



American Opto Plus LED Corp.

L955MBC-ZS

3.5 X 2.8 X 1.9mm Blue PLCC2

MAIN FEATURES:

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

DATA SHEET UPDATE HISTORY:

- **Version 1.2 – August 14, 2013**
- **Version 1.3 – July 7, 2014**
 - Package outline dimensions revised
 - Absolut max ratings updated
 - Power dissipation revised to 105 mW
 - Junction Temperature, solder point, ambient added
 - Electrical/Optical Characteristics updated
 - Luminous intensity typ value revised to 300 mcd
 - Luminous Flux (mlm) and reverse current added
 - Tolerance for each bin limit revised to $\pm 15\%$
 - Color bin table adjusted
 - Forward Current vs. Ambient Temperature curve updated
- **Version 1.4 – December 19, 2014**
 - Operating Temperature revised to -40 ~ +100 °C

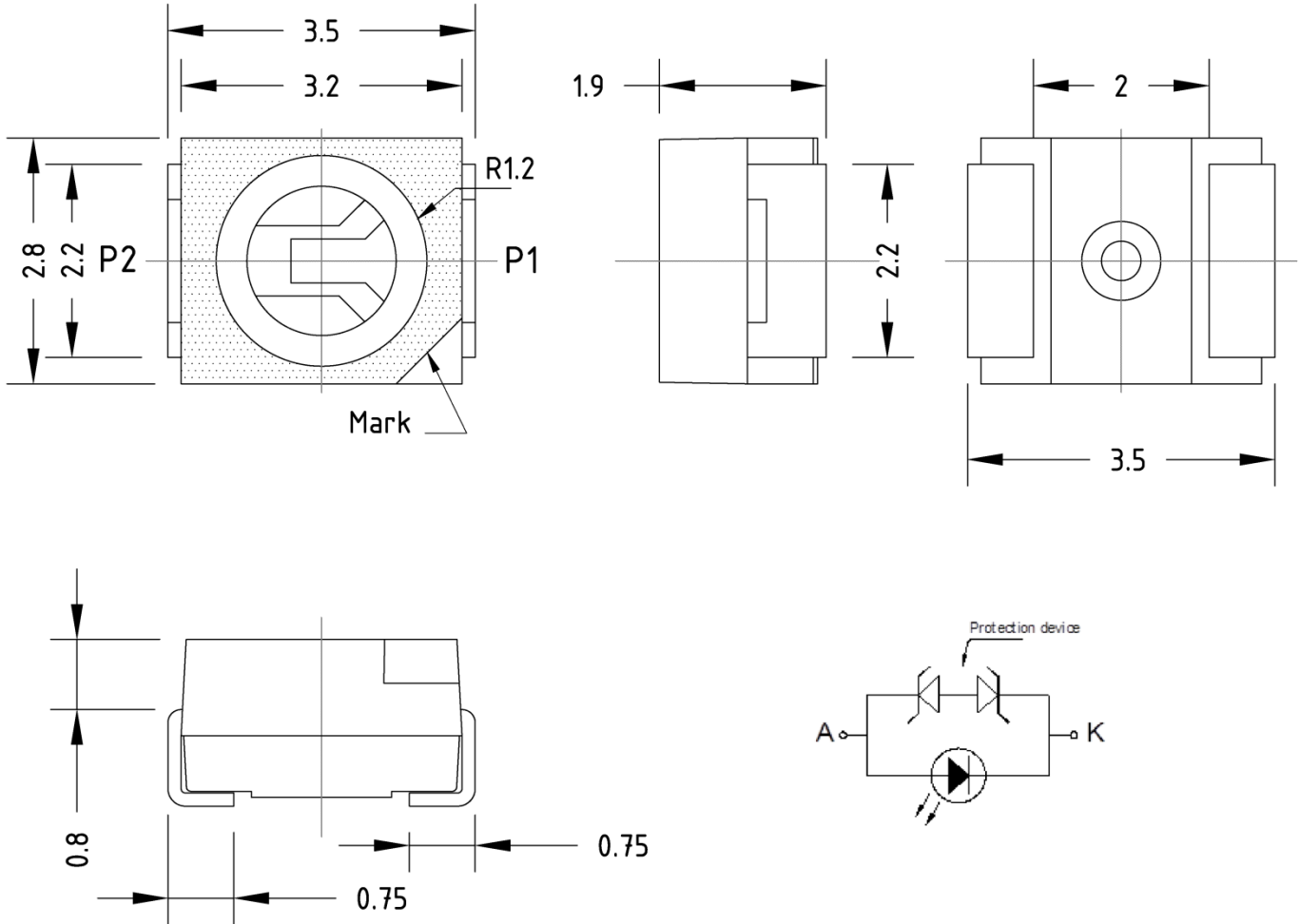


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PACKAGE OUTLINES:



Chip Material	Chip Emitted	Lens Color	Viewing Angle
InGaN	Blue	Clear	120°

NOTES:

1. All dimensions are in millimeters (inches);
2. Electrical Connection between all Cathodes is Recommended
3. 2,000 pcs per reel
4. Specification is preliminary



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ABSOLUTE MAXIMUM RATINGS

Ta = 25°C

Item	Symbol	Absolute Maximum Rating	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	105	mW
Junction Temperature	T _J	115	°C
Junction / Solder Point	R _{th Js}	370	°C/W
Junction / Ambient	R _{th Ja}	425	°C/W
Operating Temperature	T _{opr}	-40 ~ +100	°C
Storage Temperature	T _{stg}	-40 ~ +100	°C
Solder Temperature	T _{sol}	265°C for 10sec	

ELECTRICAL/OPTICAL CHARACTERISTICS

Ta = 25°C

Item	Symbol	Condition	Min	Typ	Max	Unit
Forward Voltage	V _F	I _F =20mA	--	3.2	3.5	V
Reverse Current	I _R		--	--	50	μA
Luminous Flux	Φ _V		--	1200	--	mlm
Luminous Intensity	I _v		180	300	520	mcd
Dominant Wavelength	λ _d		460	470	480	nm
Peak Wavelength	λ _p		--	465	--	nm
Spectral Half Width	Δλ _{1/2}		--	20	--	nm

Measurement Uncertainty of Luminous Intensity: ±10%



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LUMINOUS INTENSITY BIN CODE TABLE (IF=20mA)

Rank name	Min (mcd)	Max (mcd)
H	180	240
J	240	310
K	310	400
L	400	520

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

COLOR BIN CODE TABLE (IF=20mA)

Rank name	Min (nm)	Max (nm)
1	466	468
2	468	470
3	470	472
4	472	474

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

VF BIN CODE TABLE (IF=20mA)

Rank name	Min (nm)	Max (nm)
A	2.9	3.0
B	3.0	3.1
C	3.1	3.2
D	3.2	3.3
E	3.3	3.4
F	3.4	3.5

Tolerance for each bin limit is $\pm 0.05\text{V}$

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: IV RANK + Color Rank.
For Example, **BIN K2 Means IV: 310~400mcd , Color: 465nm~470nm**
3. Static Electricity or Surge Voltage damages the LEDs.
It is recommended to use a wrist band or Anti-Electrostatic glove when handling the LEDs.
4. AOP has the right to update the information without notice. Please double confirm the Spec details before place an order



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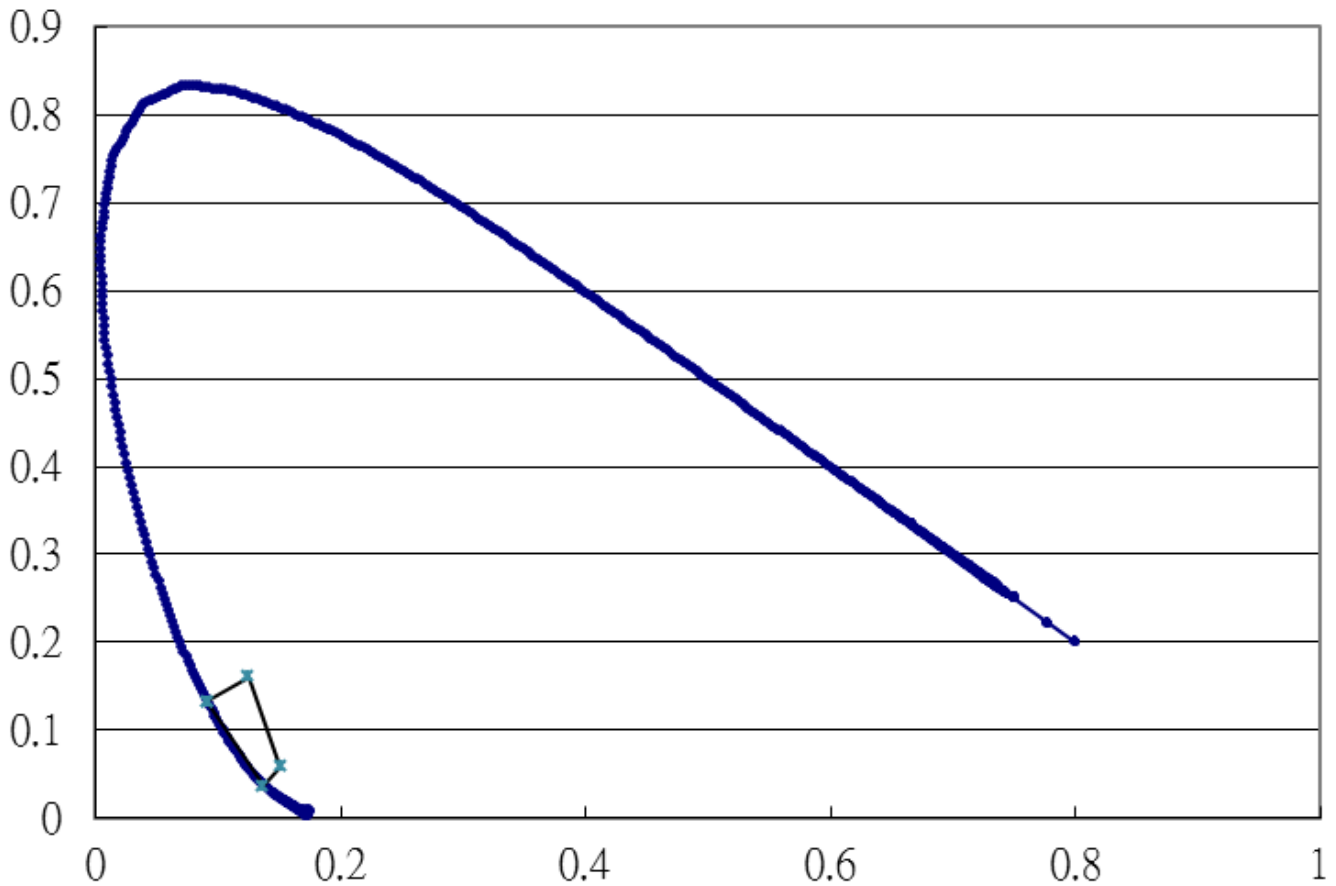
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COLOR BIN on CIE 1931 CHROMATICITY DIAGRAM



x	0.091	0.125	0.151	0.137
y	0.133	0.161	0.058	0.037



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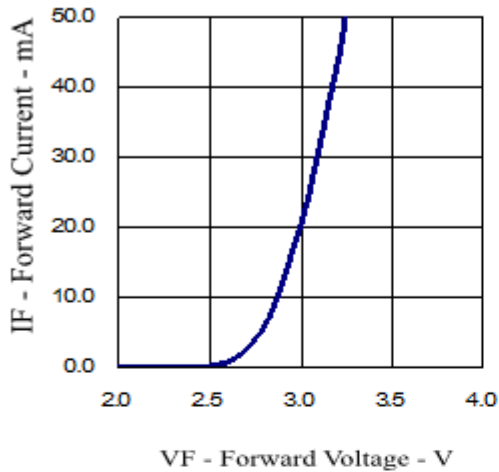
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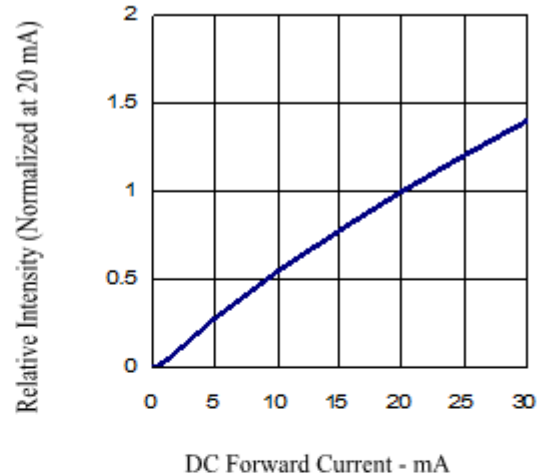
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OPTICAL CHARACTERISTIC CURVES:

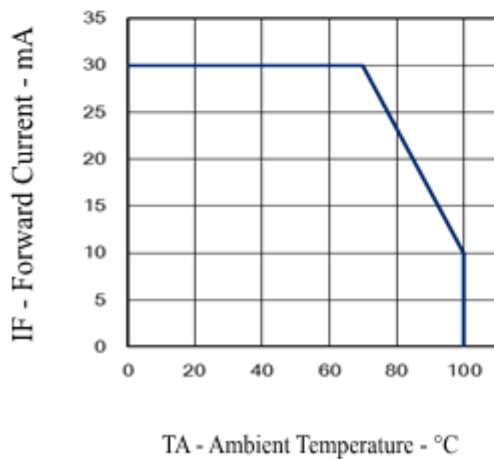
Forward Current vs. Forward Voltage



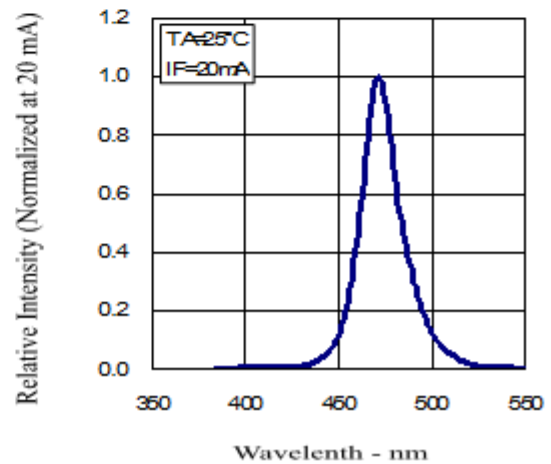
Relative Intensity vs. Forward Current



Forward Current vs. Ambient Temperature



Relative Intensity vs. Wavelength





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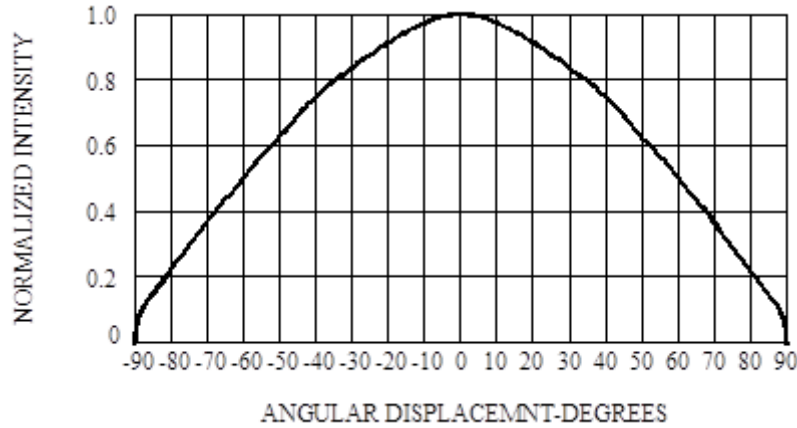
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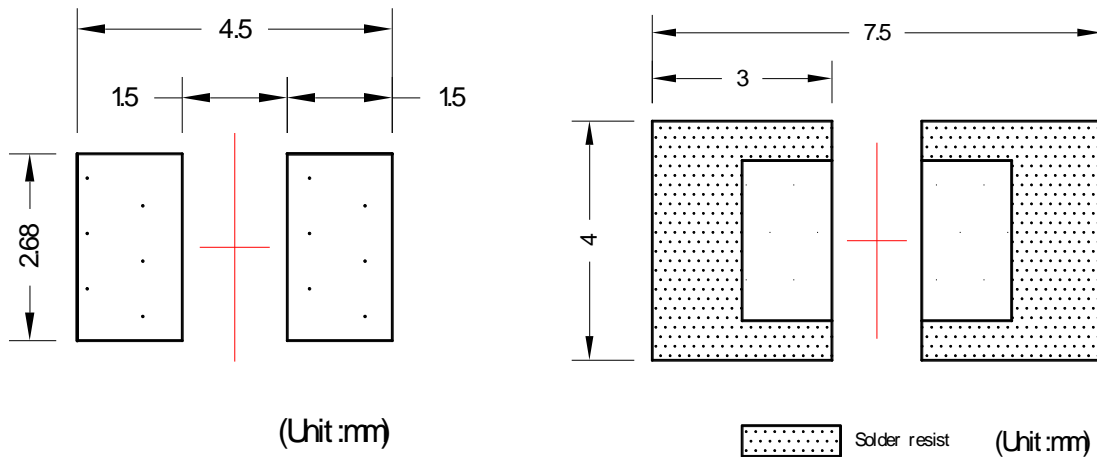
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RADIATION PATTERN



RECOMMENDED SOLDERING PATTERN





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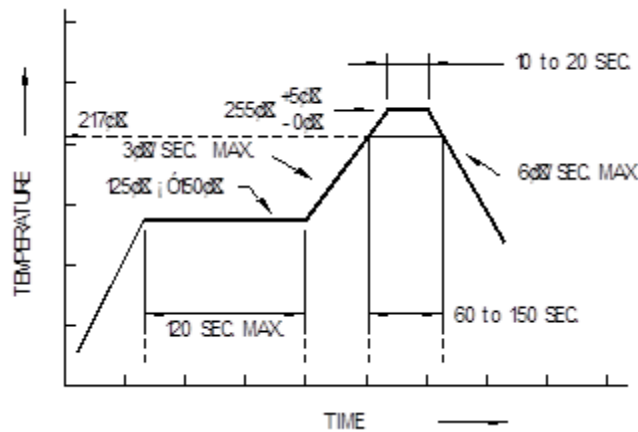
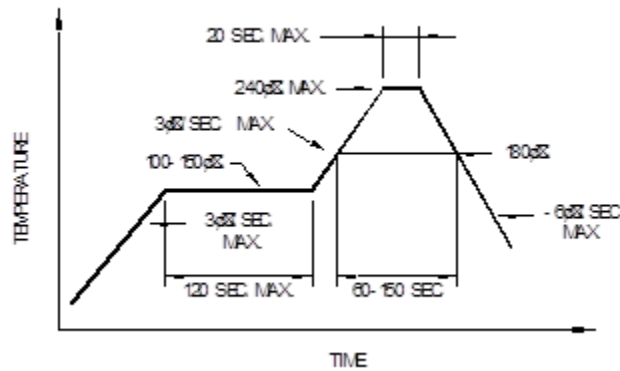
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Soldering Conditions:



- 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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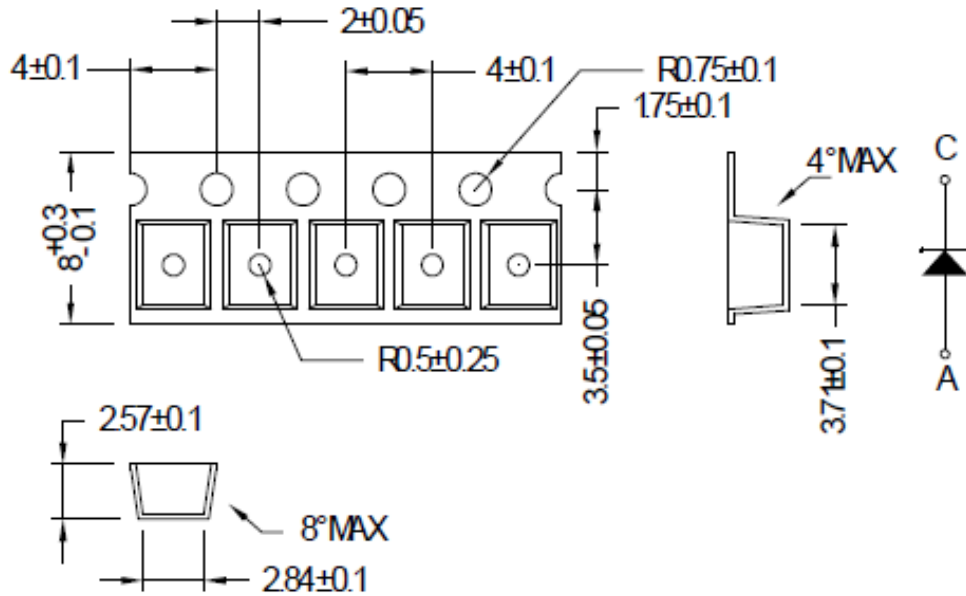
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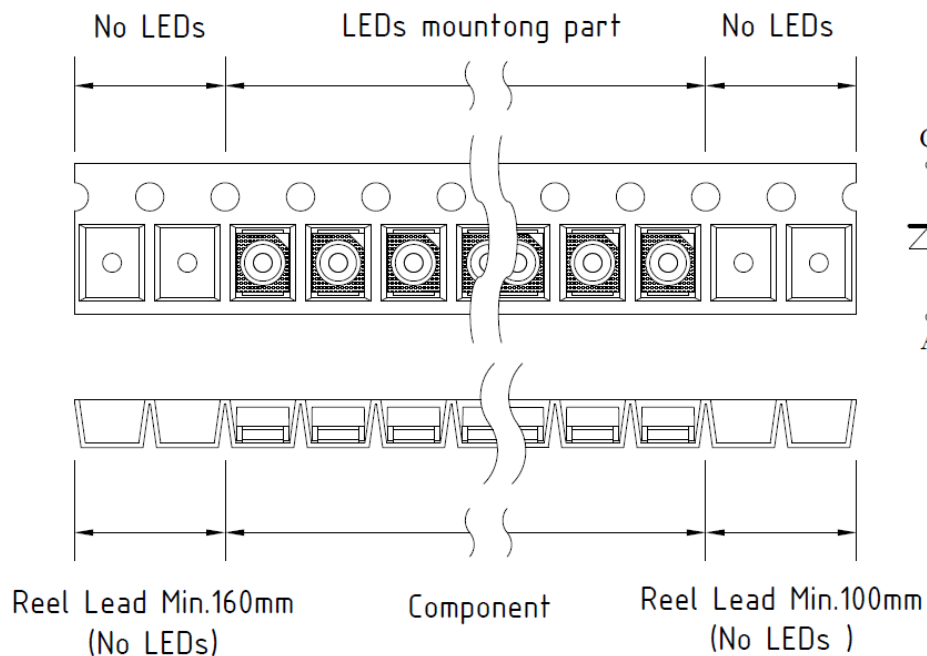
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TAPE DIMENSION



TAPE LEADER AND TRAILER DIMENSION



USER FEED DIRECTION →



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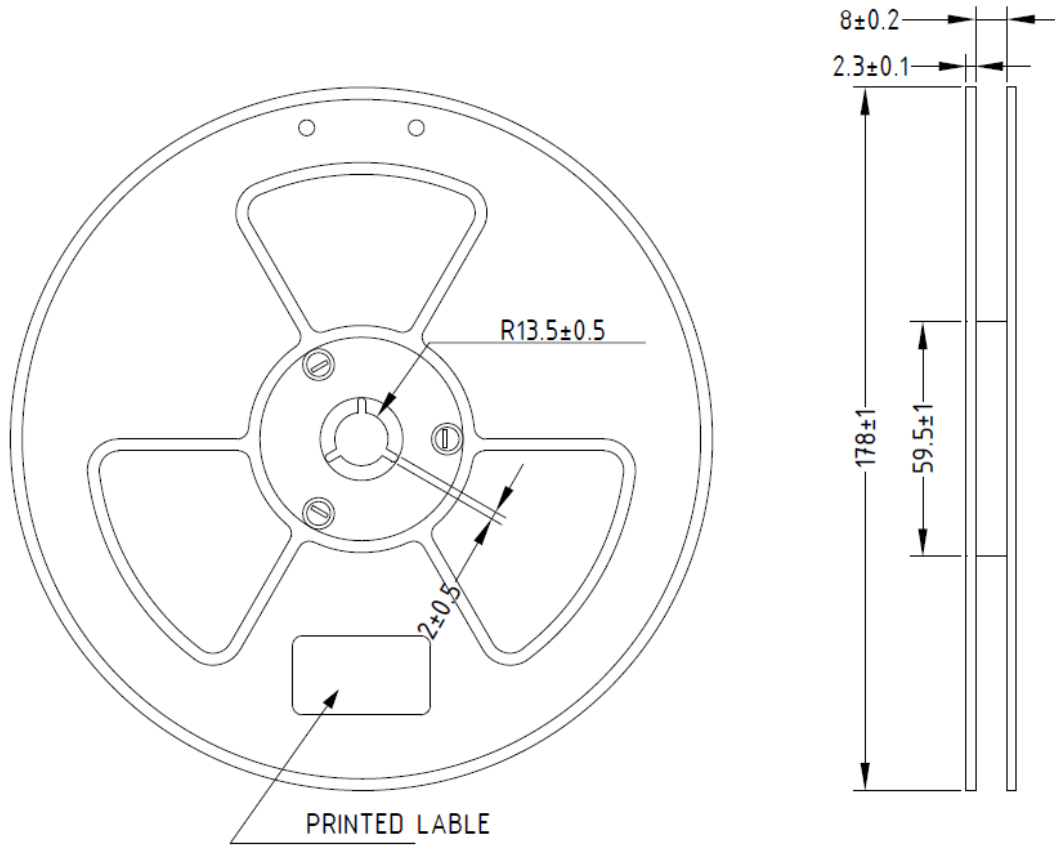
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REEL DIMENSION:



Note: Baking is required under the following conditions:

The pack has been opened 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 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.