No. 3, Gongye E. 3rd Road, Hsinchu Science Park, Hsinchu 30075, Taiwan
TEL：886-3-565-8800

PR80E07 V0

Product Specification

Updated on 2018/11/22

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Lextar

Approval Sheet

PR80E07 V0
Product Specification

RoHS

Product	4 in 1 SMD LED
Model Name	PR80E07
Issue Date	2018/07/31

Feature

- ✓ 4 in 1 package SMD LED (L x W x H) of 3.5 x 2.8 x 1.3 mm
- ✓ View angle : =105 ° ±10 °
- ✓ Environmental friendly ; RoHS compliance
- ✓ Qualified according to JEDEC moisture sensitivity Level 3

Applications

- ✓ Counterfeit detection
- ✓ Indicator and backlighting for all consumer electronics
- ✓ Biometric detection

MAKER			CUSTOMER			
Prepared	**Checked**	**Approved**				
Leo Chen	Vincent Chuang	Sherry Chiu				

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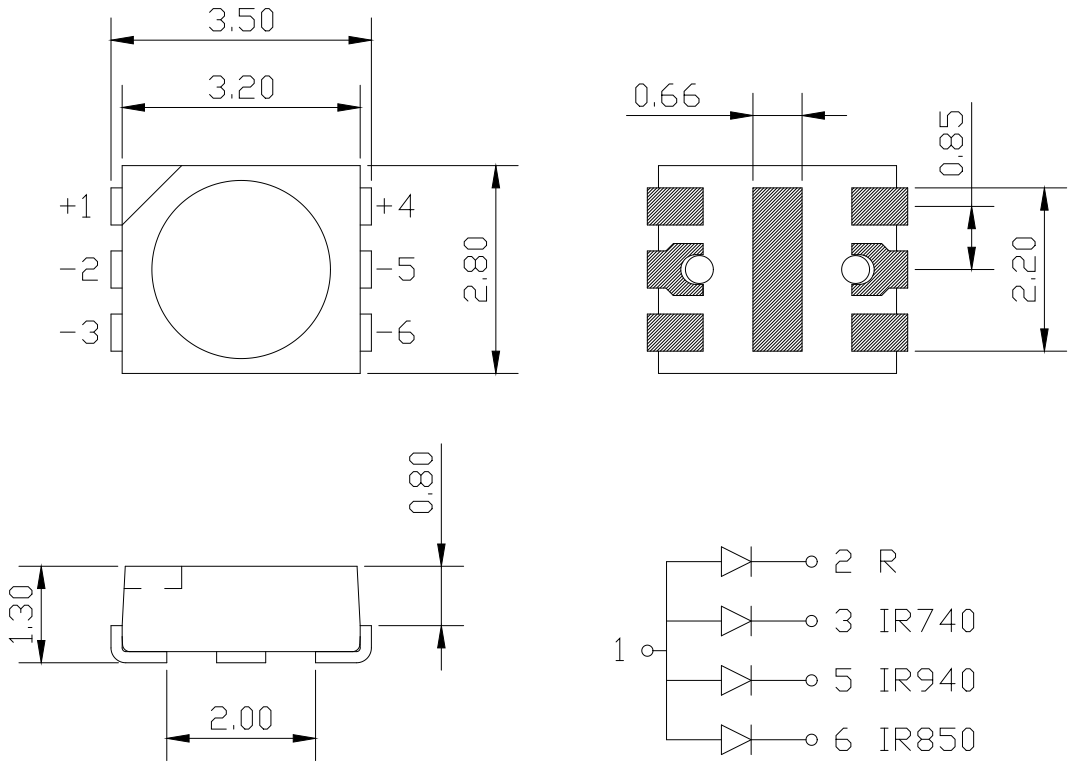
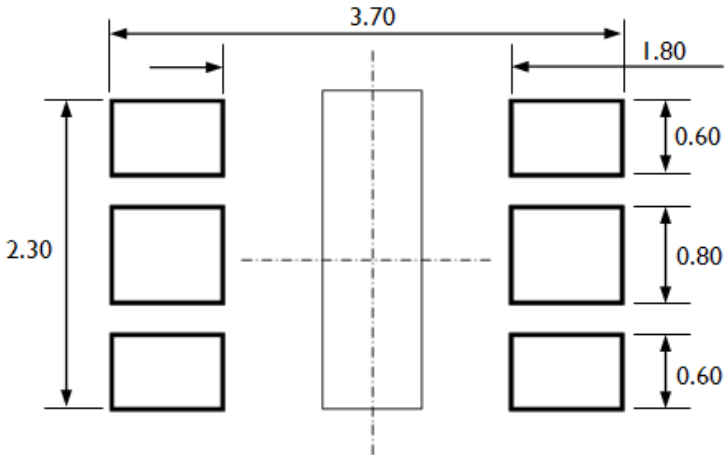


Unit: mm, Tolerance: ±0.1mm

Recommended Soldering Pad



Unit: mm, Tolerance: ±0.1mm

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Performance

PR80E07 V0
Product Specification

Absolute Maximum Ratings (Ta=25℃)

Items	Symbol	Absolute Maximum Rating				Unit
		R:635	IR:740	IR:850	IR:940	
DC Forward Current	I_F	30	50	50	60	mA
Peak Forward Current(1)	I_{FP}	80	100	100	100	mA
Reverse Voltage	V_R	5	5	5	5	V
Power Dissipation	P_D	78	100	90	96	mW
Total Power Dissipation	P_D	200				
Operation Temperature	T_{opr}	-40~+85				℃
Storage Temperature	T_{stg}	-40~+125				℃
Junction Temperature	T_j	100				℃

(1) I_{FP} Condition: Duty 10%, pulse width 0.1ms

Electro-Optical Characteristics (Ta=25^{0}C)

Characteristics	Condition	Symbol	Values				Unit
			R:635	IR:740	IR:850	IR:940	
Wavelength(1)	I_F= 20mA	λ_p(min)	625	730	840	930	nm
		λ_p(typ.)	635	745	850	940	
		λ_p(max)	645	755	860	950	
Forward Voltage(2)	I_F= 20mA	V_F(min)	1.7	1.4	1.4	1.2	V
		V_F(typ.)	2.0	1.6	1.5	1.4	
		V_F(max)	2.6	2.0	1.8	1.6	
Luminous Intensity(3)	I_F= 20mA	I_v (min)	8.0	7.4	7.4	6.0	mW
		I_v (typ.)	9.0	8.0	8.0	7.5	
		I_v (max)	10.0	11.4	11.4	9.0	
Reverse Current (max)	V_R= 5V	I_R	10	10	10	10	μA

(1) The tolerance of measurement of peak wavelength is ± 1nm.

(2) The tolerance of measurement of forward voltage is ± 0.1V.

(3) The tolerance of measurement of luminous intensity is ± 10%.

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Forward Voltage (I_F= 20mA)

Color	Rank	Min. (V)	Max. (V)	Unit
R: 635	1	1.7	2.6	V
IR: 740	2	1.4	2.0	
IR: 850	3	1.4	1.8	
IR: 940	4	1.2	1.6	

Luminous Intensity (I_F= 20mA)

Color	Rank	Min.	Max.	Unit
R: 635	R1	8	8.6	mW
	R2	8.6	9.4	
	R3	9.4	10	
IR: 740	H0	6.2	7.4	
	H1	7.4	8.6	
	H2	8.6	10.2	
	H3	10.2	11.4	
IR: 850	I1	7.4	8.6	
	I2	8.6	10.2	
	I3	10.2	11.4	
IR: 940	J1	6	6.9	
	J2	6.9	8.1	
	J3	8.1	9	

Peak Wavelength (I_F= 20mA)

Color	Rank	Min. (nm)	Max. (nm)	Unit
R: 635	R	625	645	nm
IR: 740	H	730	755	
IR: 850	I	840	860	
IR: 940	J	930	950	

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Bin code definition

Bincode: RR11HH12 II13 JJ14

	Wavelength	Intensity	Voltage
R: 635	R	R1	1
IR: 740	H	H1	2
IR: 850	I	I1	3
IR: 940	J	J1	4

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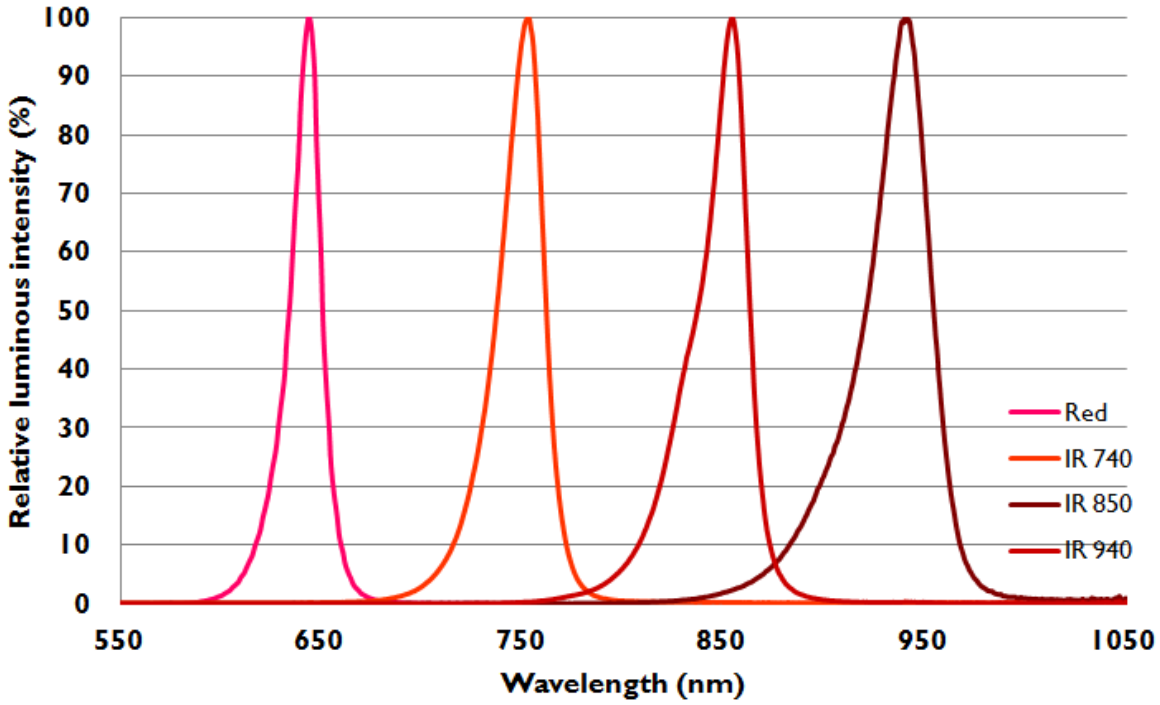
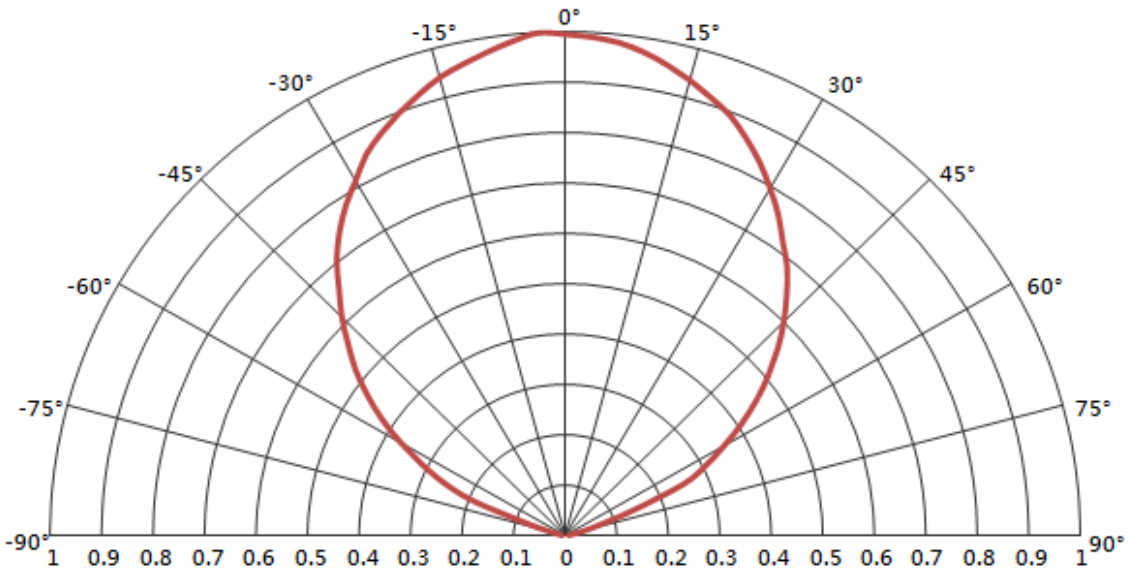
Spectrum Distribution Ta=25°C



Radiation Pattern Ta=25°C



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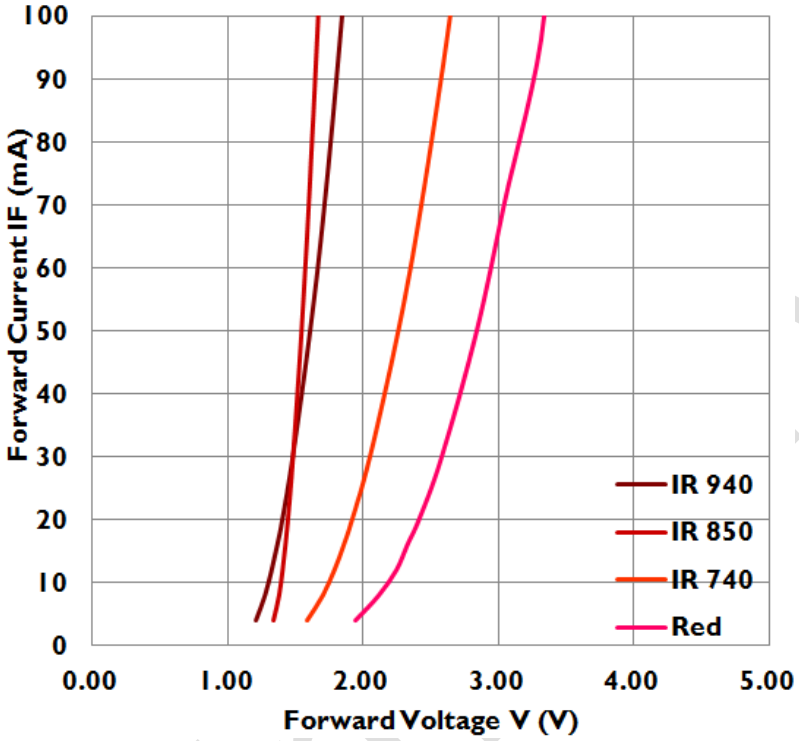
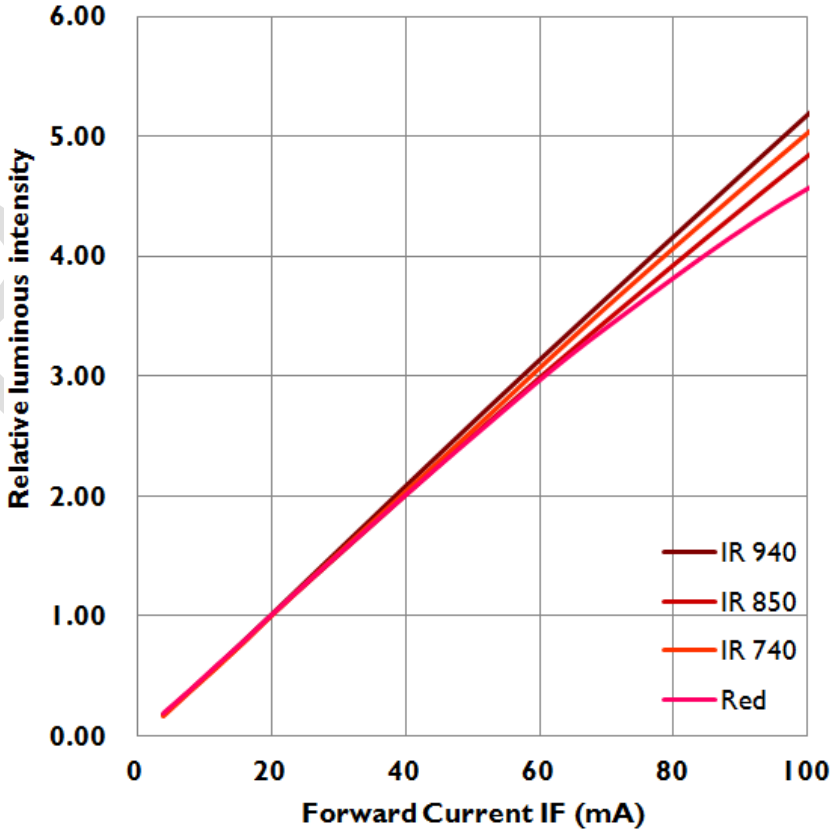
Forward Voltage vs. Forward Current Ta=25°C



Forward Current vs. Relative Luminosity



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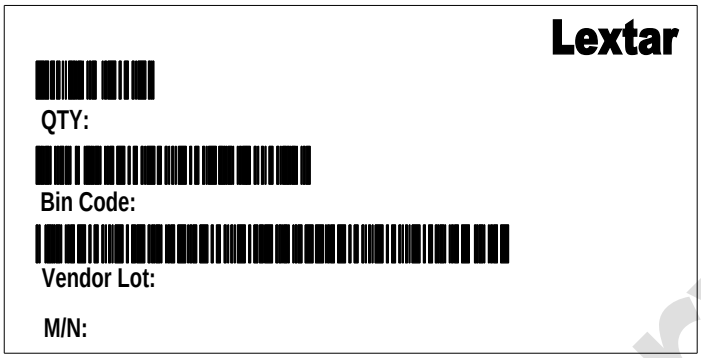
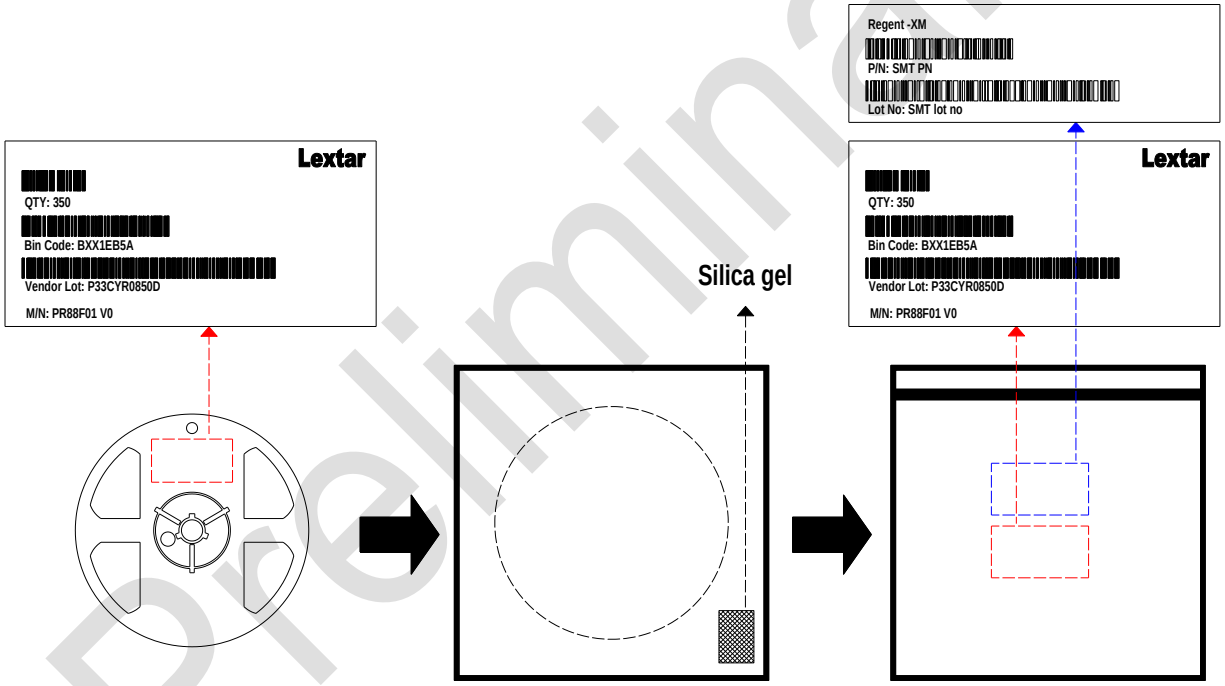
Label



Shield Bag



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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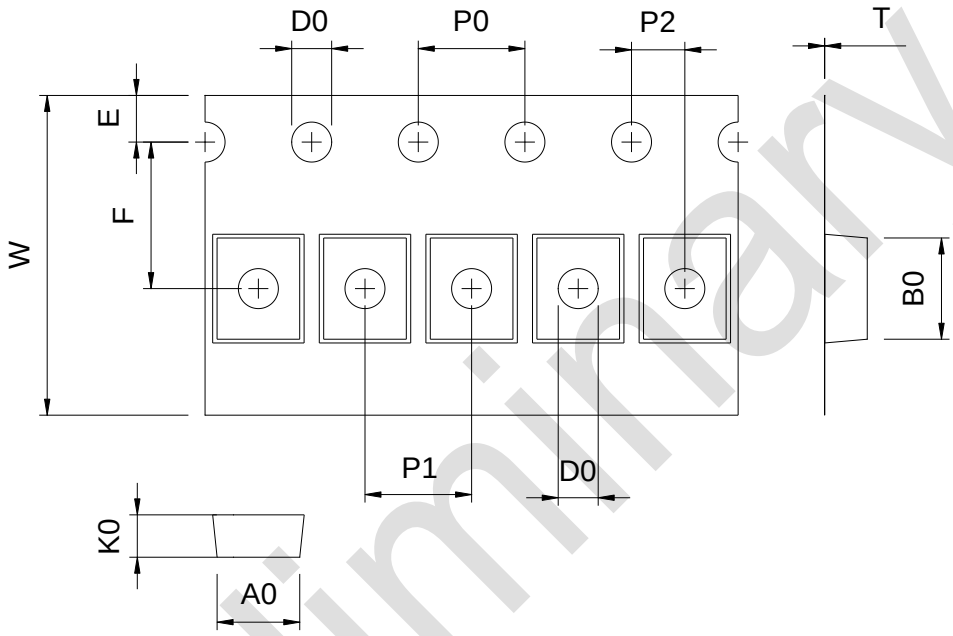
Carrier Taping

Minimum packing amount is 500 pieces per reel

7 inch reel – 500/1000/2000 pieces per reel



UNIT:mm

symbol	Ao	Bo	Ko	Po	P1	P2
spec	3.10±0.10	3.8±0.10	1.60±0.10	4.00±0.10	4.00±0.10	2.00±0.05
symbol	T	E	F	Do	W	
spec	0.25±0.02	1.75±0.10	5.50±0.05	1.50±0.10	12.00±0.30	

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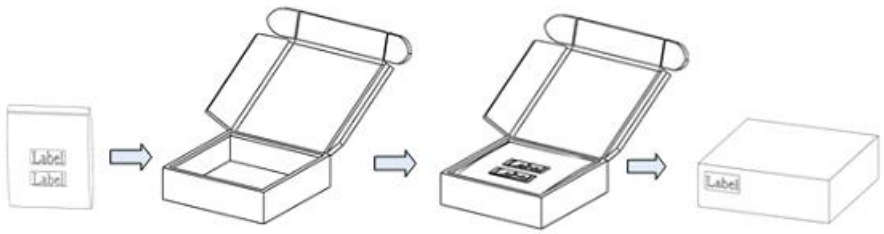
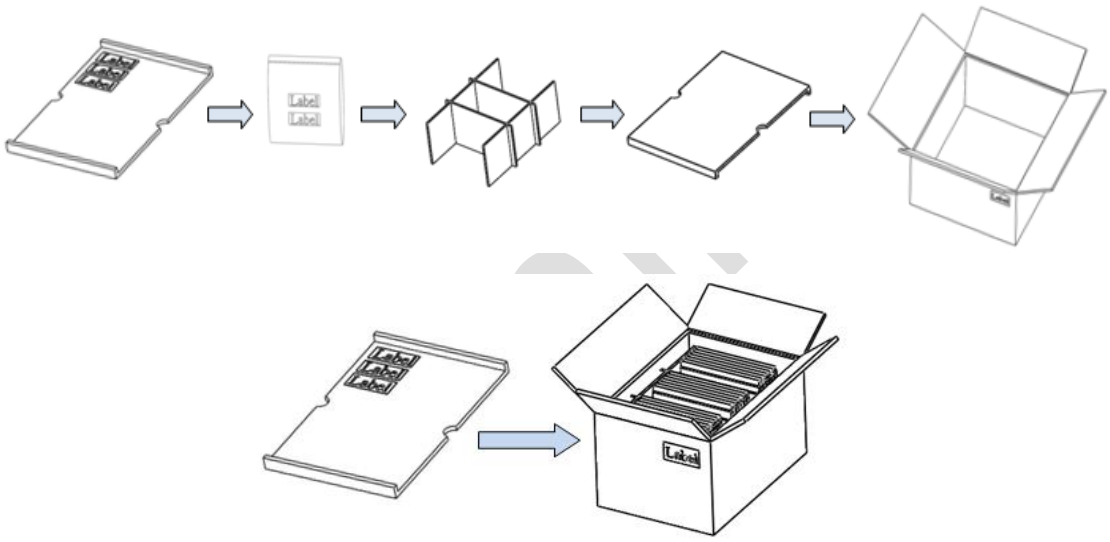
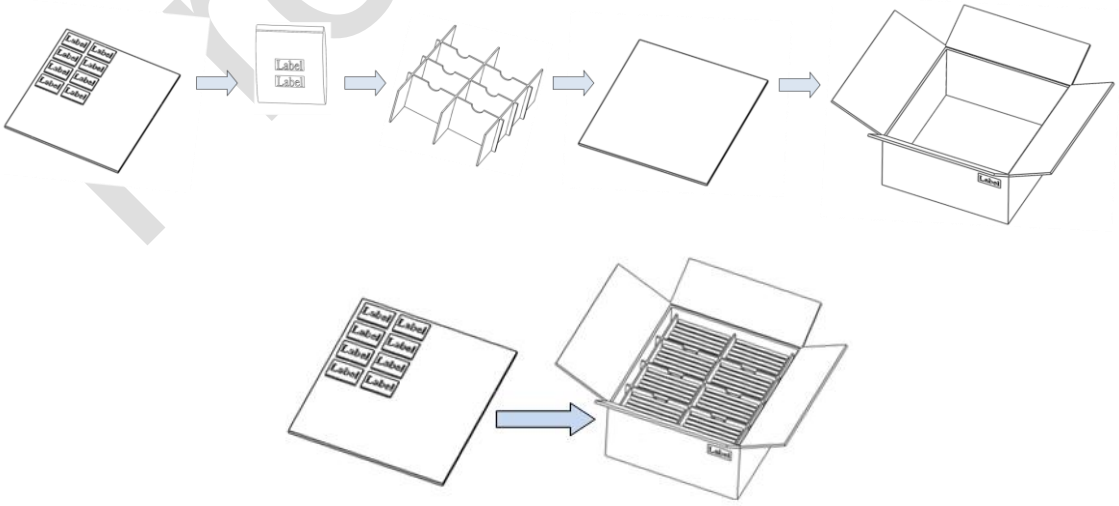
Small Box



Medium 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℃, 60% RH.
- After opening the package bag, the LEDs should be keep under 30℃, 60% RH. Recommend to use within 168 hrs. 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

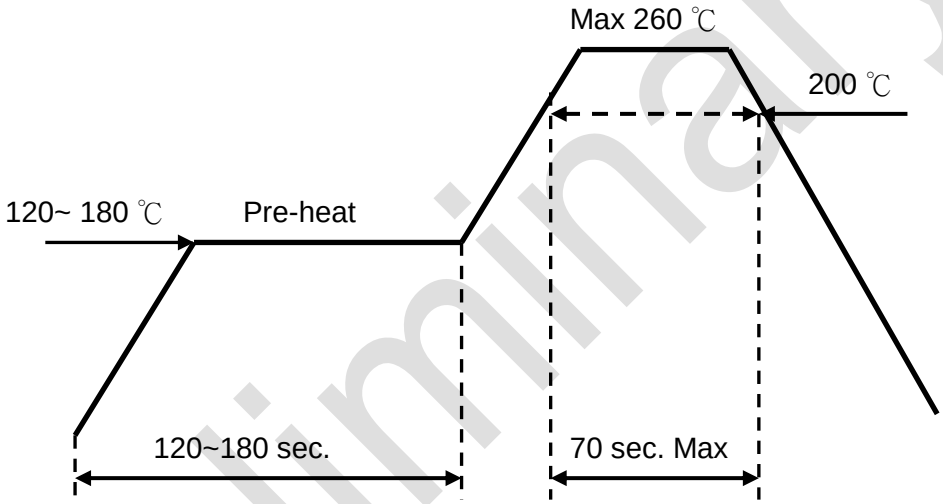
- When soldering LEDs,
- Do not solder/reflow the same LED over two times.
- Recommend soldering conditions:

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

Reflow soldering: Pre-heat 150 ℃ max , 180 sec. max.

Peak 260 ℃ max , 10 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 band 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.