



American Opto Plus LED Corp.

L955T-MUBC-Z

3.5 x 2.8 x 0.7mm Blue PLCC-2

MAIN FEATURES:

- Low current requirement
- Wide viewing angle
- IR Reflow Soldering
- I.C. compatible

DATA SHEET UPDATE HISTORY:

Version	Update
Version 1.0 – June 18, 2013	
Version 1.1 – October 28, 2014	<ul style="list-style-type: none">• Adjusted max color to 470nm from 480nm• Added Voltage bin table and adjusted max to 3.6V
Version 1.2 – April 21, 2015	<ul style="list-style-type: none">• Adjusted Junction / Solder Point to 80 °C/W• Adjusted Junction / Ambient to 85 °C/W• Updated Forward Current vs. Ambient Temperature Curve
Version 1.3 – May 5, 2015	<ul style="list-style-type: none">• Added pin layout
Version 1.4 – May 20, 2015	<ul style="list-style-type: none">• Added tolerance and moved schematic diagram under drawing.
Version 1.5 – May 27, 2015	<ul style="list-style-type: none">• Adjusted Junction / Solder Point to 45 °C/W• Added Moisture Sensitivity



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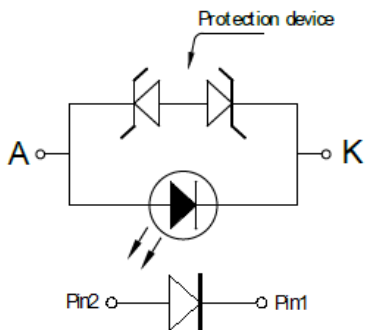
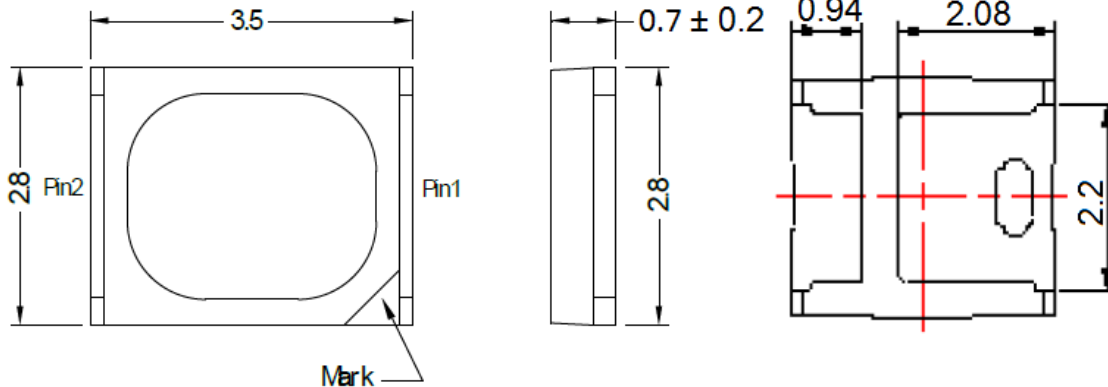
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FEATURES:

- High Luminous Output Function Blue SMD LED (InGaN)
- PLCC-2 3.5 x 2.8mm standard package with heat sink and protection device
- High reliability package
- Wide viewing angle 120 degree
- Available in 8mm carrier tape on 7 inch reel (2000 pieces)

PACKAGE OUTLINES:



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

NOTES:

1. All dimensions are in +/- 0.2 millimeters
2. Electrical Connection between all Cathodes is Recommended
3. Specification is preliminary



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ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Item	Symbol	Max Rating	Unit
DC Forward Current	I_F	250	mA
Peak Pulsed Forward Current	I_{FP}	300	mA
Reverse Voltage	V_R	--	V
Junction Temperature	T_j	125	°C
Junction/ Solder Point	$R_{th J_s}$	45	°C/W
Junction/ Ambient	$R_{th J_a}$	85	°C/W
Power Dissipation	P_d	875	mW
Operating Temperature Range	T_{OPR}	-30 ~ +100	°C
Storage Temperature	T_{STG}	-40 ~ +100	°C
Solder Temperature	T_{SOL}	265°C for 10 sec	

IFP Conditions: Pulse Width \leq 10 msec and Duty \leq 1/10

OPTICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Forward Voltage	V_F	$I_F = 150mA$	--	3.0	3.6	V
Luminous Flux	Φ_V		--	8.0	--	lm
Luminous Intensity	I_V		1900	2600	4200	mcd
Dominant Wavelength	λ_D		450	460	470	nm
Peak Wavelength	λ_P		--	465	--	nm
Spectral Half Width	$\Delta\lambda_{1/2}$		--	20	--	nm

Notes: Luminous Intensity Tolerance: $\pm 10\%$

Please refer to CIE 1931 Chromaticity Diagram



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LUMINOUS INTENSITY BIN TABLE

$I_F=150mA$

Rank Name	Min (mcd)	Max (mcd)
S	1900	2500
T	2500	3200
U	3200	4200

Tolerance for each bin is $\pm 10\%$

COLOR BIN TABLE

$I_F=150mA$

Rank Name	Min (nm)	Max (nm)
1	450	455
2	455	460
3	460	465
4	465	470

Tolerance for each bin limit is $\pm 1nm$

VOLTAGE BIN TABLE

$I_F=150mA$

Rank Name	Min (V)	Max (V)
A	2.8	3.0
B	3.0	3.2
C	3.2	3.4
D	3.4	3.6

Tolerance for each bin limit is $\pm 0.05V$

Note:

1. One delivery will include several color ranks and I_V ranks of products.
The quantity-ratio of the different rank is decided by AOP.
2. Bin Name typed on the Label: I_V Rank + Color Rank.
For example, **BinS2** means I_V : 1900~2500mcd and Color: 455~460nm and VF: 2.8~3.0V
3. AOP has the right to update the information without notice.
Please confirm the spec details before placing an order.



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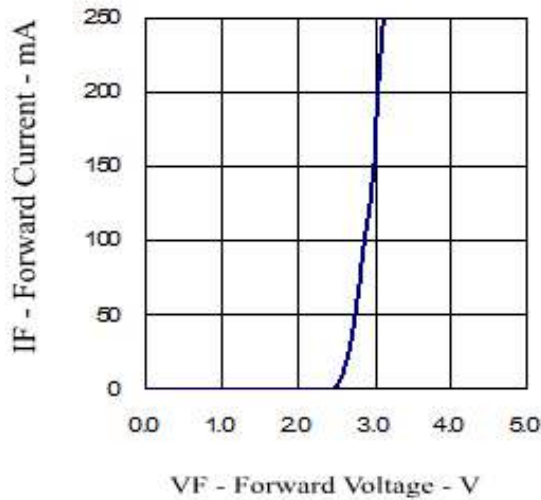
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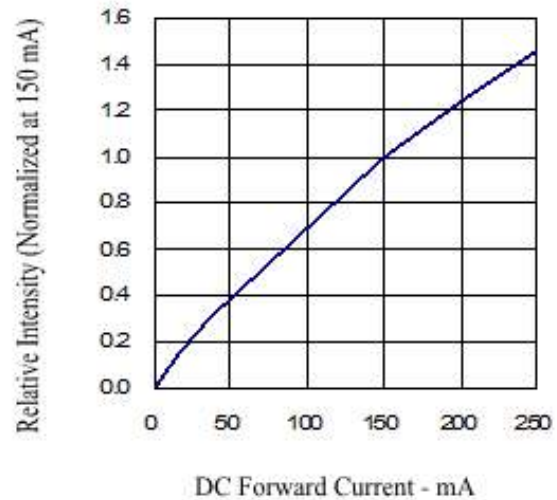
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OPTICAL CHARACTERISTIC CURVES

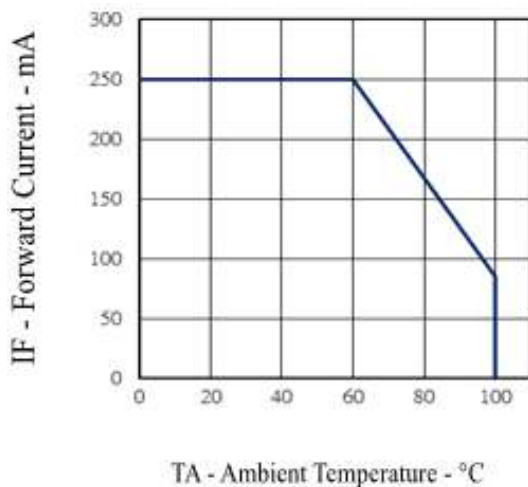
Forward Current vs. Forward Voltage



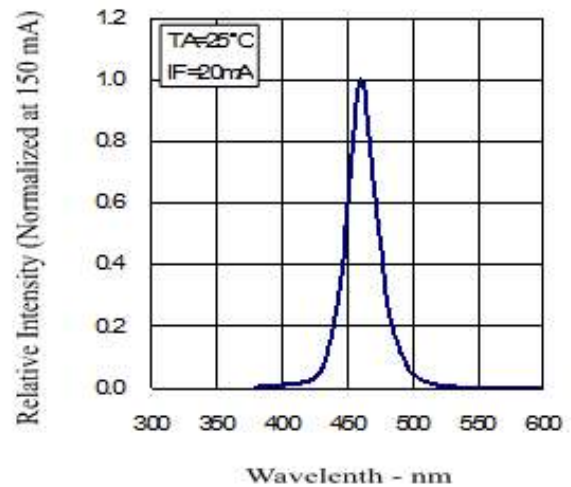
Relative Intensity vs. Forward Current



Forward Current vs. Ambient Temperature



Relative Intensity vs. Wavelength





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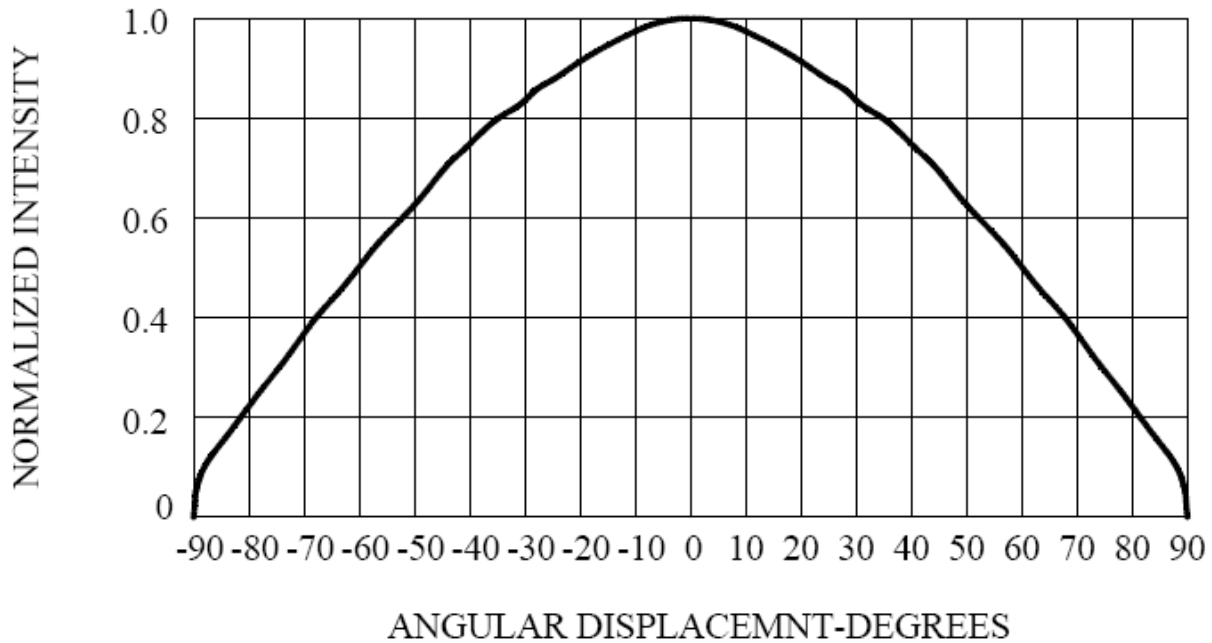
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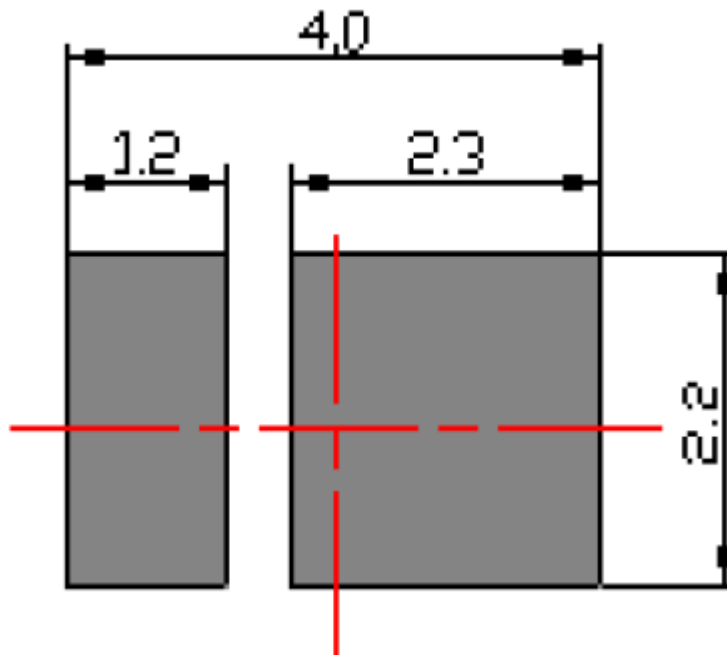
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RADIATION PATTERN



Recommended Soldering Pad Pattern





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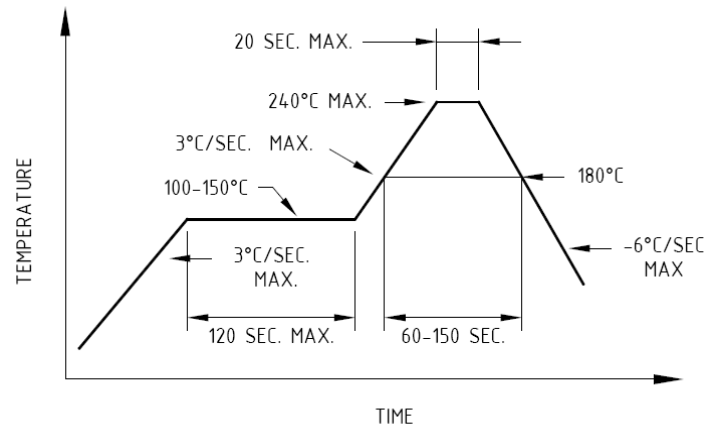
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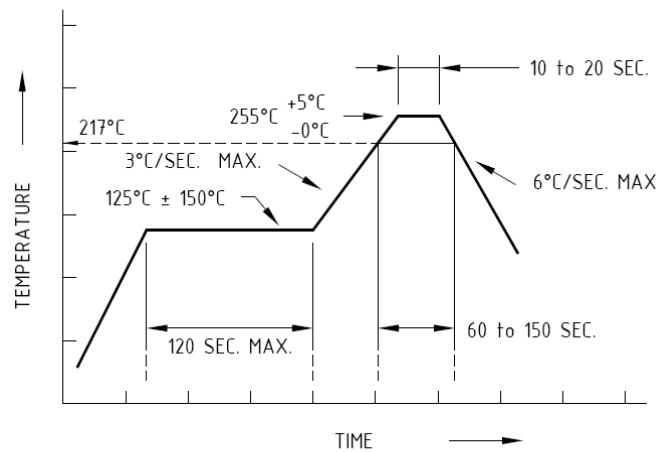
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SOLDERING CONDITIONS:



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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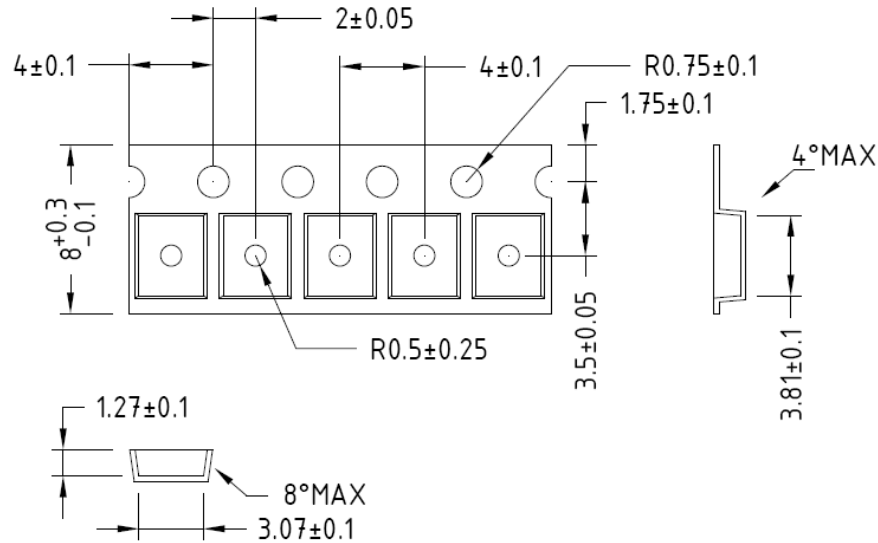
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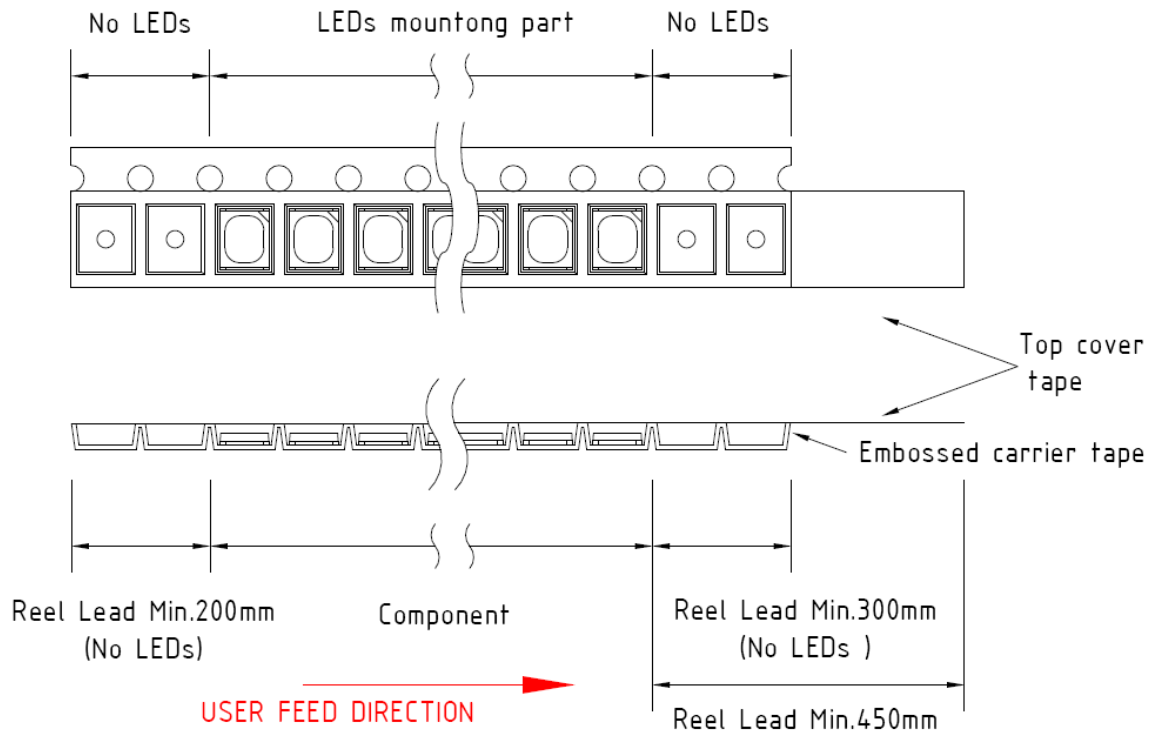
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TAPE DIMENSIONS



TAPE LEADER AND TRAILER DIMENSION





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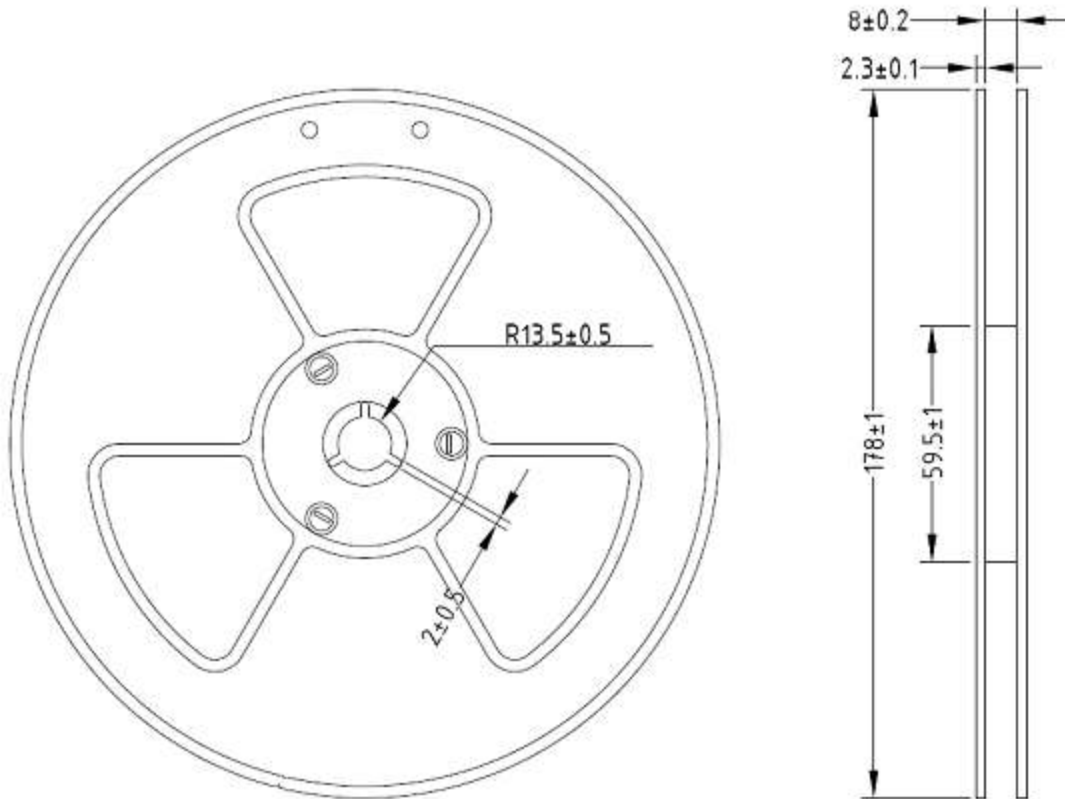
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REEL DIMENSION



Note: Baking is required under the following conditions:

The pack has been open for more than four weeks.

Baking recommended conditions.

60 ± 5 °C for 20 hours.



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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 has 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 detail.
- 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.