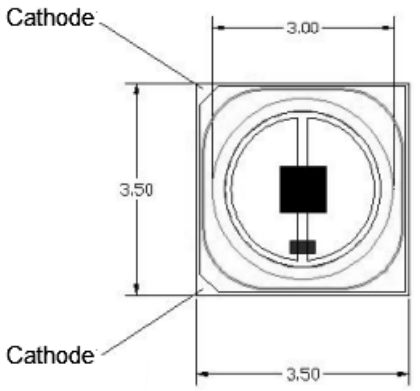
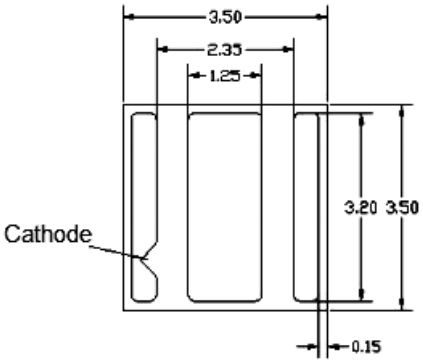
American Opto Plus LED Corp.
L933SP-NUV275-5
3.5 x 3.5 x 3.05mm Dome Lens Power UVC SMD LED

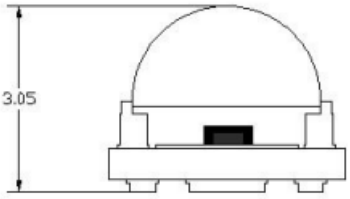
PACKAGE OUTLINES



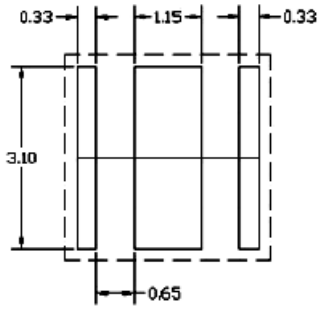
Top View



Soldering Pad



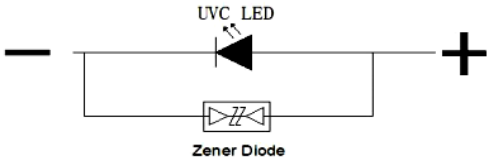
Side View



Recommended Pad Layout

WARNING:

- UV LEDs emit light in the ultraviolet region (UV light).
- UV light is invisible and may be harmful to the human eye.
- Do not expose the eyes directly to the UV light. Wearing appropriate protective gear when handling.
- Use appropriate warning signs/ labels on the devices equipped with UV LEDs.



Item	Materials
Viewing Angle	45 Degree
Lens Color	Water Clear
Emitted Color	Ultra Violet

Notes:
1. All dimensions are in millimeters.
2. Tolerances are ±0.1mm unless otherwise noted.

ABSOLUTE MAXIMUM RATINGS **(Ta=25°C)**

Parameter	Symbol	Value	Unit
Forward Current	If	300	mA
LED Junction Temperature	Tj	90	°C
Thermal resistance	Rth	11	°C/W
Operating Temperature Range	Top	-30 ~ +60	°C
Soldering Temperature	Tp	260°C for 5sec Max	

ELECTRO-OPTICAL CHARACTERISTICS **(Ta=25°C)**

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Peak Wavelength	If=150mA	λP	270	275	280	nm
Forward Voltage		Vf	5	--	7.5	V
Radiant Output		Popt	12	15	--	mW
Spectral Half bandwidth		△λ	--	9	--	nm
Viewing Angle at 50% Iv		2θ1/2	--	45	--	Deg

Note:
1. The tolerance of forward voltage is ±0.1V.
2. The tolerance of radiant output is ±8%.
3. The tolerance of peak wavelength is ±3nm.

OPTICAL CHARACTERISTIC CURVES

Fig.1 Relative Radiant Power VS Forward Current

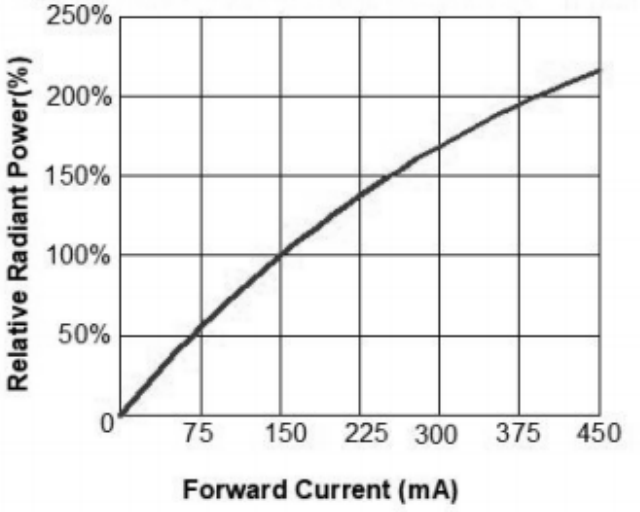


Fig.2 Forward Current VS Forward Voltage (Ta=25℃)

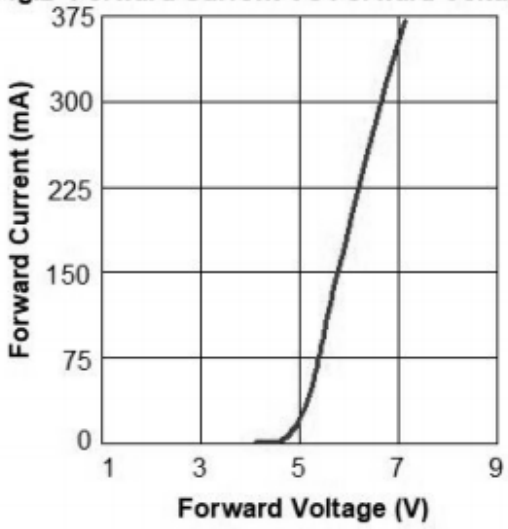


Fig.3 Forward Voltage VS Ambient Temperature

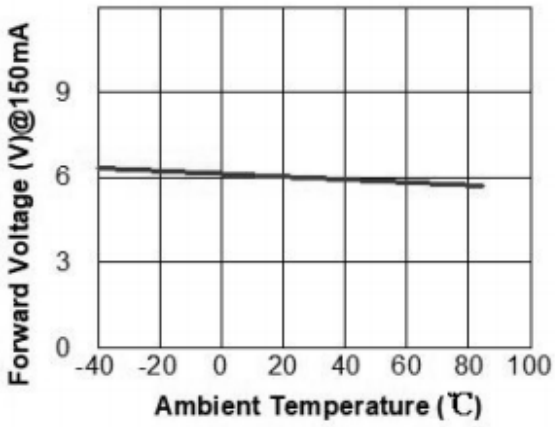


Fig.4 Relative Radiant Power VS Ambient Temperature

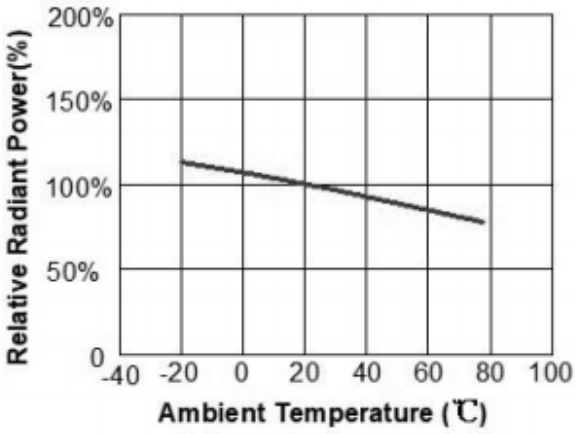


Fig.5 Peak Wavelength VS Forward Current

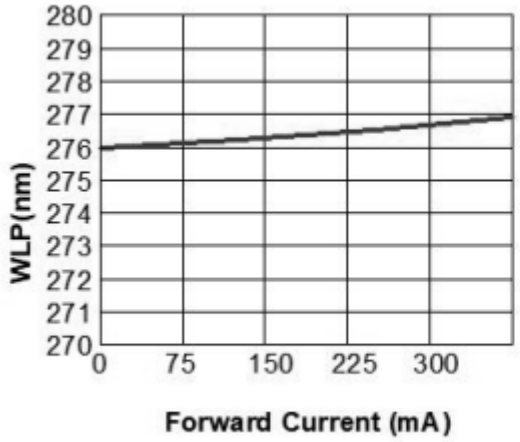


Fig.6 Forward Current VS Ambient Temperature

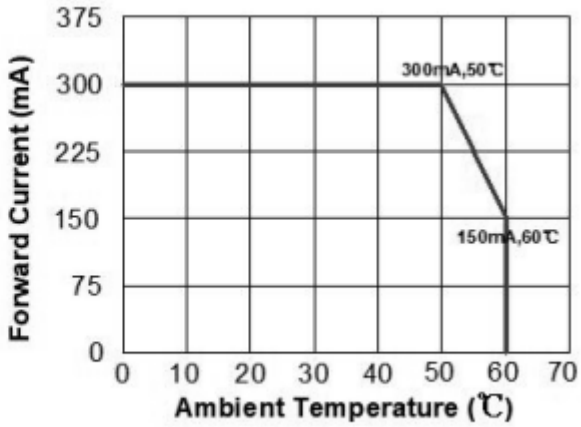


Fig.7 Relative Intensity VS WLP

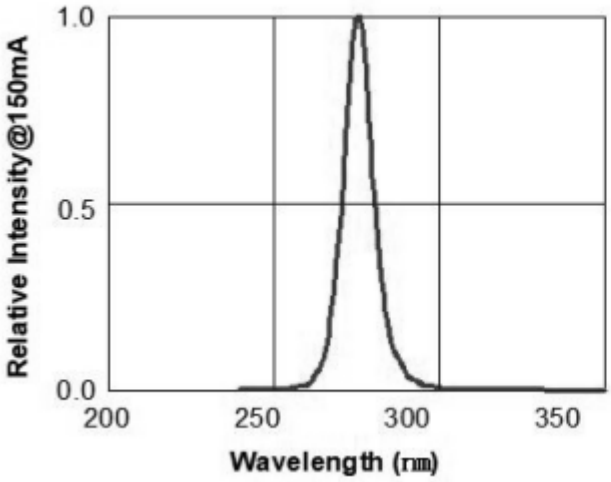
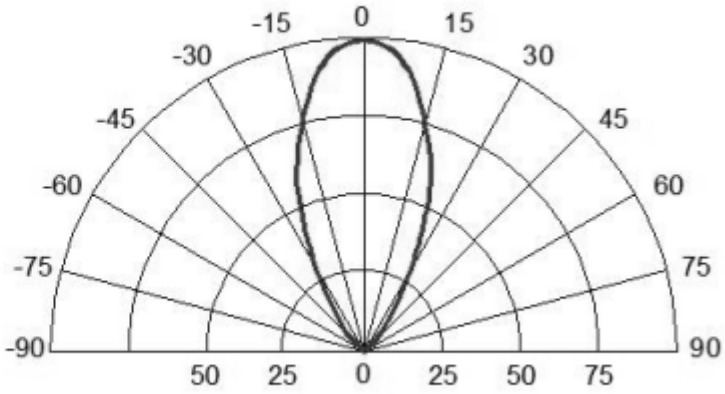


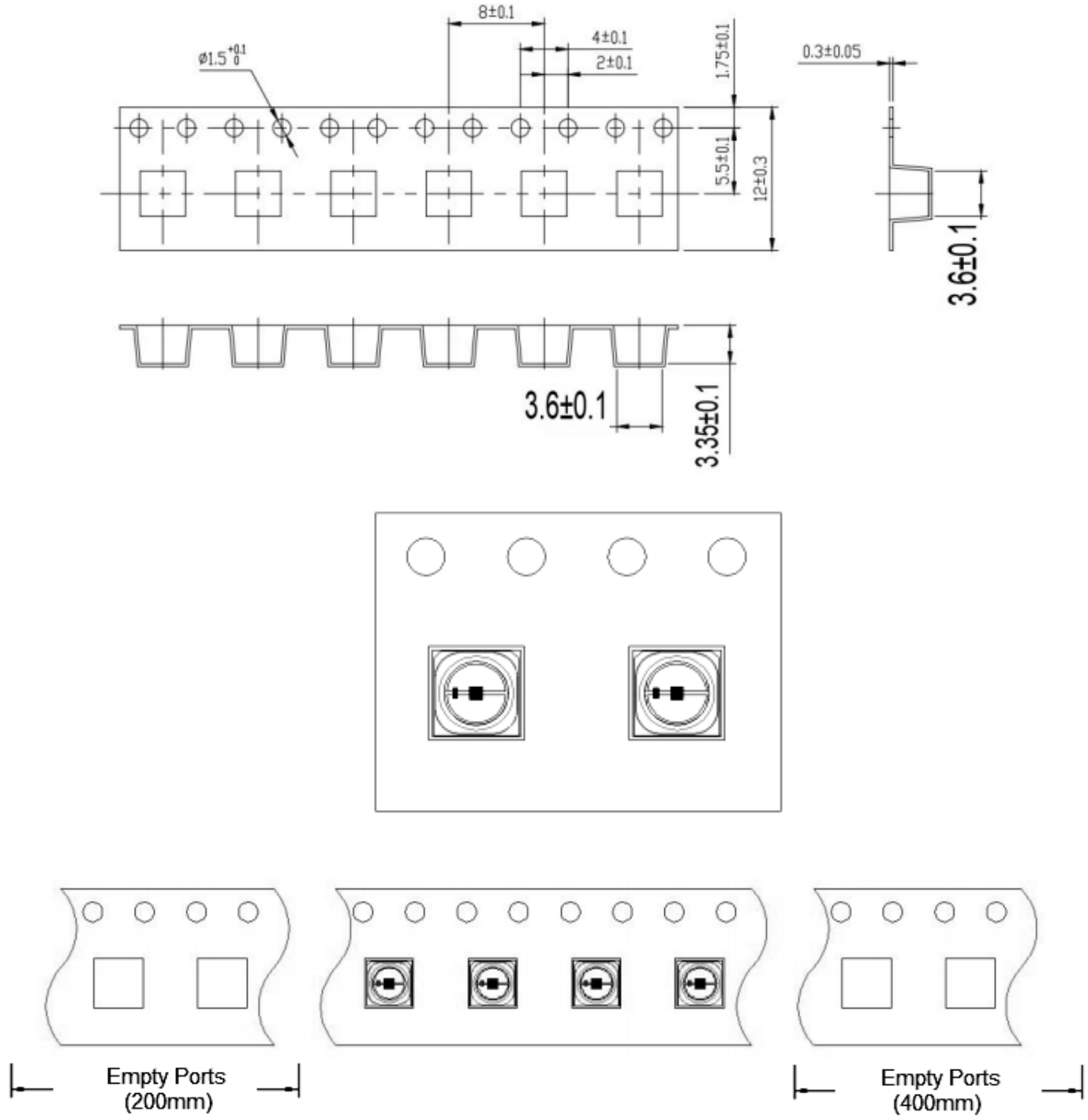
Fig.8 Radiation pattern@150mA



RELIABILITY TEST

Test Item	Test Conditions	Note	Failure Criteria
Life Test	T_a=25℃ I_F=150mA	1000 hrs	Forward Voltage VF>120% Radiant Output Popt<70%
High Temperature Storage	T_a=100℃	1000 hrs	
Low Temperature Storage	T_a=-40℃	1000 hrs	
Temperature Cycle	-40℃ 30min ↑↓ 25℃ 5min ↑↓ 100℃ 30min	100 cycle	

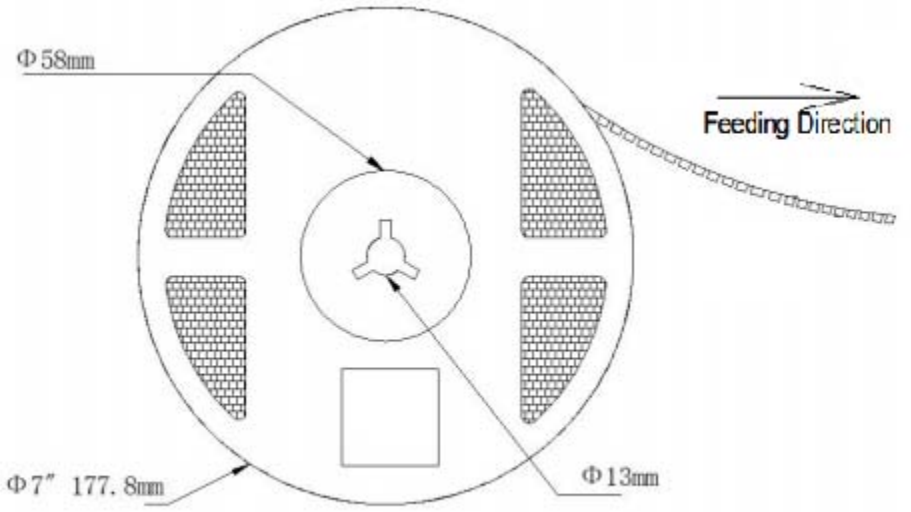
TAPE DEMINSION

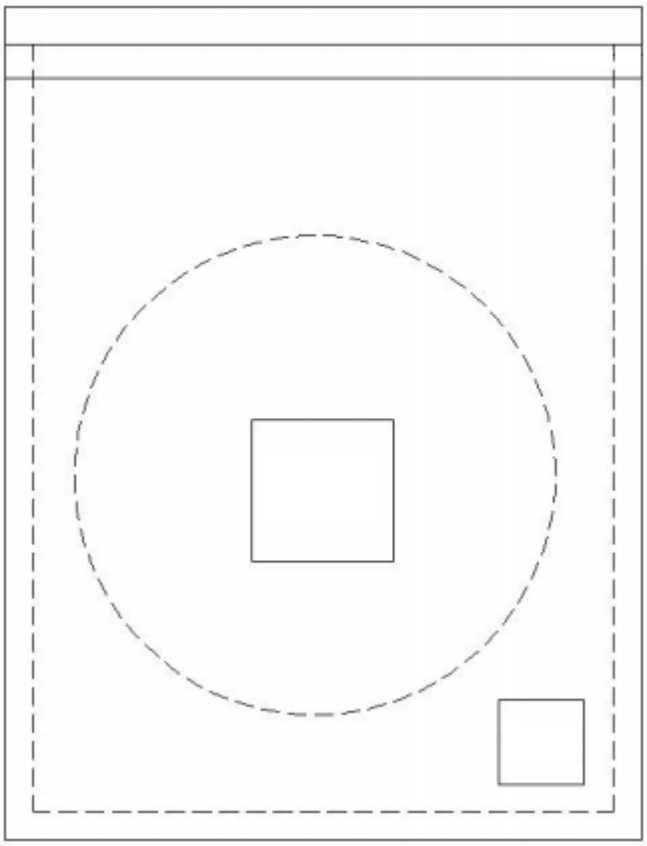


Note:

QTY/Reel: 1000 pcs Max.

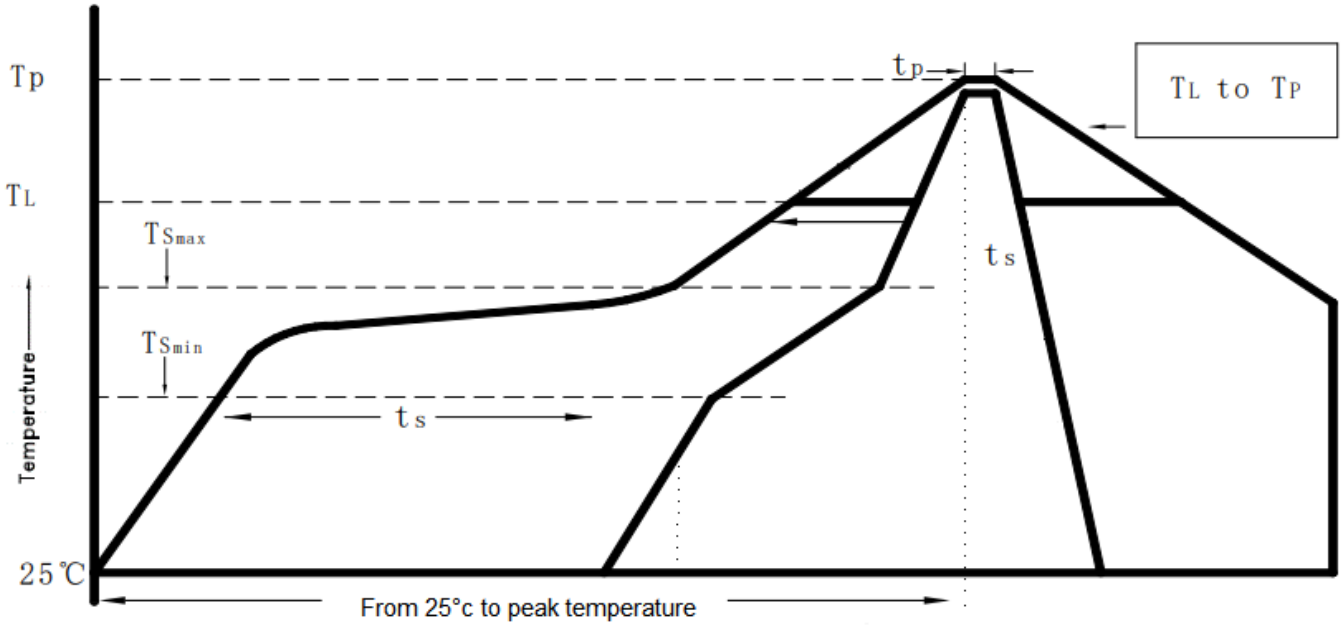
REEL DEMINSION





REFLOW SOLIDERING PROFILE

Reflow Temp/time



Stage	Parameter	Symbol	Value	Unit
Preheat	Ramp-up Rate	TSmax to Tp	1	°C/sec
	Min. Temperature	TSmin	100-150	°C
	Max. Temperature	TSmax	180-200	°C
	Time	TSmin to TSmax	60-120	Sec
Equilibrium	Temperature	TL	217	°C
	Temperature Time	tL	50-80	Sec
Reflow	Peak Temperature	Tp	260	°C
	Time	tr	20-40	Sec
Cooling	Ramp-down Rate	Vc	3	°C/sec
Preheat to Reflow	From 25°C to peak temperature	25°C to Tp	4	min

PRECAUTIONS FOR USE:

Storage time:

1. Calculated shelf life before opening is 6 months at 10-30°C and < 60% relative humidity (RH).
2. After bag is opened, devices which will be subjected to reflow soldering or other high temperature processes must be:
   a) Assembled within 24 hour, or
   b) Stored at Moisture Proof bag with desiccant.
3. Devices are required baking before assembly if:
   a) Package is opened before.
   b) 2.a) or 2.b) doesn't meet.
4. If baking is required, devices should be baked for 6 hours at 60°C.

ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling these LED. All devices, equipment and machinery must be properly grounded.

Cleaning

In case where a minimal level of dirt and dust particles cannot be guaranteed, a suitable cleaning solution can be applied to the lens surface.

- Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED.
- Try a gentle swabbing with lint-free swab.
- If need, the use of tint-free swab and isopropyl alcohol used gently removes dirt from the lens.
- Don’t use other solvents as they may directly react with the LED assembly.
- Don’t use ultrasonic cleaning that the LED will be damaged.

Over-Current-Proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).