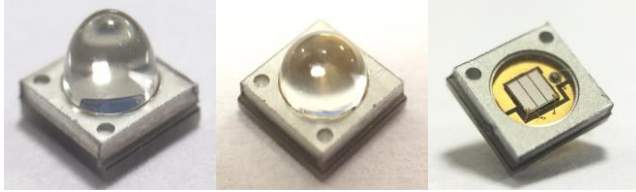


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3939 UVA LED

3939 Ceramic UVA LED



(30D)

Crystal Lens

(60D)

Crystal Lens

(120D)

Anti-UV Resin

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◆ Outline :

30° : 3.9*3.9*3.1mm

60° : 3.9*3.9*2.5mm

120° : 3.9*3.9*1.63mm

◆ High Efficiency & Power 3~5W

◆ Good Thermal Dissipation & Optical Uniformity

Features

- ROHS and REACH-compliant
- MSL 2 qualified according to J-STD 020 (well packaged)
- ESD 8KV

Applications

- UV Curing
- Medical applications
- Industrial facility applications

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■ Maximum rating (Ta : 25°C)

Characteristics	Symbol	Min.	Typical	Max.	Unit
DC Forward Current ¹	I _F	---	---	1,000	mA
Pulse Current(@1/10 duty) ²	I _p	---	---	1,200	mA
Forward Voltage	V _F	3.1	---	4.8	V
Reverse Voltage	V _R	---	---	5	V
Leakage Current (5V)	I _R	---	---	10	μA
Junction Temperature ³	T _j	---	100	---	°C
Storage Temperature Range	T _{sto}	-40	—	80	°C
Soldering Temperature	T _{sol}	---	---	260	°C
Thermal Resistance Junction / Solder Point	R _{th}	---	4.5	---	°C/W
Beam Angle	2θ _{1/2}	---	30 60 120	---	Deg

◇ Notes:

1. For other ambient, limited setting of current will depend on de-rating curves.
2. D=0.01s duty 1/10.
3. When driving at maximum current the T_j must be kept below 100°C
4. Viewing angle(2θ_{1/2}) ± 5°

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■ Product list

Peak Wavelength Range	Beam Angle	Part Number
365~370nm	30°	3939A36503F000
	60°	3939C36503F000
	Flat	3939F36503F000
380~390nm	30°	3939A38503F000
	60°	3939C38503F000
	Flat	3939F38503F000
390~400nm	30°	3939A39503F000
	60°	3939C39503F000
	Flat	3939F39503F000
400~410nm	30°	3939A40503F000
	60°	3939C40503F000
	Flat	3939F40503F000
410~420nm	30°	3939A41503F000
	60°	3939C41503F000
	Flat	3939F41503F000

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■ Peak-wavelength binning

Peak Wavelength			unit: nm@1000mA
Bin Code	Min	Max	
R1	365.0	370.0	
S1	380.0	385.0	
S2	385.0	390.0	
T1	390.0	395.0	
T2	395.0	400.0	
U1	400.0	405.0	
U2	405.0	410.0	
VA	410.0	415.0	
VB	415.0	420.0	

◇ Notes:

1. Binning current is 1000mA
2. Wavelength tolerance $\pm 2.5\text{nm}$

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■ Voltage binning

Voltage			
Peak Wavelength	Bin Code	Min	Max
365nm	V3	3.6	3.8
	V4	3.8	4.0
	V5	4.0	4.2
	V6	4.2	4.4
385nm	V1	3.2	3.4
	V2	3.4	3.6
	V3	3.6	3.8
	V4	3.8	4.0
395nm	V1	3.2	3.4
	V2	3.4	3.6
	V3	3.6	3.8
	V4	3.8	4.0
405nm	V1	3.2	3.4
	V2	3.4	3.6
	V3	3.6	3.8
	V4	3.8	4.0
415nm	V1	3.2	3.4
	V2	3.4	3.6
	V3	3.6	3.8
	V4	3.8	4.0

◇ Notes:

1. Binning current is 1000mA
2. Voltage tolerance $\pm 0.12V$

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■ Radiant flux (Power) Binning

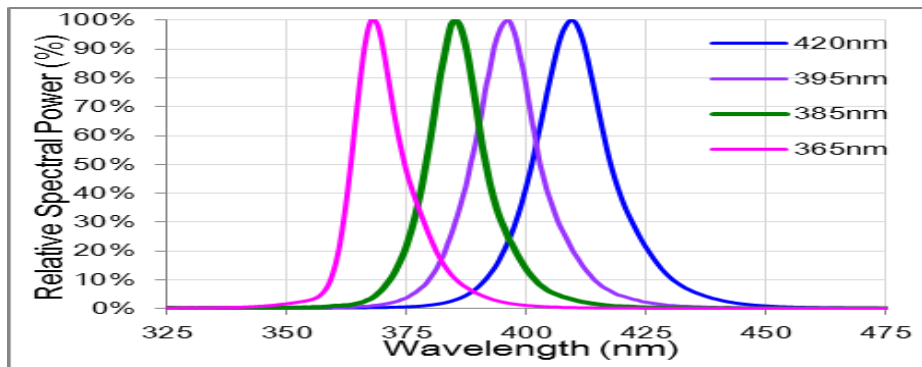
Radiant flux (Power)			
			unit: mw@1000mA
Peak Wavelength	Bin Code	Min	Max
365nm	C2	1100	1200
	C3	1200	1300
	C4	1300	1400
	C5	1400	1500
385nm	C7	1600	1700
	C8	1700	1800
	C9	1800	1900
	C10	1900	2000
395nm	C7	1600	1700
	C8	1700	1800
	C9	1800	1900
	C10	1900	2000
405nm	C7	1600	1700
	C8	1700	1800
	C9	1800	1900
	C10	1900	2000
415nm	C7	1600	1700
	C8	1700	1800
	C9	1800	1900
	C10	1900	2000

◇ Notes:

1. Binning current is 1000mA
2. Power tolerance $\pm 10\%$

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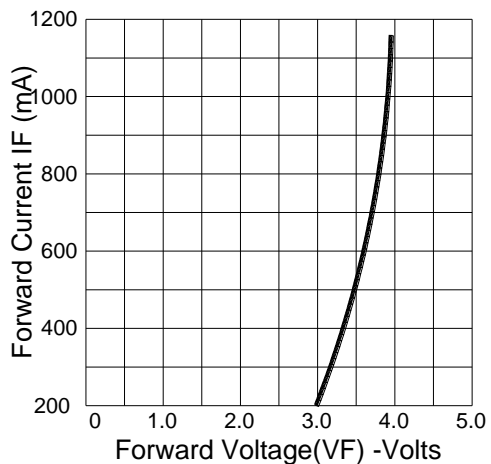
■ Relative spectral power distribution



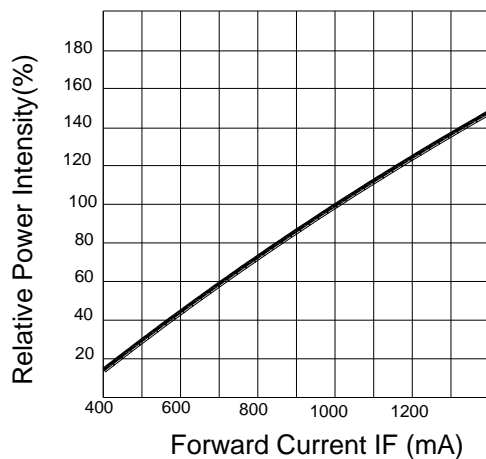
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■ Characteristics

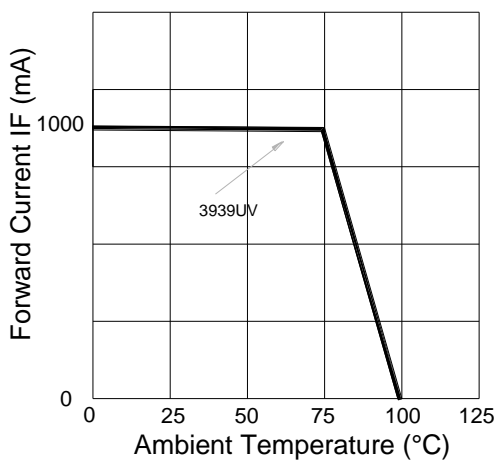
Forward Current VS. Forward Voltage



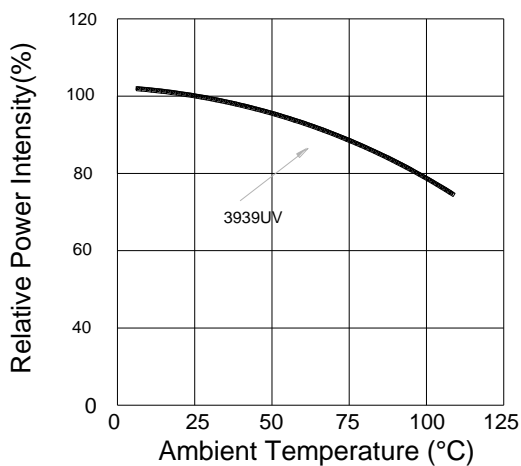
Luminous Intensity VS. Forward Current



Forward Current VS. Ambient Temperature

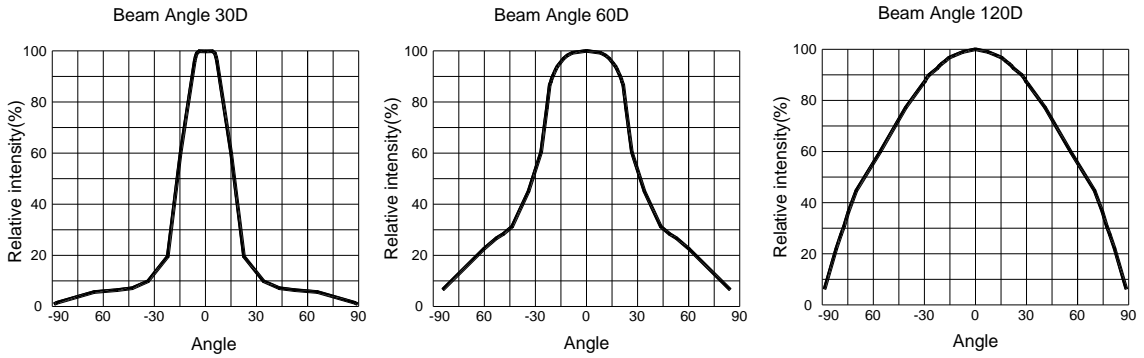


Radiant Power VS. Ambient Temperature



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■ Typical spatial distribution ($2\theta_{1/2}$)

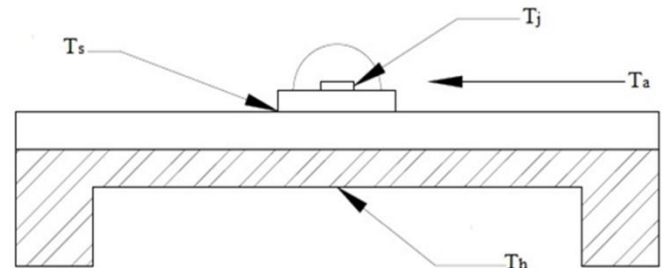
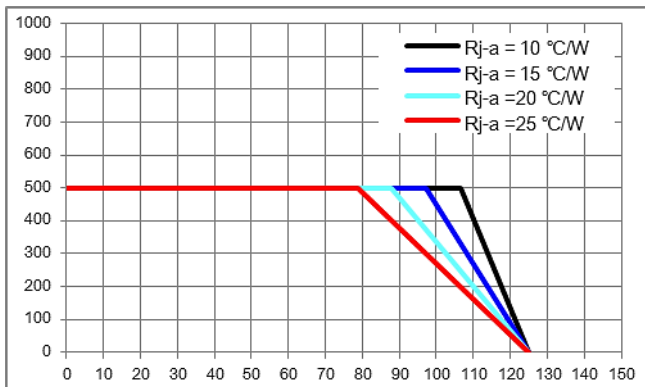


◇ Notes:

Viewing angle($2\theta_{1/2}$) $\pm 10^\circ$

■ Thermal design for de-rating

The maximum forward current is determined by the thermal resistance between the LED junction and solder point. It is crucial for the end product to be designed in a manner that minimizes the thermal resistance from the junction to the solder point order to optimize LED life and optical characteristics.

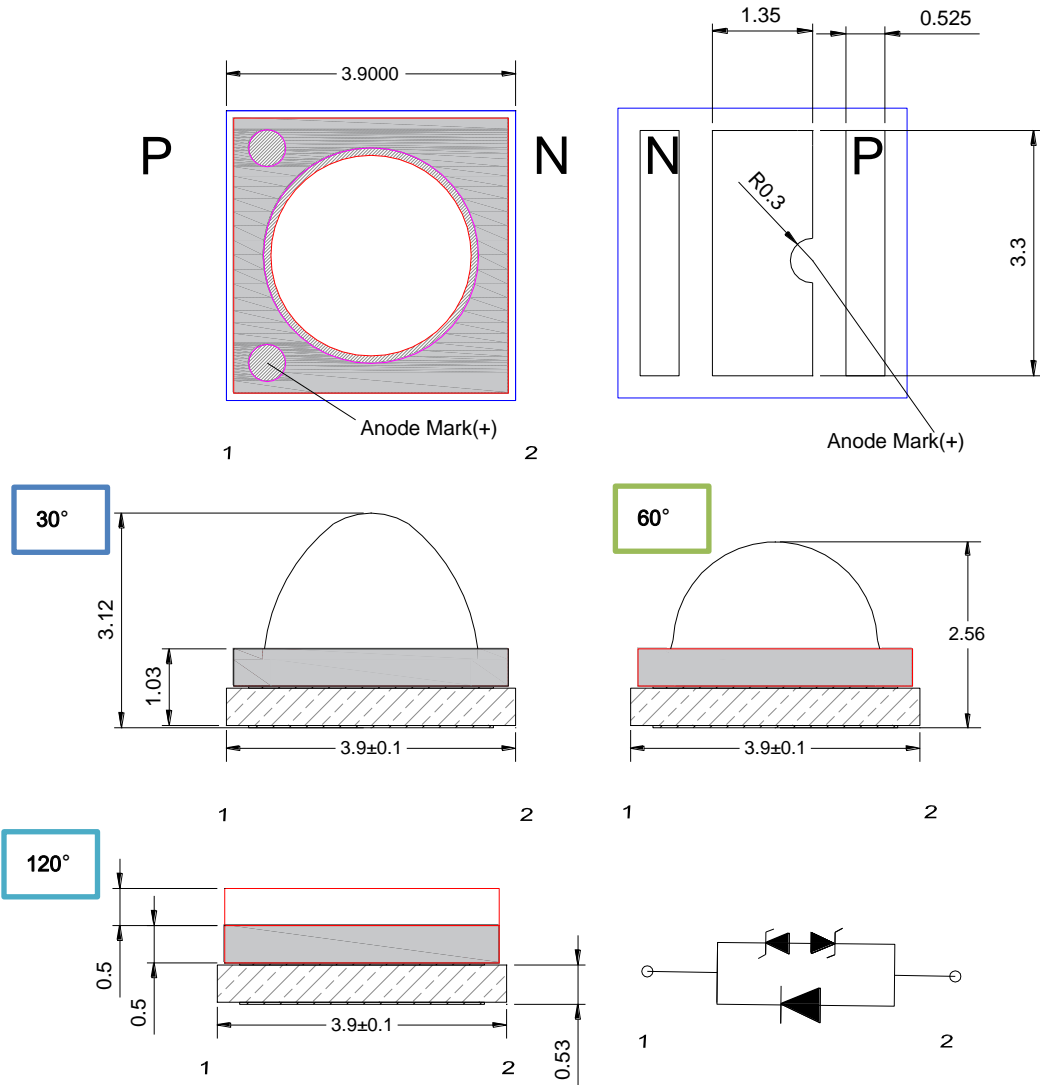


T_s : Solder Point Temp.
 T_h : Heat Sink Temp.
 T_a : Ambient Temp.
 R_{th(j-a)} : Thermal Resistance from Point "T_j" to Point "T_a"

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■ Dimensions



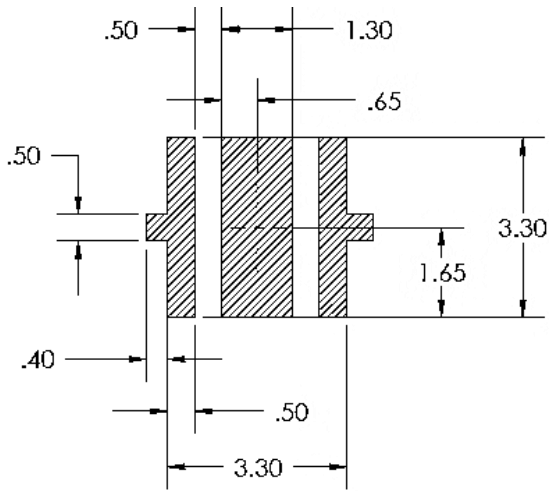
◇ Notes:

- § All dimensions are in millimeters.
- § Tolerance is $\pm 0.13\text{mm}$ unless other specified.

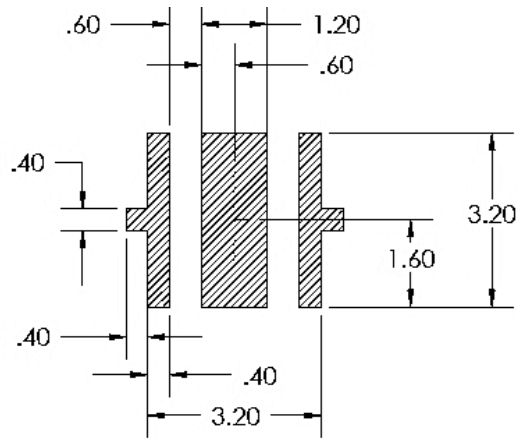
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■ Suggest stencil pattern (Recommendations for reference)



RECOMMENDED PCB SOLDER PAD



RECOMMENDED STENCIL PATTERN
(HATCHED AREA IS OPENING)

§ Suggest stencil $t = 0.12$ mm

◇ Note:

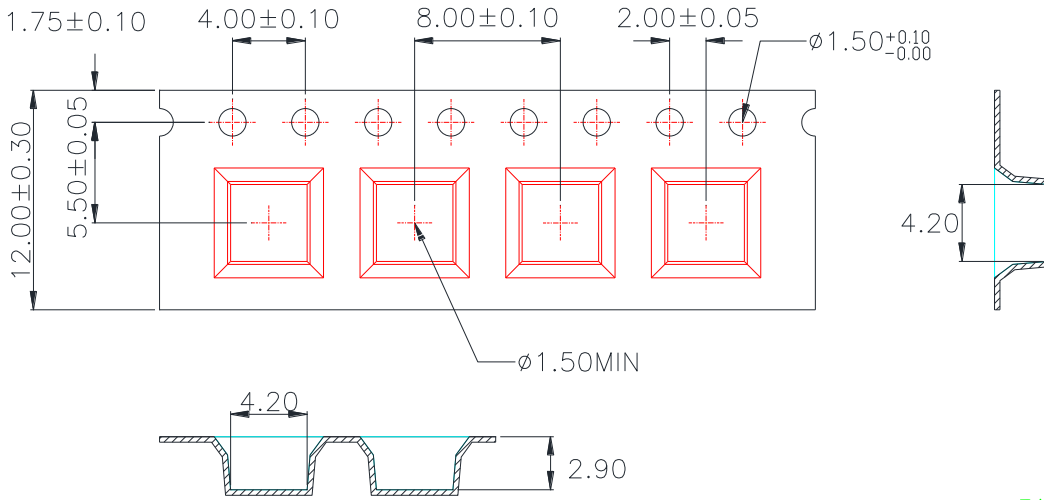
§ All dimensions are in millimeters.

§ Tolerance is ± 0.13 mm unless other specified.

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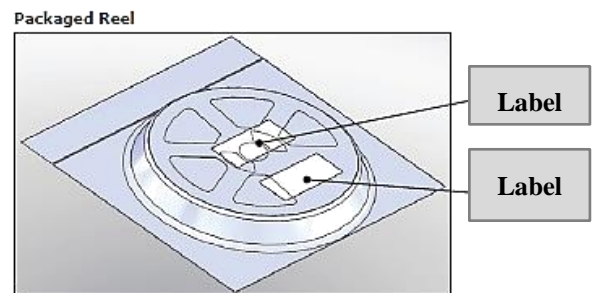
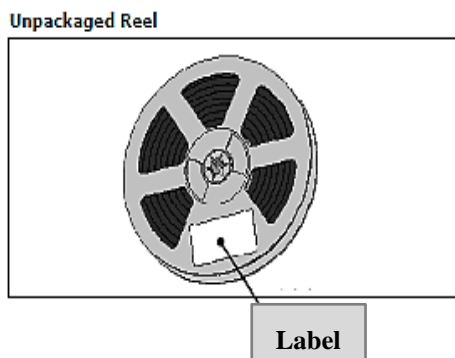
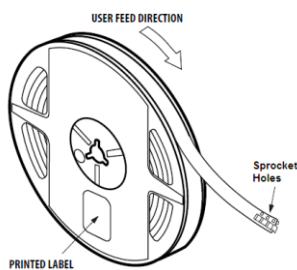
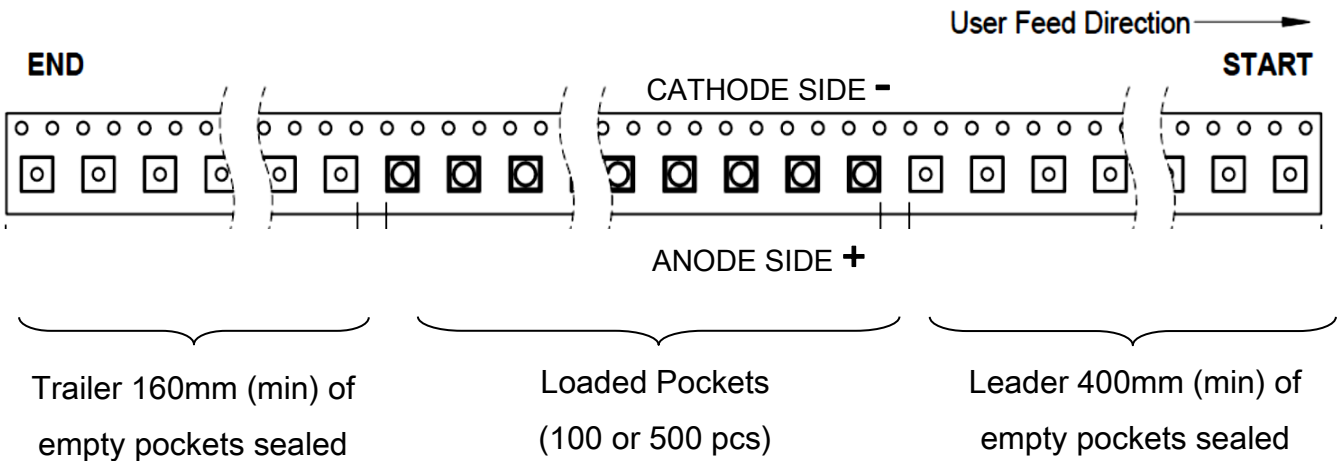
■ Packing



Taiwan Patent No : 157713
China Patent No : 01224591.7

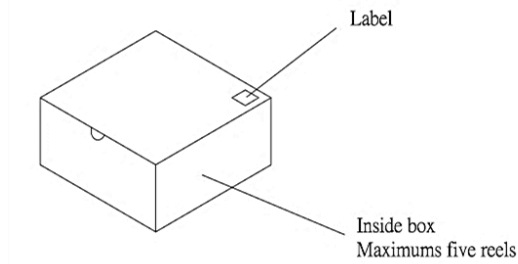
1. 10 sprocket hole pitch cumulative tolerance ± 0.20 .
2. Carrier camber is within 1 mm in 250 mm.
3. Material : Black Conductive Polystyrene Alloy.
4. All dimensions meet EIA-481-D requirements.
5. Thickness : 0.30 ± 0.05 mm.
6. Packing length per 22" reel : 62.5 Meters(1:3).
7. Component load per 13" reel : 2500 pcs.

W	12.00±0.30
A0	4.20±0.10
B0	4.20±0.10
K0	2.90±0.10



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Notes:

1. Each Reel (minimum number of pieces is 100 and maximum is 500(30D)/ 500 (60D)/500 (120D) is packed in a moisture-proof bag along with 2 packs of desiccant and a humidity indicator card;
2. A maximum of 5 moisture-proof bags are packed in an inner box (size: 240mm x 200mm x 105mm \pm 5mm)
3. A maximum of 4 inner boxes are put in an outer box (size: 410mm x 255mm x 230mm \pm 5mm)
4. Part No., Lot No., quantity should be indicated on the label of the moisture-proof bag and the cardboard box.

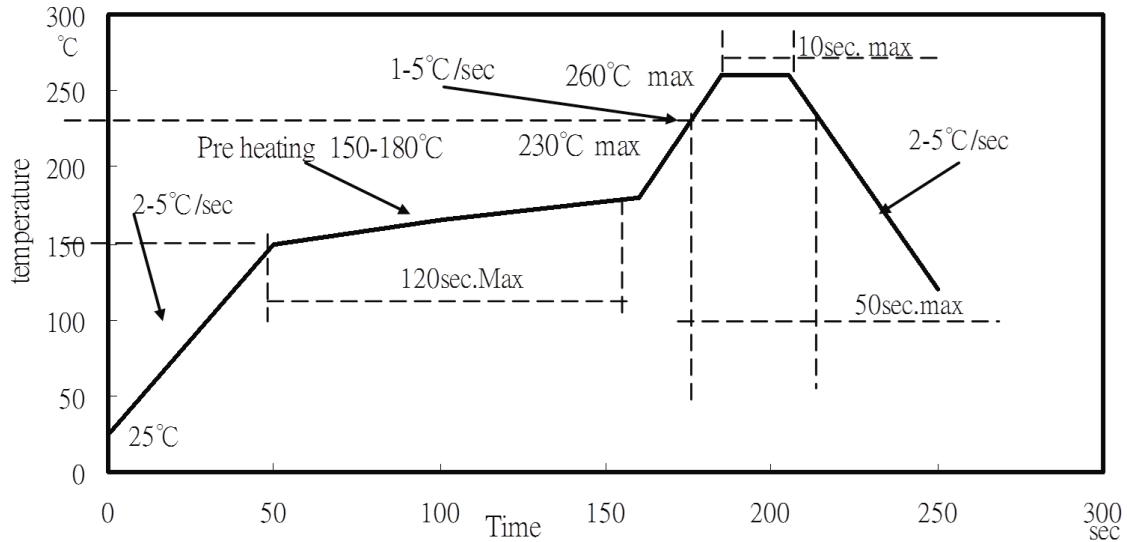
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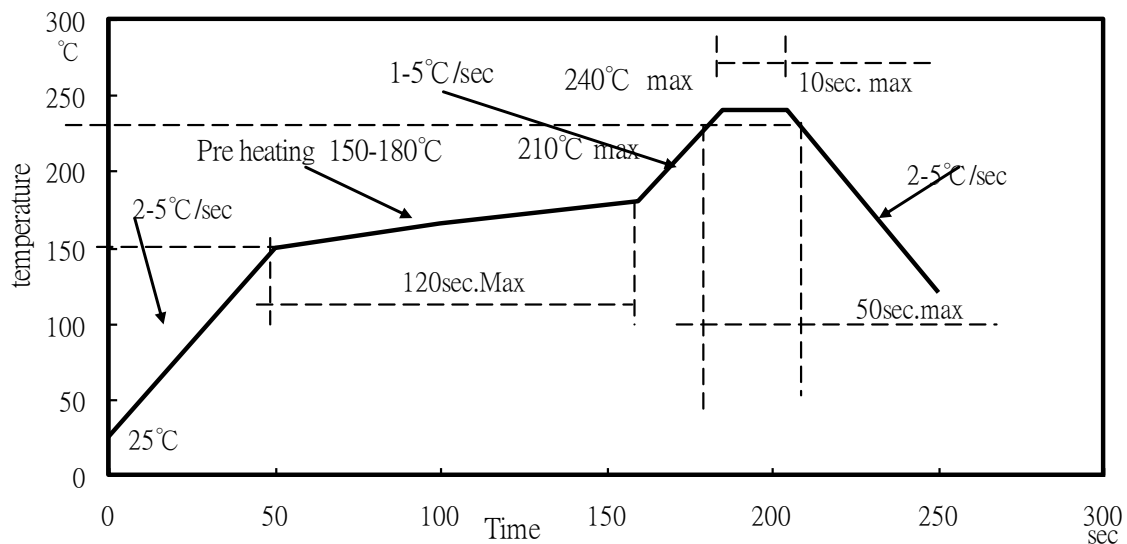
■ Reflow Profile

IR reflow soldering Profile

Lead Free solder



Lead solder



Notes:

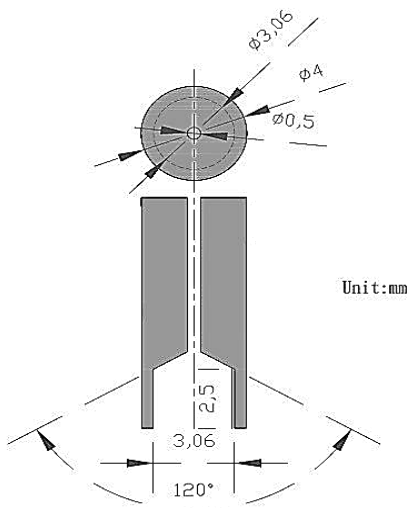
1. The recommended reflow temperature is 240°C(±5°C). The maximum soldering temperature should be limited to 260°C.
2. Do not stress the silicone resin while it is exposed to high temperature.
3. The number of reflow process should not exceed 3 times.

3939 UVA LED**■ Precautions****1. Recommendation for using LEDs**

- 1.1 The lens of LEDs should not be exposed to dust or debris. Excessive dust and debris may cause a drastic decrease in the luminosity.
- 1.2 Avoid mechanical stress on LED lens.
- 1.3 Do not touch the LED lens surface. It would affect the optical performance of the LED due to the LED lens' damage.
- 1.4 Pick & place tools are recommended for the remove of LEDs from the factory tape & reel packaging

2. Pick & place nozzle

The pickup tool was recommended and shown as below

**3. Lens handling**

Please follow the guideline to pick LEDs

- 3.1 Use tweezers to pick LEDs
- 3.2 Do not touch the lens by using tweezers
- 3.3 Do not touch lens with fingers
- 3.4 Do not apply more than 4N of lens (400g) directly onto the lens

4. Lens cleaning

In the case which a small amount of dirt and dust particles remain on the lens surface, a suitable cleaning solution can be applied.

- 4.1 Try a gentle wiping with dust-free cloth
- 4.2 If needed, use dust-free cloth and isopropyl alcohol to gently clean the dirt from the lens surface.
- 4.3 Do not use other solvents as they may directly react with the LED assembly
- 4.4 Do not use ultrasonic cleaning which will damage the LEDs