current vs. Relative Luminous Flux



Forward Voltage vs. Ambient Temperature



Relative Luminousity vs. Ambient Temperature



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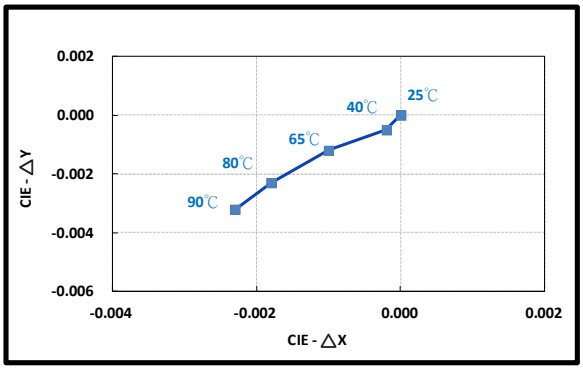
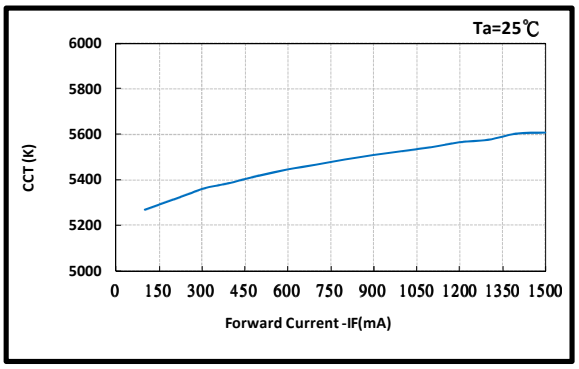
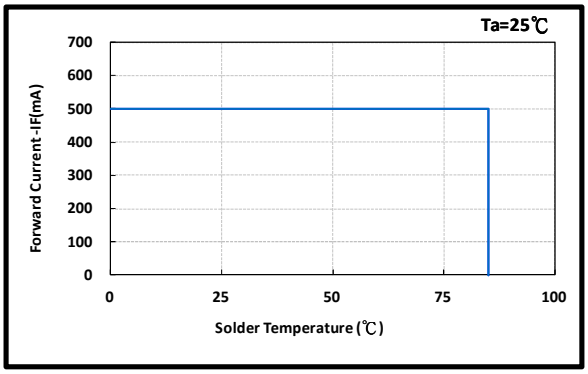
Chromaticity vs. Ambient Temperature



Forward Current vs. CCT (Ta=25℃)



Allowable Forward Current vs. Ambient Temperature



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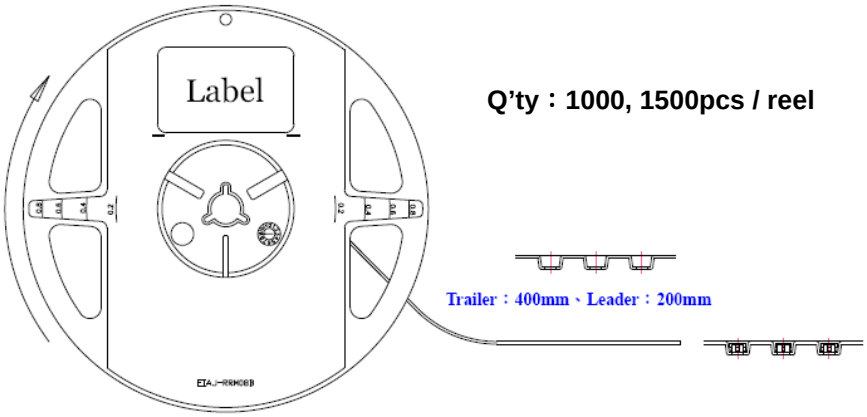
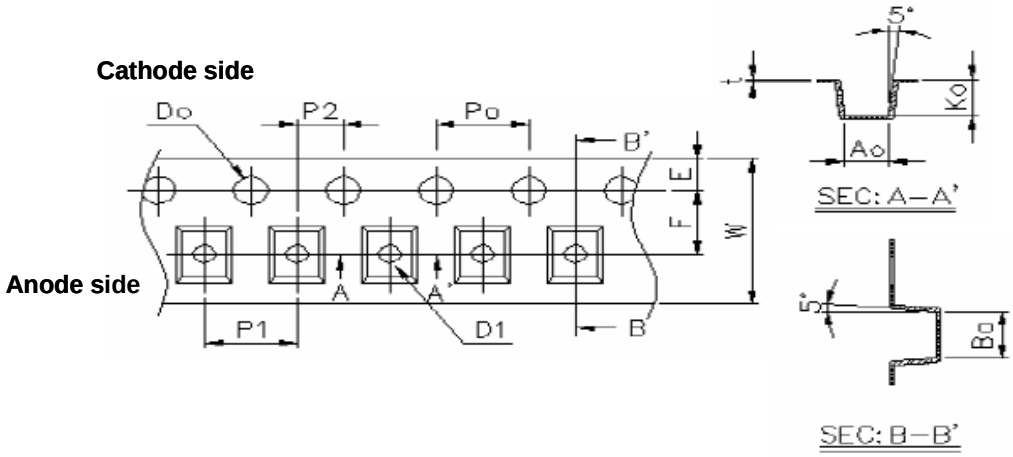
Label

Carrier Taping





Unit: mm

Item	Spec	Tol.(+/-)	Item	Spec	Tol.(+/-)
W	8.00	±0.20	P2	2.00	±0.05
E	1.75	±0.10	P0 × 10	40.00	±0.20
F	3.50	±0.05	t	0.23	±0.05
D0	1.50	±0.10	A0	1.98	±0.10
D1	1.00	±0.10	B0	2.50	±0.10
P0、P1	4.00	±0.10	K0	2.25	±0.10

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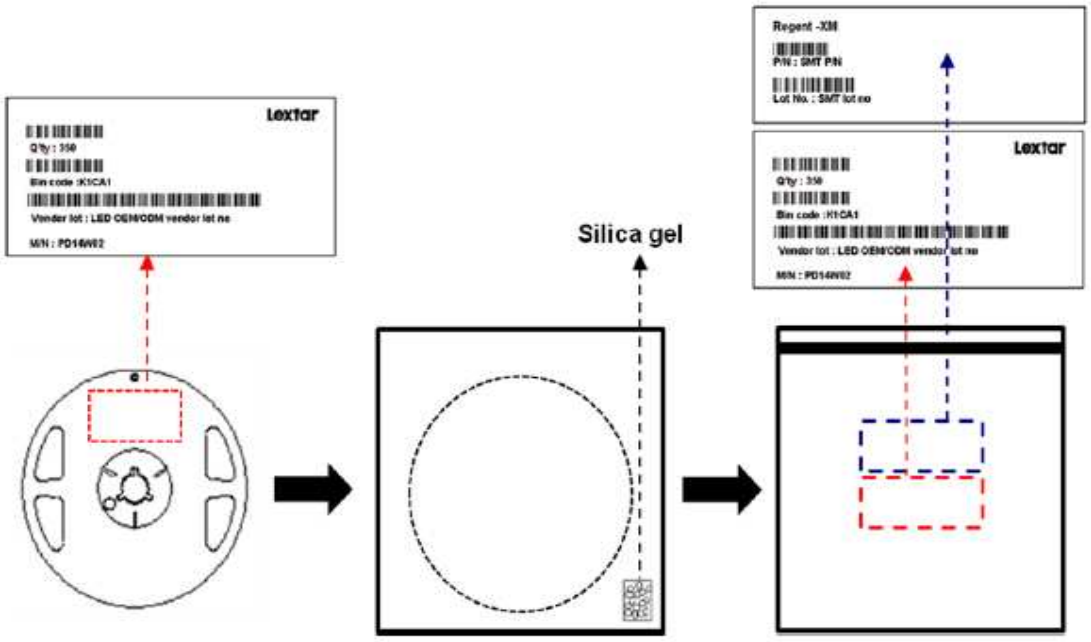
Shield Bag Taping



Packing Box

Type	Large Box		Medium Box		Small Box	
Dimension	541X511X276mm		385X303X260mm		283X235x70mm	
Maximum Reels	7"X12mm Reel	64/R	7"X12mm Reel	21/R	7"X12mm Reel	4/R
Minimum Reels	7"X12mm Reel	32/R	7"X12mm Reel	9/R	7"X12mm Reel	1/R

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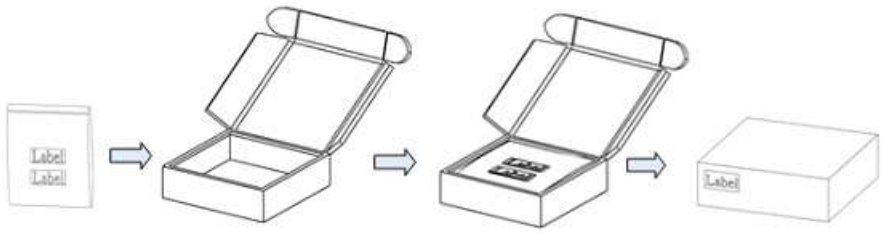
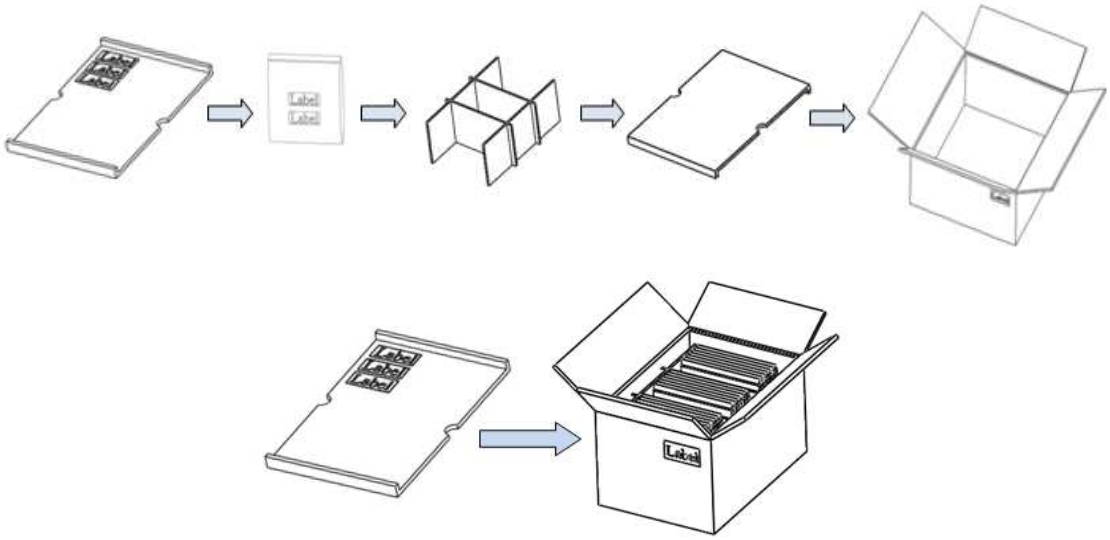
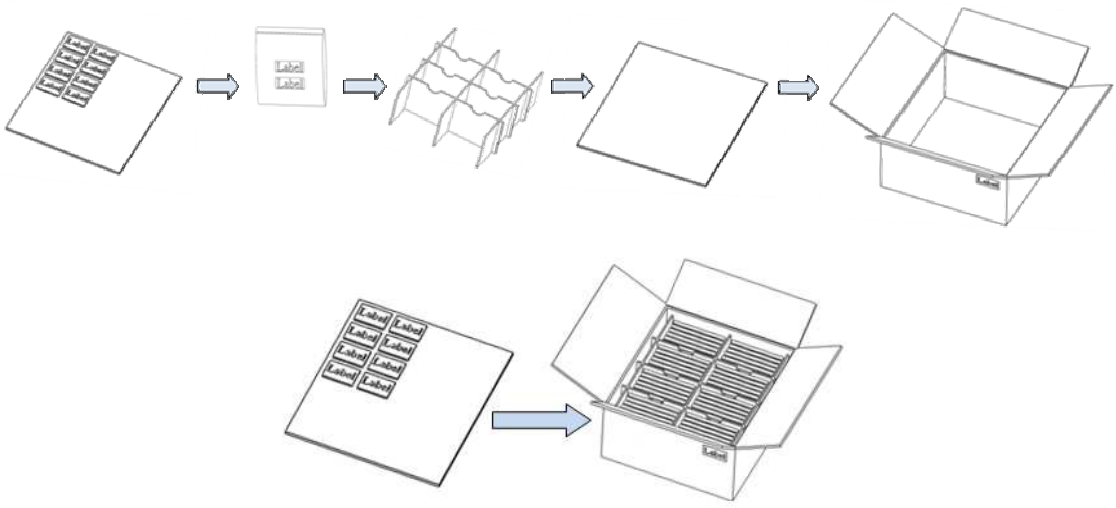
Small Box



Large Box



Large Box



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Safety Precautions

- The LED light output is too strong for human eyes without shield. Prevent eye contact directly more than seconds.
- Ensure operating under maximum rating.

Storage

- Before opening the package, the LEDs should storage under 30℃, 70% RH. Recommend to use within one year.
- After opening the package bag, the LEDs should be keep under 30℃, 60% RH. Recommend to use within 7days. If unused LEDs remain, suggest to store into moisture proof bag or original package bag with moisture absorbent material such as silica gel. Reseal well is necessary.
- If the product exceeded the storage period or the moisture absorbent material faded away, baking treatment should be done by following conditions.
  Bake condition: 60℃, 12hours (One time only).

Soldering Notice and Conditions

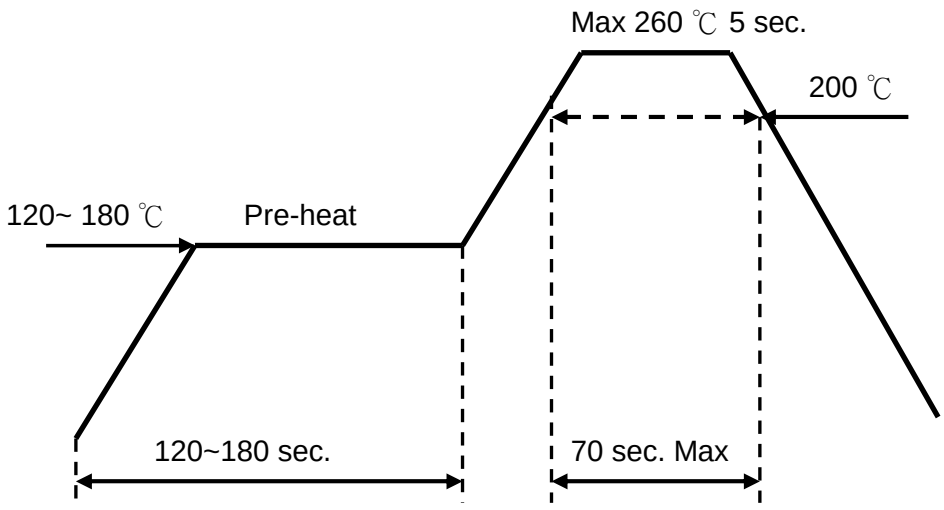
- When soldering LEDs,
- Do not solder/reflow the same LED over two times.
- Recommend soldering conditions:

Hand soldering: 350 ℃ max , 3 sec. max.

Reflow soldering: Pre-heat 180 ℃ max , 180 sec. max.

Peak 260 ℃ max , 5 sec. max.

- Reflow temperature profile as below: (lead-free solder)



- When soldering, don't put stress on the LEDs
- After LEDs have been soldered, strongly recommend not to repair to keep the LEDs performance.

Static Electricity

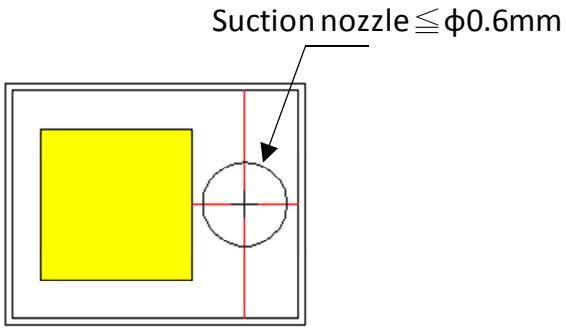
- LED package is extremely sensitive to static electricity. It's recommended that anti-electrostatic glove and wrist ban d is necessary when handling the LEDs. All devices are also be grounded properly as well.
- Protection devices design should be considered in the LED driving circuit.

Cleaning

- If washing is required, recommend to use alcohol as a solvent.
- Recommend to avoid cleaning the LEDs by ultrasonic. If necessary, pre-test the LED is necessary to confirm whether any damage occur after the process.

SMT

- Suction nozzle diameter is recommended. (Diameter ≦0.6mm)
- Suction nozzle should aim the center of circle, and prevent unnecessary damage on phosphor sheet (yellow area) of LED.



Smart Lighting
Amazing Life

Lextar Electronics Corporation is the leading LED (Light Emitting Diode) maker integrating upper stream epitaxial, middle stream chip, downstream package, SMT and LED lighting application. Founded in May 2008, Lextar is a subsidiary of AU Optronics, the leading TFT-LCD and solar PV manufacturer. Lextar' s product application includes LCD backlight, commercial lighting source, consumer lighting source and various lighting solutions. Lextar officially acquired LightHouse Technology Inc. in March 2010, the largest LED packaging house in Taiwan for TFT-LCD backlight application. It currently has 3 manufacturing plants in Taiwan, and one in Suzhou, China. The company's turnover in 2011 reached 309 million USD.