



American Opto Plus LED Corp.

L955MEC-S

3.5 x 2.8 x 1.9mm Red PLCC-2

DATA SHEET UPDATE HISTORY:

- **VERSION 1.0 – April 6, 2011**
- **VERSION 1.5 – September 4, 2012**
- **VERSION 2.0 – March 12, 2013**
- **REVISION 1.0 – February 6, 2014** **REVISION 1.1 – April 7, 2014**
- **REVISION 1.2 – July 8, 2014**

-Absolute Max Ratings

- DC forward current adjusted to 30 mA
- Junction Solder point adjusted to 350°C/W
- Junction Ambient adjusted to 400 °C/W

-Forward Current vs. Ambient Temperature curve revised

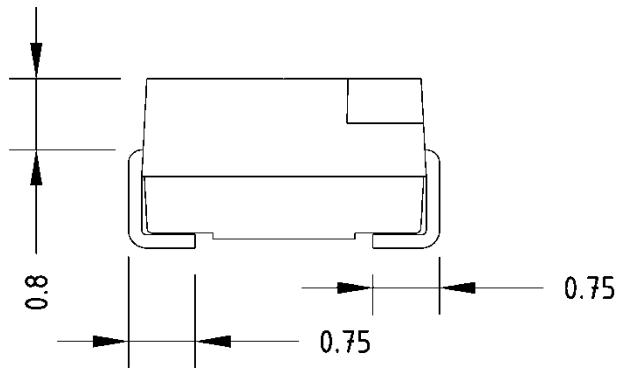
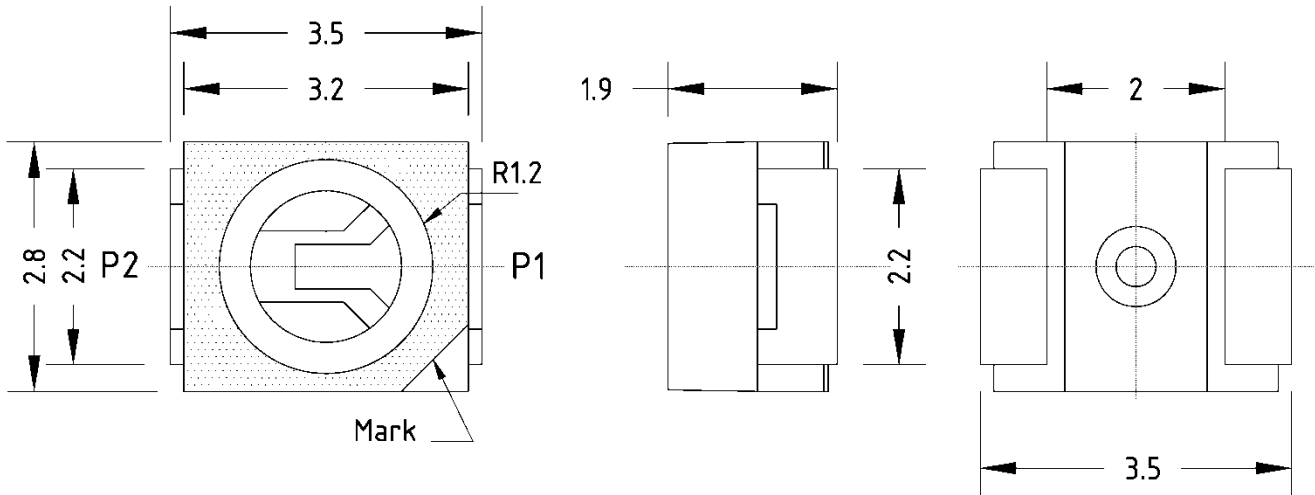


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PACKAGE OUTLINES:



Item	Materials
Package	Heat-Resistant Polymer
Encapsulating Resin	Silicone
Electrodes	Ag Plating Copper Alloy

Chip Material	Chip Emitted	Lens Color	Viewing Angle
AllnGaP/Sapphire	Red	Clear	120

Notes:

- Note: All dimensions are in millimeters; tolerance is $\pm 0.2\text{mm}$ unless otherwise noted.
- Electrical Connection between all Cathodes is Recommended



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ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Value	Unit
DC Forward Current	I _F	30	mA
Peak Pulsed Forward Current	I _{FP}	100	mA
Reverse Voltage	V _R	5	V
Power Dissipation	P _D	125	mW
Junction Temperature	T _J	115	°C
Junction / Solder Point	R _{TH JS}	600	°C/W
Junction / Ambient	R _{TH JA}	735	°C/W
Operating Temperature	T _{OPR}	-30~+100	°C
Storage Temperature	T _{STG}	-40~+100	°C
Solder Temperature	T _{SOL}	260 °C for 10 sec	

OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Forward Voltage	V _F	I _F = 20mA	--	2.1	2.5	V
Luminous Flux	Φ _V		--	2300	--	mlm
Luminous Intensity	I _V		520	700	1150	mcd
Dominant Wavelength	λ _D		615	625	635	nm
Peak Wavelength	λ _P		--	635	--	nm
Spectral Half Width	Δλ _{1/2}		--	17	--	nm
Reverse Current	I _R	V _R =5V	--	--	10	μA

Measurement Uncertainty of Luminous Intensity: ±10%



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LUMINOUS INTENSITY BIN TABLE

IF=20mA

Rank name	Min (mcd)	Max (mcd)
M	520	680
N	680	880
P	880	1150

Tolerance for each bin limit is $\pm 15\%$

COLOR BIN TABLE

IF=20mA

Rank name	Min (nm)	Max (nm)
1	615	620
2	620	625
3	625	630
4	630	635

Tolerance for each bin limit is $\pm 1\text{nm}$

Notes:

1. One delivery will include several color ranks and Iv ranks of products. The quantity-ratio of the different rank is decided by AOP
2. Bin name typed on the label: IV RANK + COLOR RANK. For example, **BIN N2** means **IV: 680~880mcd and COLOR: 620nm~625nm**



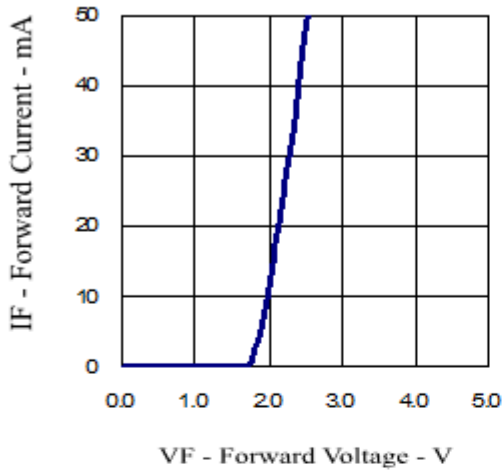
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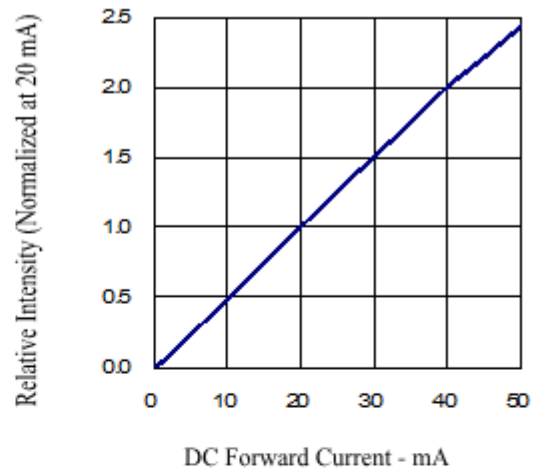
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OPTICAL CHARACTERISTIC CURVES:

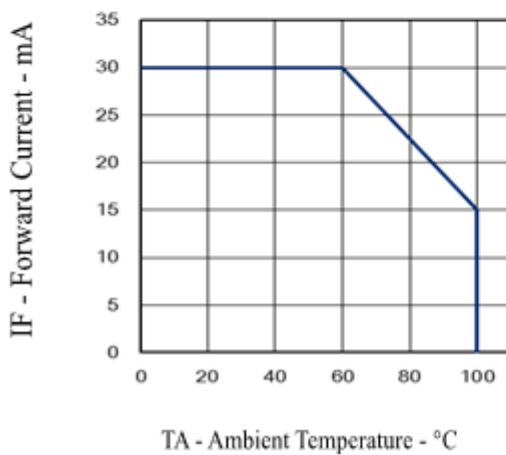
Forward Current vs. Forward Voltage



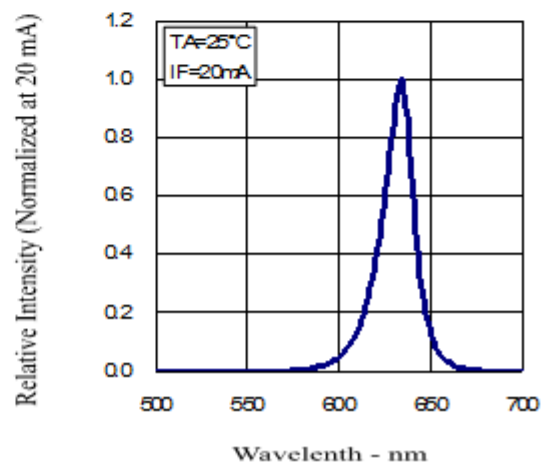
Relative Intensity vs. Forward Current



Forward Current vs. Ambient Temperature



Relative Intensity vs. Wavelength



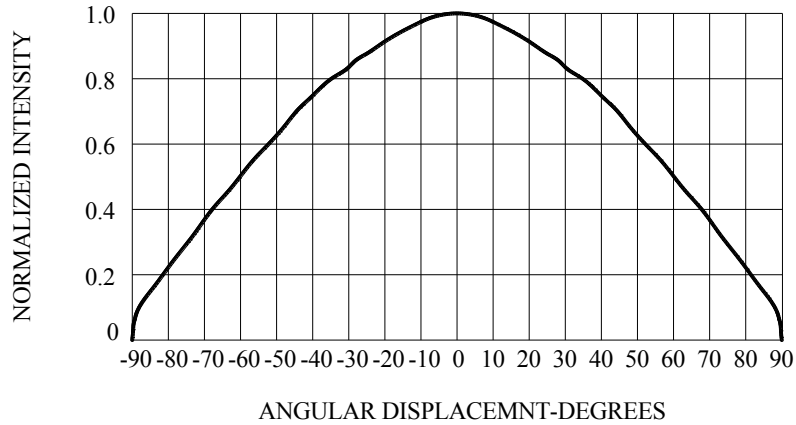


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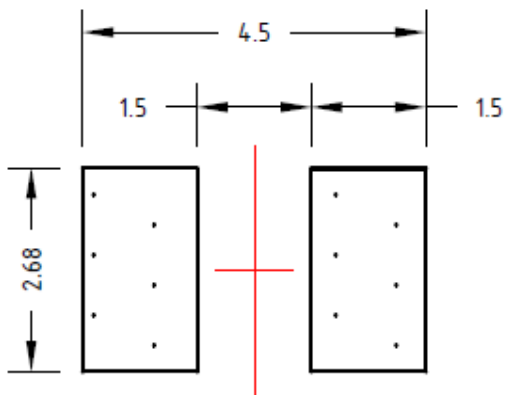
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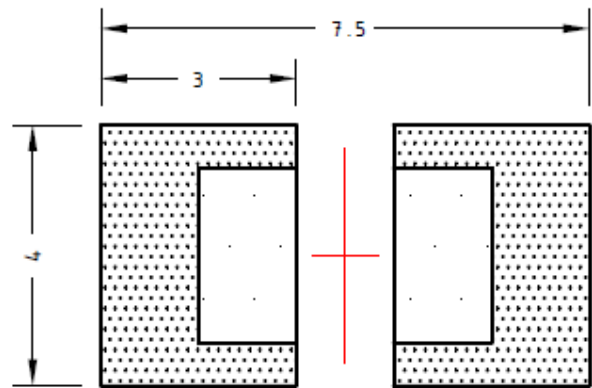
RADIATION PATTERN




RECOMMENDED SOLDERING PATTERN



(Unit:mm)



 Solder resist(Unit:mm)

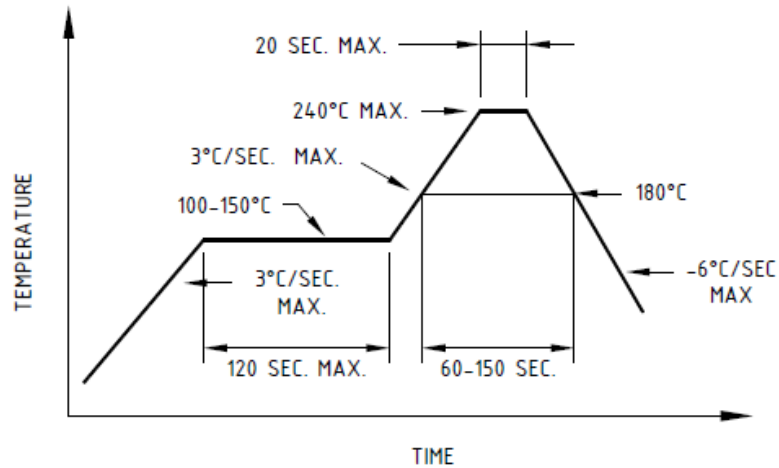


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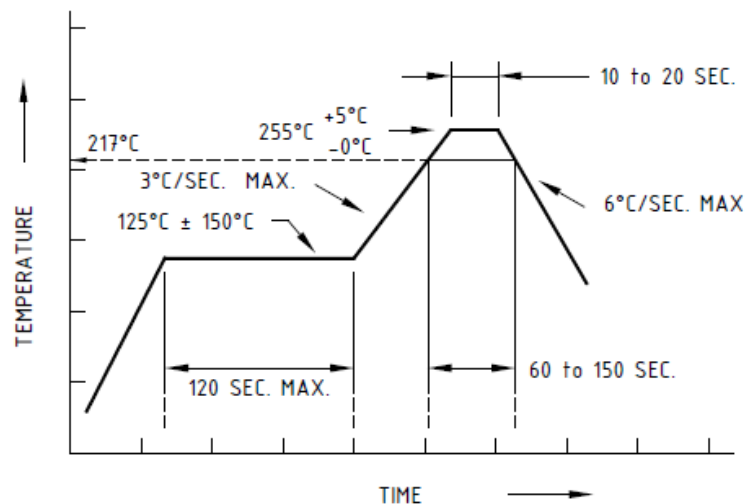
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SOLDERING CONDITIONS



Recommended reflow soldering profile



Recommended Pb-free reflow soldering profile

- Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.
- Reflow soldering should not be done more than two times.
- When soldering, do not put stress on the LEDs during heating.
- After soldering, do not warp the circuit board.

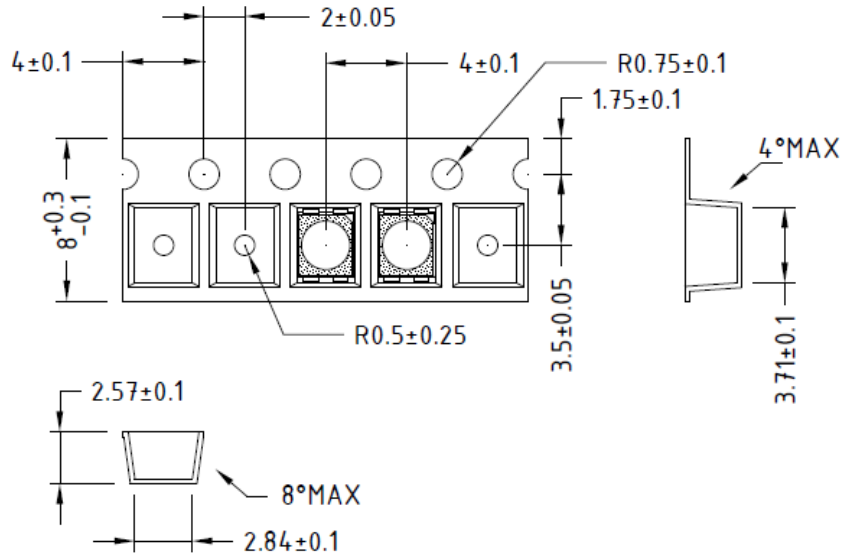


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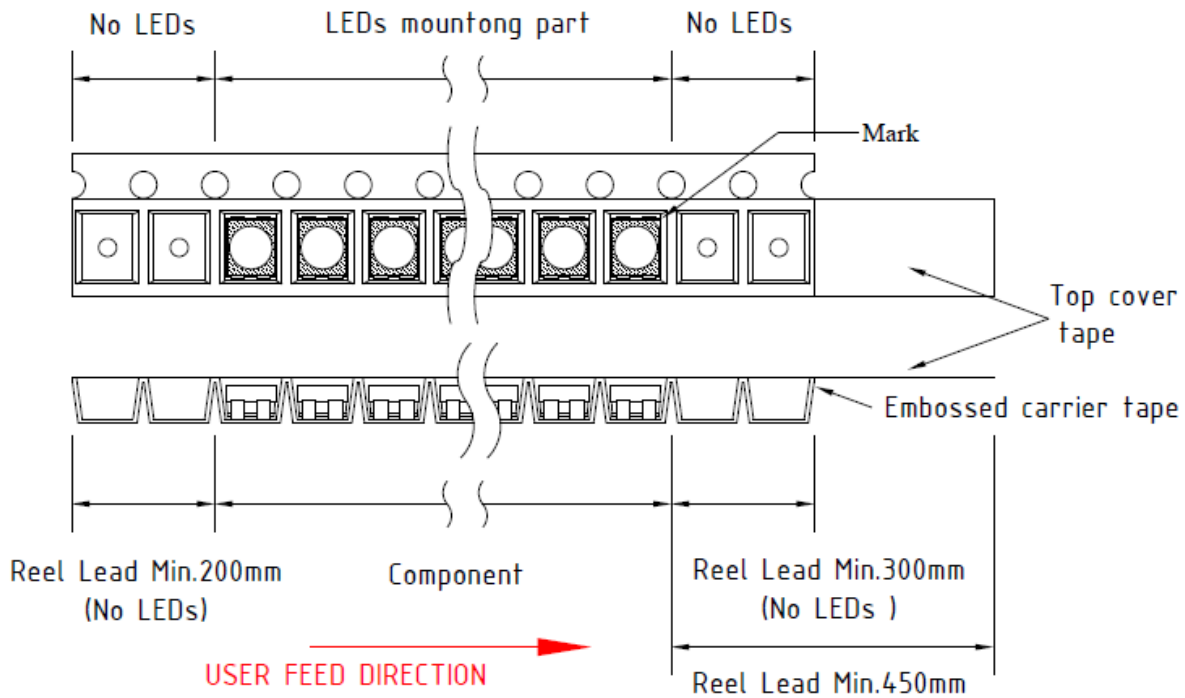
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TAPE DIMENSION



TAPE LEADER AND TRAILER DIMENSION



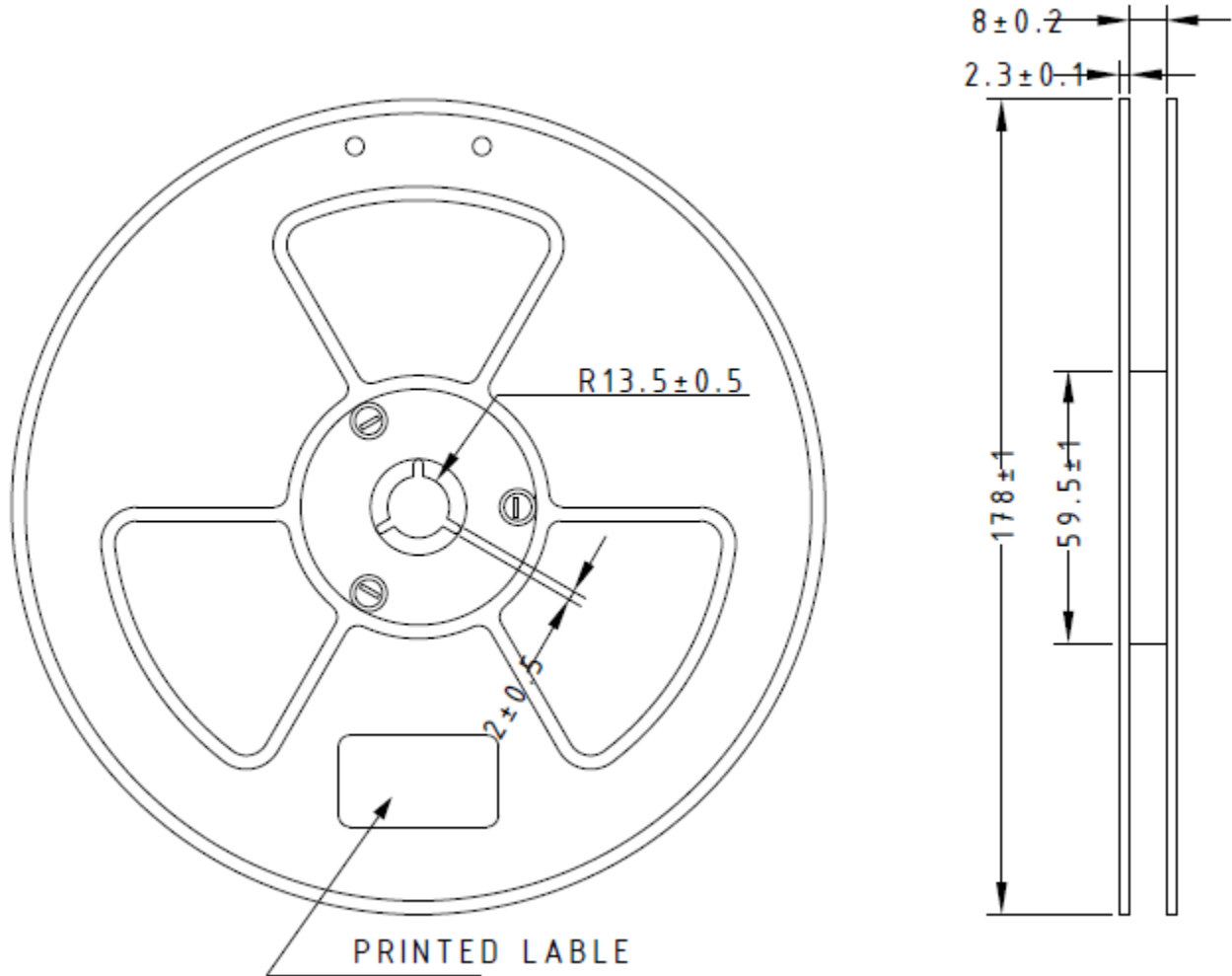


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REEL DIMENSION



Notes:

1. Baking is required when the pack has been opened for more than four weeks. Baking recommended conditions: 60 ± 5 °C for 20 hours.
2. Available in 8mm carrier tape on 7 inch reel (2000 pieces).



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MOISTURE SENSITIVITY

AOP's SMD LED are shipped in sealed, moisture-barrier bags(MBB) designed for long shelf life.

If SMD LED is exposed with moist environments before soldering, this may cause damage to SMD LED during soldering (reflow) operation.

Storage / Floor Time

Condition	Temperature(C)	Humidity(RH)	Period of Time
Before Open	30	60	6 month from shipping date
After Open	30	60	Within 48 hours

- ※ MSL of this product are MSL4, please see IPC/JEDEC STD020D for more details.
- ※ LEDs reach floor time may be damaged while soldering/reflow processing, please discard the LED.
- ※ If RH indicator card show 60%RH when unseal the package, please bake/discard the LED.

Reseal

- ※ AOP's aluminum MBB may reuse as to reseal the unused LED if MBB has not damaged or had any holes on it.
- ※ Moisture absorbent material (Silica gel) may be reuse if it does not become pink.
- ※ Proper resealed LED's Floor time will NOT RESET, only stop counting until open.
- ※ If RH indicator card show 60%RH when open the package, please bake/discard the LED.