

Order code: **55-9072**

MPN: OSM55630C1A-150mA

Order code: **55-9073**

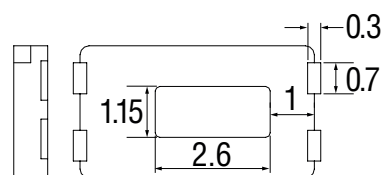
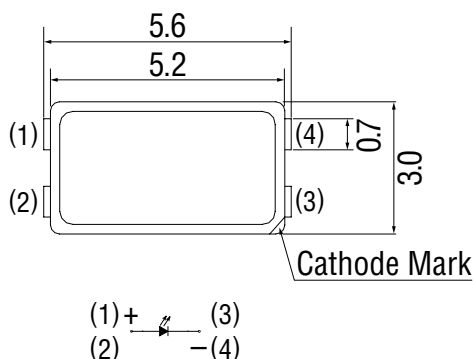
MPN: OSW35630C1A-150mA



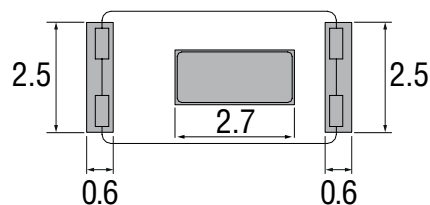
## Features:

- Top view white LED (5.6x3.0x0.8mm)
- Super high brightness of surface mount LED
- Lead frame package with individual 4 pins
- ESD protection
- Compatible to IR reflow soldering

## Outline Dimension:



Recommended Soldering Pad Design



## Applications

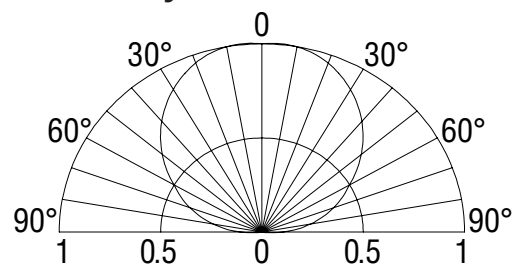
- General lighting
- Decoration lighting
- Indicator

## Absolute maximum rating (Ta=25°C)

Item	Symbol	Value	Unit
DC forward current	$I_F$	150	mA
Pulse forward current*	$I_{FP}$	200	mA
Reverse voltage	$V_R$	5	V
Power dissipation	$P_D$	540	mW
Operating temperature	$T_{opr}$	-30 to +85	°C
Storage temperature	$T_{stg}$	-40 to +100	°C
Lead soldering temperature	$T_{sol}$	260°C/10sec	-

\*Pulse width max. 10ms. Duty ratio max. 1/10

## Directivity:



## Electrical – Optical characteristics (Ta=25°C)

Order code	MPN	Colour		$V_F$ (V)			$I_R$ (μA)	$\Phi_v$ (lm)			CCT			$2\theta_{1/2}$ (deg)
				Min.	Typ.	Max.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Typ.
				$I_F=150mA$			$V_R=5V$	$I_F=150mA$						
<b>55-9073</b>	OSW35630C1A-150mA	White	W	2.8	3.1	3.6	10	45	-	60	5000K	-	6000K	120
<b>55-9072</b>	OSM55630C1A-150mA	Warm White	M	2.8	3.1	3.6	10	40	-	55	2800K	-	3500K	120

Note: \*  $V_F$  tolerance:  $\pm 0.05V$

\* Luminous flux measurement allowance is:  $\pm 10\%$

## Rank

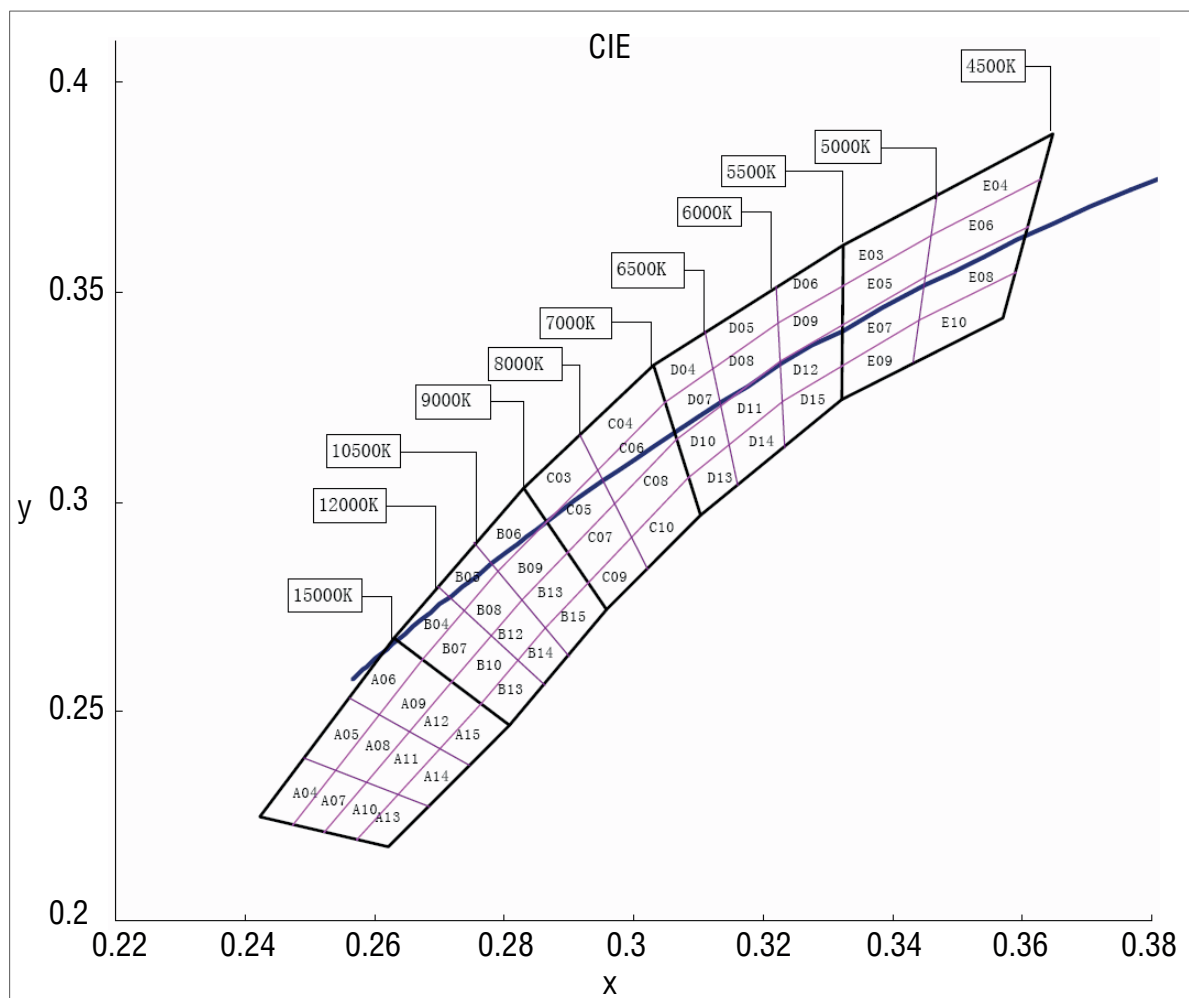
\* Correspondence Table of Luminous Flux

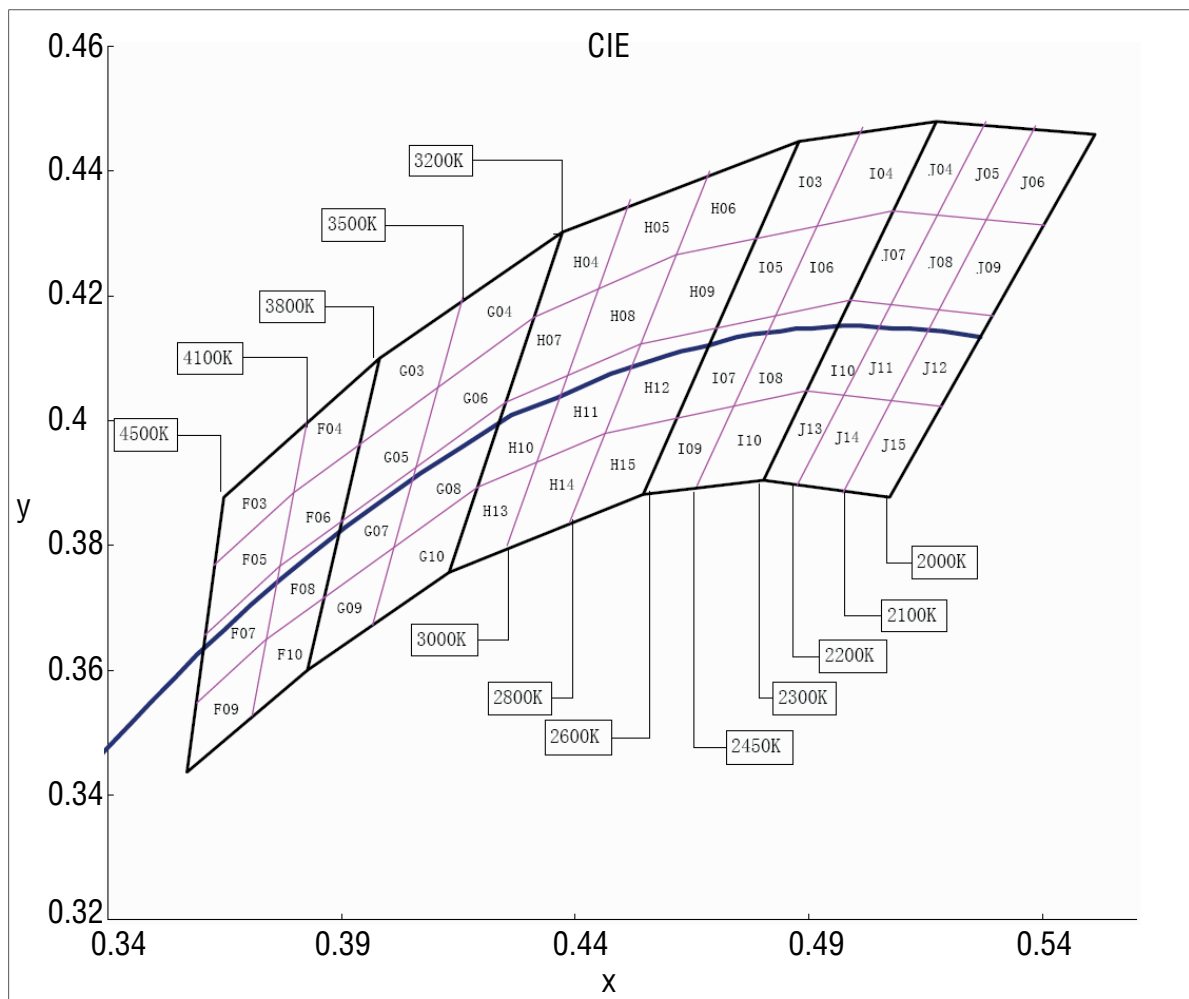
Bin code	Flux (lm)	
	Minimum	Maximum
1	30	35
2	35	40
3	40	45
4	45	50
5	50	55
6	55	60
.....	.....	.....

\*VF bin Limit (IF=150mA)

Bin code	Minimum (V)	Maximum (V)
A	2.8	3.0
B	3.0	3.2
C	3.2	3.4
D	3.4	3.6

## Chromaticity Diagram





\* Bin Range of Chromaticity Coordinates (OSW35630C1A)

Code	X1	Y1	X2	Y2	X3	Y3	X4	Y4
D06	0.3221	0.3523	0.3324	0.3612	0.3324	0.3520	0.3224	0.3420
D09	0.3224	0.3430	0.3324	0.3520	0.3323	0.3429	0.3228	0.3336
D12	0.3228	0.3336	0.3323	0.3429	0.3323	0.3337	0.3231	0.3243
D15	0.3231	0.3243	0.3323	0.3337	0.3322	0.3245	0.3234	0.3149
E03	0.3324	0.3612	0.3470	0.3738	0.3461	0.3637	0.3324	0.3520
E05	0.3324	0.3520	0.3461	0.3637	0.3452	0.3536	0.3323	0.3429
E07	0.3323	0.3429	0.3452	0.3536	0.3442	0.3435	0.3323	0.3337
E09	0.3323	0.3337	0.3442	0.3435	0.3433	0.3334	0.3322	0.3245

**\* Bin Range of Chromaticity Coordinates (OSM55630C1A)**

Code	X1	Y1	X2	Y2	X3	Y3	X4	Y4
G04	0.4160	0.4199	0.4373	0.4302	0.4313	0.4166	0.4112	0.4067
G06	0.4112	0.4067	0.4313	0.4166	0.4252	0.4030	0.4063	0.3936
G08	0.4063	0.3936	0.4252	0.4030	0.4192	0.3893	0.4015	0.3804
G10	0.4015	0.3804	0.4192	0.3893	0.4131	0.3757	0.3966	0.3672
H04	0.4373	0.4302	0.4518	0.4354	0.4453	0.4216	0.4313	0.4166
H05	0.4518	0.4354	0.4689	0.4408	0.4614	0.4265	0.4453	0.4216
H07	0.4313	0.4166	0.4453	0.4216	0.4387	0.4077	0.4252	0.4030
H08	0.4453	0.4216	0.4614	0.4265	0.4539	0.4123	0.4387	0.4077
H10	0.4252	0.4030	0.4387	0.4077	0.4322	0.3939	0.4192	0.3893
H11	0.4387	0.4077	0.4539	0.4123	0.4463	0.3980	0.4322	0.3939
H13	0.4192	0.3893	0.4322	0.3939	0.4256	0.3800	0.4131	0.3757
H14	0.4322	0.3939	0.4463	0.3980	0.4388	0.3837	0.4256	0.3800

\*If color binning is required, only one color group is allowed for each chip within a reel.

Chromaticity coordinate groups are measured with an accuracy of  $\pm 0.01$

\*Color coordinate is derived from the CIE 1931 chromaticity.

**\* Bin Rank of VF**

Rank ( $I_F=20\text{mA}$ )	White		
	88T-999	AAA	BBB
DC Forward Voltage (V)	2.9-3.2	3.2-3.4	3.4-3.6

\*Forward voltage is measured with an accuracy of  $\pm 0.1\text{V}$ .

## ■ Typical Electro-Optical Characteristics Curves

Fig.1 Relative Luminous Intensity VS. Wavelength

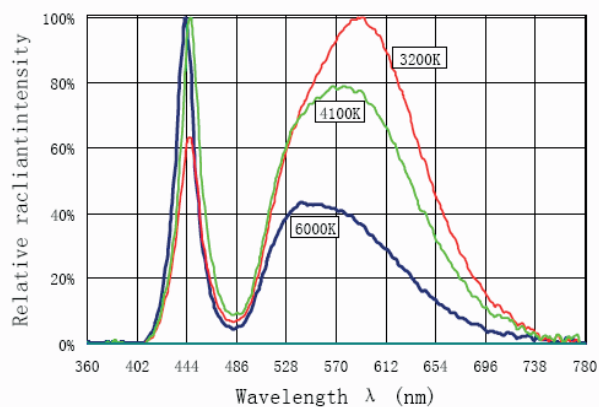


Fig.2 Forward current vs. Forward voltage

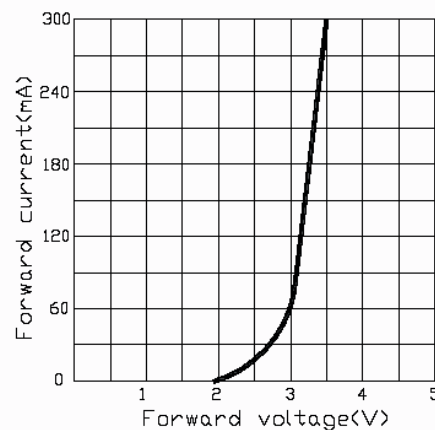


Fig.3 Forward current derating curve vs. Ambient temperature

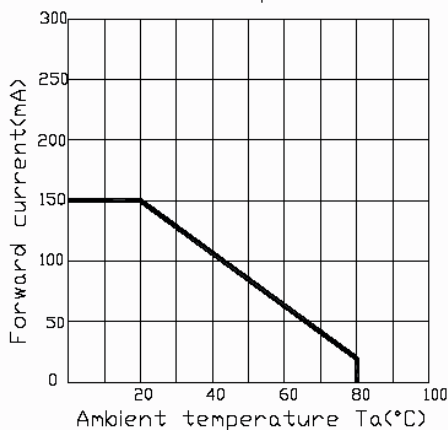


Fig.4 Relative luminous intensity vs. Forward current

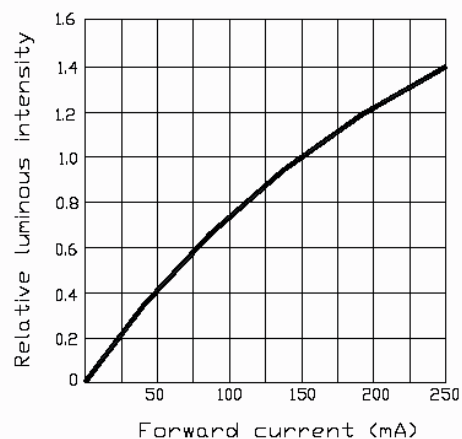


Fig.5 Relative luminous intensity vs. Ambient temperature

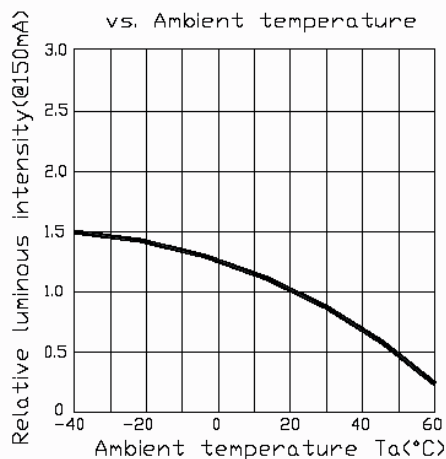
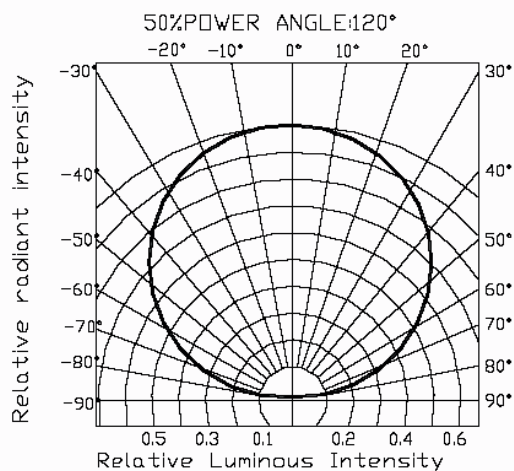


Fig.6 Radiation diagram



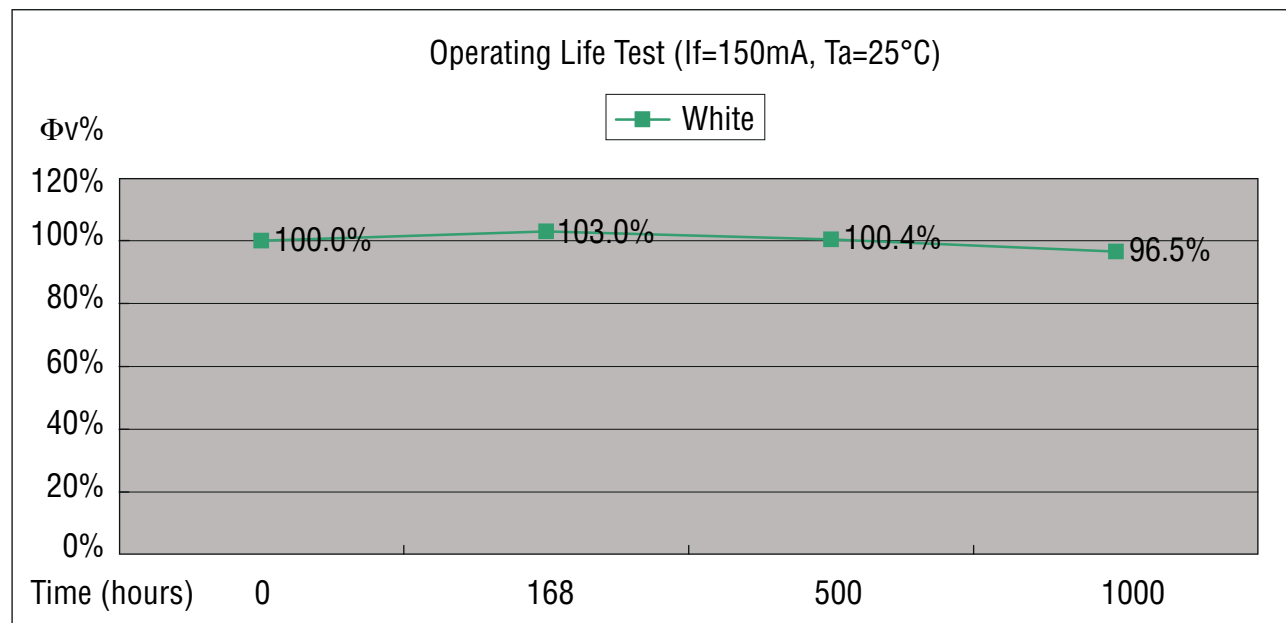
## ■ RELIABILITY TEST REPORT

CLASSIFICATION	TEST TIME	TEST CONDITION
ENDURANCE TEST	OPERATION LIFE	If:150mA Ta:25+5 TEST TIME=1000HRS (-24HRS,+72HRS)
	HIGH TEMPERATURE HIGH HUMIDITY STORAGE	R.H:90~95% Ta:65+5°C TEST TIME=240HRS (+2HRS)
	HIGH TEMPERATURE STORAGE	Ta:-55±5°C TEST TIME=500HRS (-24HRS,+48HRS)
	LOW TEMPERATURE STORAGE	Ta:-55+5°C TEST TIME=500HRS (-24HRS,+48HRS)
ENVIRONMENTAL TEST	TEMPERATURE CYCLING	105°C~25°C~-55°C~25°C 60min 10min 60min 10min 20 cycles
	THERMAL SHOCK	105°C~-55°C 10min 10min 10 cycles
	SOLDER RESISTANCE	Ta:260±5°C TEST TIME=10±1sec
	SOLDERABILITY	Ta:230±5°C TEST TIME=5±1sec

## ■ JUDGMENT CRITERIA OF FAILURE FOR THE RELIABILITY

MEASURING TIME	SYMBOL	CONDITIONS	FAILURE
LUMINOUS INTENSITY	IV	IF=150mA	IV<0.5*INITIAL VALUE
FORWARD VOLTAGE	VF	IF=150mA	VF>1.2*INITIAL VALUE
REVERSE CURRENT	IR	Vr=5V	IR>2*SPEC

## ■ OPERATION LIFE TEST LUMINANCE RATE CURVE



\*Burn-in condition: 150mA (With heatsink.)

\*Projection of Statistical Average Light Output Degradation Performance for LED Technology Extrapolated from QA Dept. Test Data.

\*According to outgoing Packaged Products Specification

\*MTBF:50,000hrs, 90% Confidence (A Failure is Any LED Which is Open, shorted or fails to Emit Light)

\*The Projected Data is Base on The Feature of LED Itself Under Normal Operation Conditions.

\*Any Improper Circuit Design or External Factors Might Cause a Different Result.

## ■ Recommended Reflow Soldering Profile

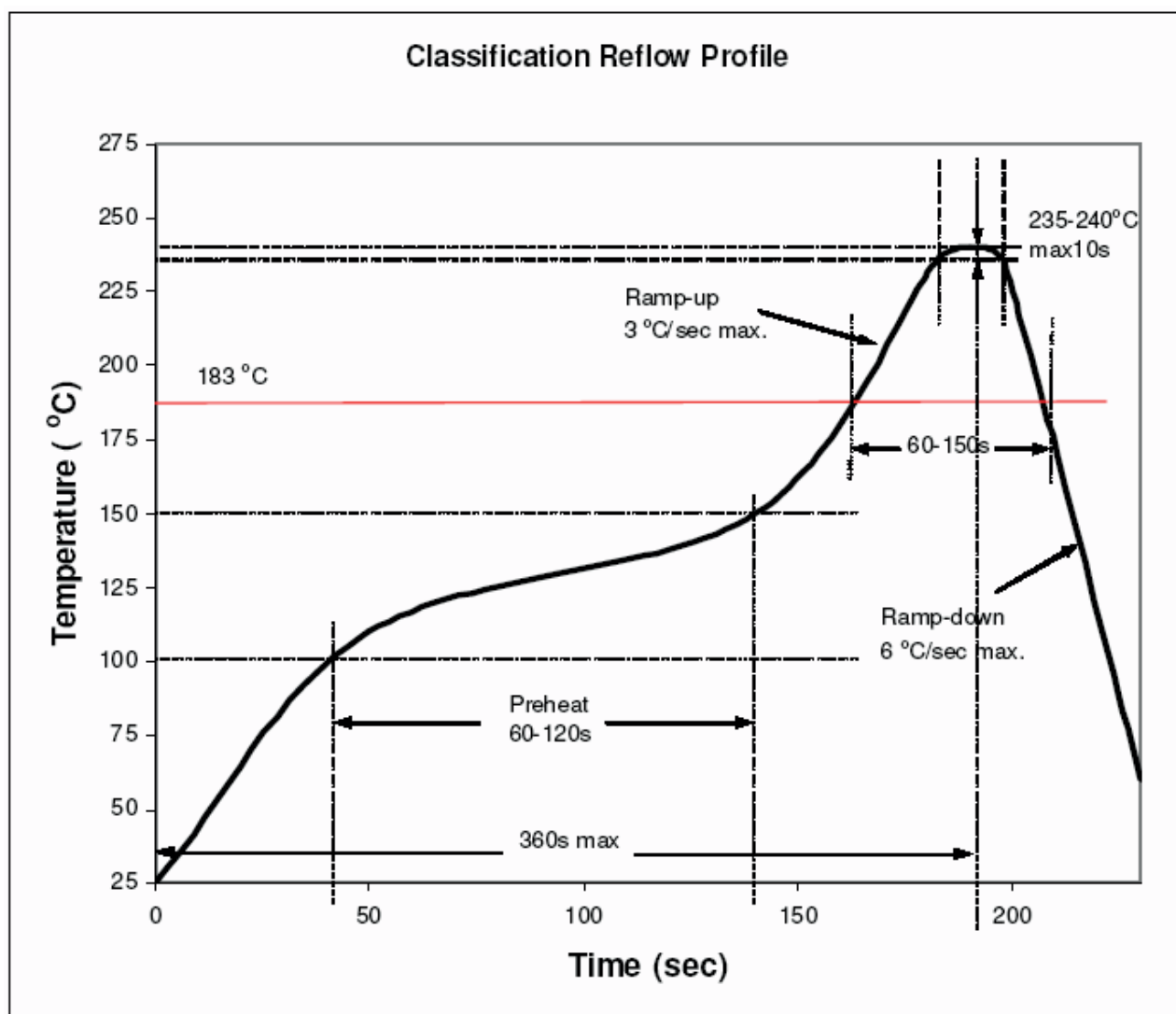
### Surface mounting condition

In automatic mounting of the SMD LEDs on printed circuit boards, any bending, expanding and pulling forces or shock against the SMD LEDs should be kept min. to prevent them from electrical failures and mechanical damages of the devices.

### Soldering reflow

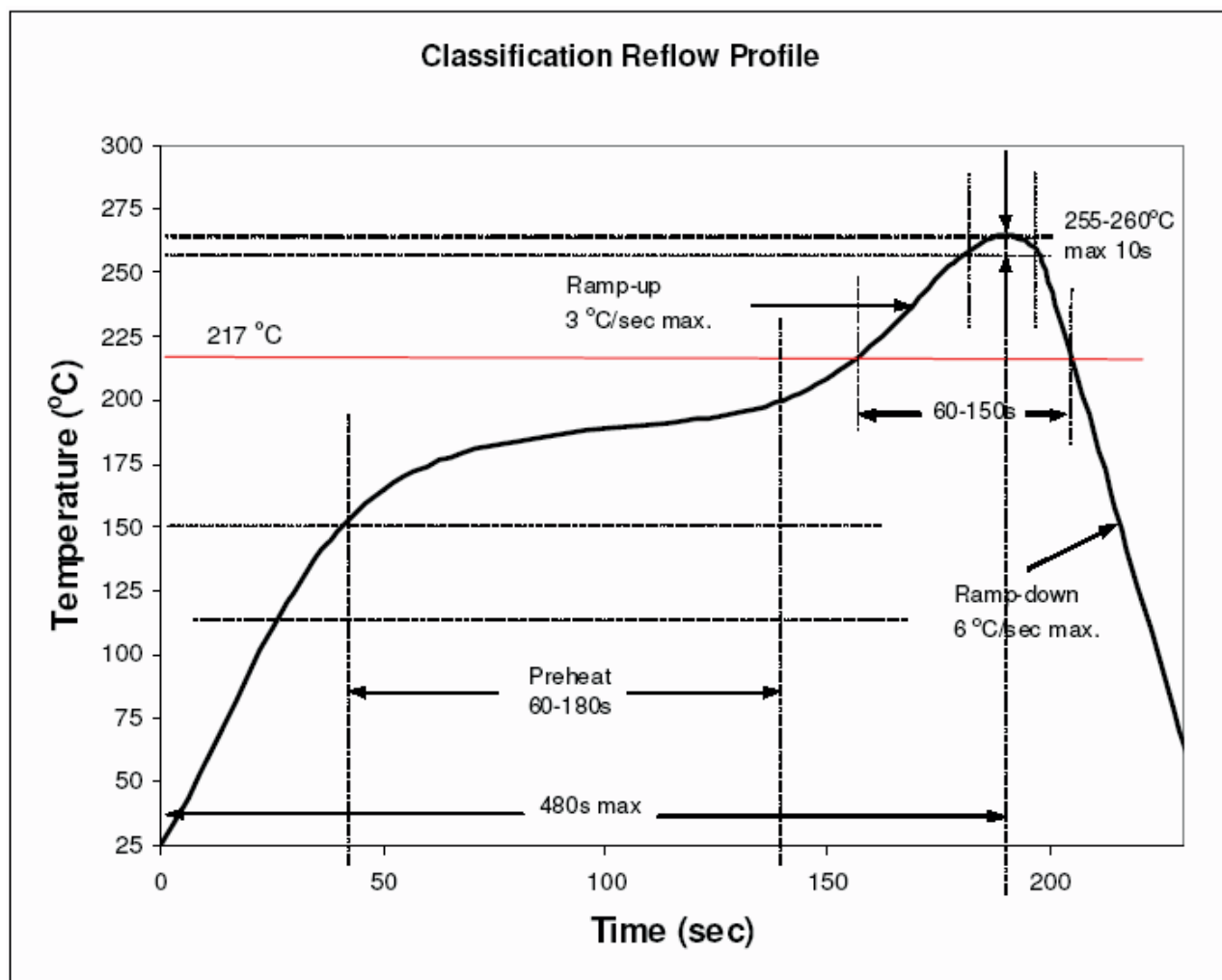
- Soldering of the SMD LEDs should conform to the soldering condition in the individual specifications.
- SMD LEDs are designed for reflow soldering.
- In the reflow soldering, too high temperature and too large temperature gradient such as rapid heating/cooling may cause electrical & optical failures and damages of the devices.
- Wellypower can't guarantee the LEDs after they have been assembled using the solder dipping method.

### 1) Lead solder





## 2) Lead-free solder

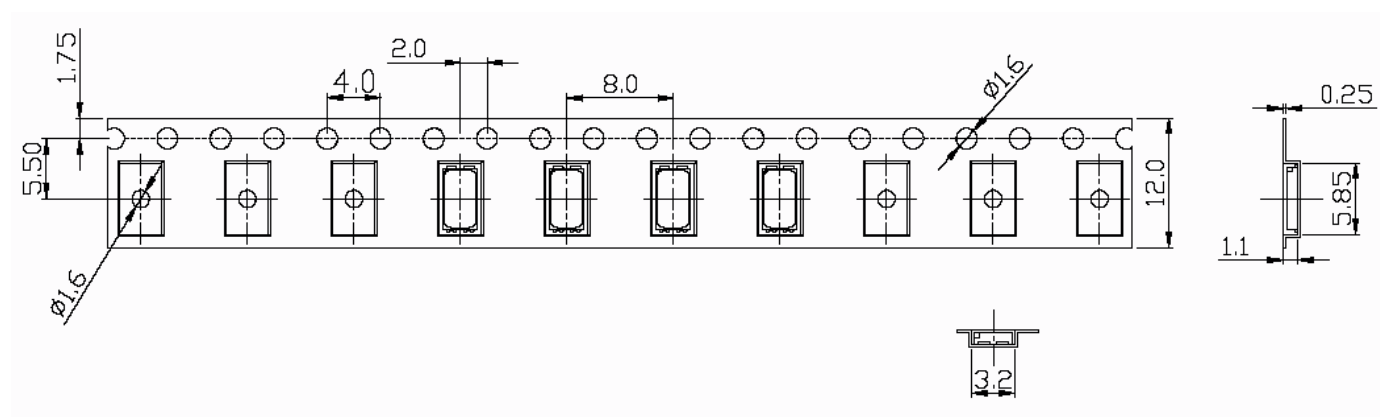


## 3) Manual soldering

- Lead solder  
Max. 300°C for max. 3sec, and only one time.
- Lead-free solder  
Max. 350°C for max. 3sec, and only one time.
- There is possibility that the brightness of LEDs is decreased, which is influenced by heat or ambient atmosphere during reflow. It is recommended to use the nitrogen reflow method use the nitrogen reflow method.
- After LEDs have been soldered, repairs should not be done. As repair is unavoidable, a doublehead soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will be damaged by repairing or not.
- Reflow soldering should not be done more than two times.

## ■ Package Model

Loaded Quantity 3000 pcs. Per Reel



Reel Part

