



# WP321608-CRC3

## SMD Type White Emitter

### Features

- Top view 1206 package
- Viewing Angle =  $\pm 70^\circ$
- Compatible with infrared and vapor phase reflow solder process
- High reliability
- Ultra bright White
- RoHS compliance

### Applications

- Optical indicator.
- Switch and Symbol Display.

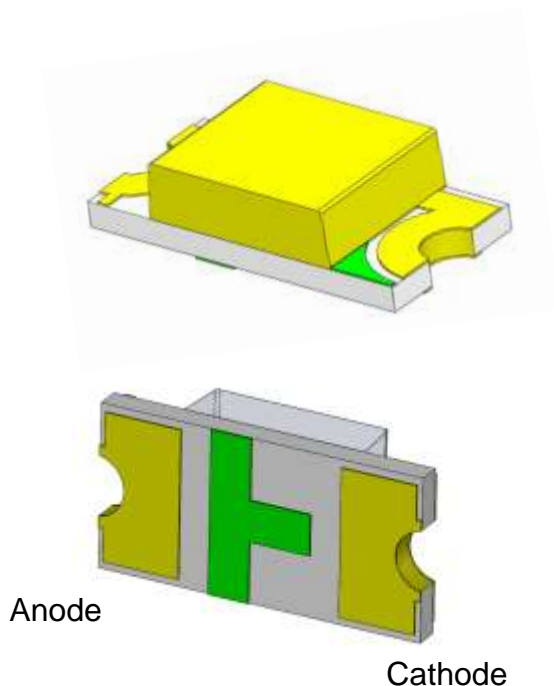
### Description

The WP321608-CRC3 is an AlInGaN White LED housed in a miniature SMD package.

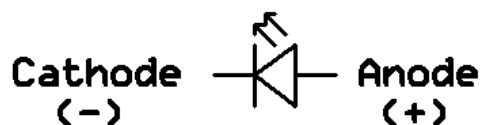
Static electricity and surge damage the LEDs.

It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

### Package Outline



### Schematic





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### Absolute Maximum Rating at 25°C

Symbol	Parameters	Ratings	Units	Notes
I <sub>F</sub>	Continuous Forward Current	25	mA	
I <sub>FP</sub>	Peak Forward Current	60	mA	1
V <sub>R</sub>	Reverse Voltage	5	V	
T <sub>opr</sub>	Operating Temperature	-40 ~ +85	°C	
T <sub>stg</sub>	Storage Temperature	-40 ~ +100	°C	
T <sub>sol</sub>	Soldering Temperature	260	°C	2
P <sub>D</sub>	Power Dissipation at(or below) 25°C Free Air Temperature	95	mW	

### Electro-Optical Characteristics *TA = 25°C (unless otherwise specified)*

#### Optical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I <sub>v</sub>	Luminous Intensity	I <sub>F</sub> =5mA	200	-	500	mcd	3
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =5mA	-	±70	-	deg	

#### Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =5mA	2.6	-	3.2	V	4
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V	-	-	1	μA	

#### Notes:

1. I<sub>FP</sub> Conditions--Pulse Width ≤ 100μs and Duty ≤ 10%.
2. Soldering time ≤ 10 seconds.
3. Bin Range of Luminous Intensity

Bin Code	Min	Max	Unit	Condition
p2	200	250	mcd	I <sub>F</sub> =5mA
q1	250	300		
q2	300	350		
r1	350	400		
r2	400	500		

Tolerance of: Luminous Intensity ±10%



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### 4. Bin Range of Forward Voltage

Bin Code	Min	Max	Unit	Condition
33	2.6	2.7	V	I <sub>F</sub> =5mA
34	2.7	2.8		
35	2.8	2.9		
36	2.9	3.0		
37	3.0	3.1		
38	3.1	3.2		

Tolerance of Forward Voltage  $\pm 0.05V$ .

### 5. Bin Range of Chromaticity Coordinates

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
A1	0.2500	0.2500	B1	0.2620	0.2500
	0.2576	0.2650		0.2695	0.2650
	0.2695	0.2650		0.2814	0.2650
	0.2620	0.2500		0.2740	0.2500
A2	0.2576	0.2650	B2	0.2695	0.2650
	0.2652	0.2800		0.2770	0.2800
	0.2770	0.2800		0.2888	0.2800
	0.2695	0.2650		0.2814	0.2650
A3	0.2652	0.2800	B3	0.2770	0.2800
	0.2728	0.2950		0.2845	0.2950
	0.2845	0.2950		0.2962	0.2950
	0.2770	0.2800		0.2888	0.2800
A4	0.2728	0.2950	B4	0.2845	0.2950
	0.2804	0.3100		0.2920	0.3100
	0.2920	0.3100		0.3036	0.3100
	0.2845	0.2950		0.2962	0.2950
A5	0.2804	0.3100	B5	0.2920	0.3100
	0.2880	0.3250		0.2995	0.3250
	0.2995	0.3250		0.3110	0.3250
	0.2920	0.3100		0.3036	0.3100

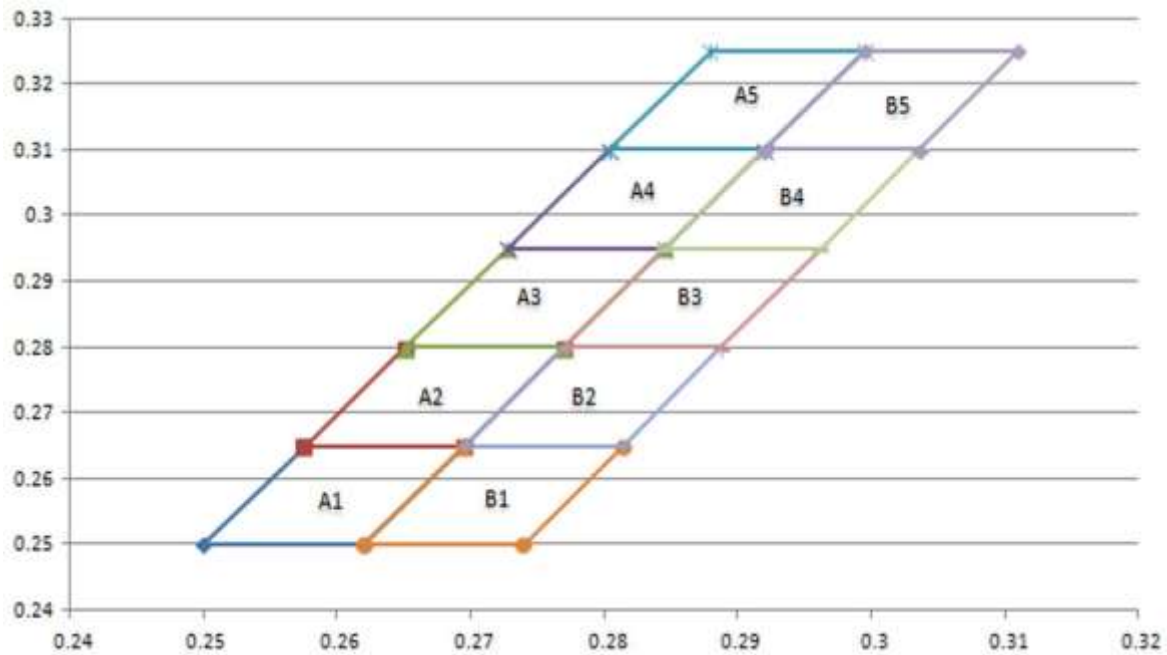
Tolerance of Chromaticity Coordinates  $\pm 0.01$



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#### The C.I.E. 1931 Chromaticity Diagram





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## SMD Type White Emitter

### Typical Characteristic Curves

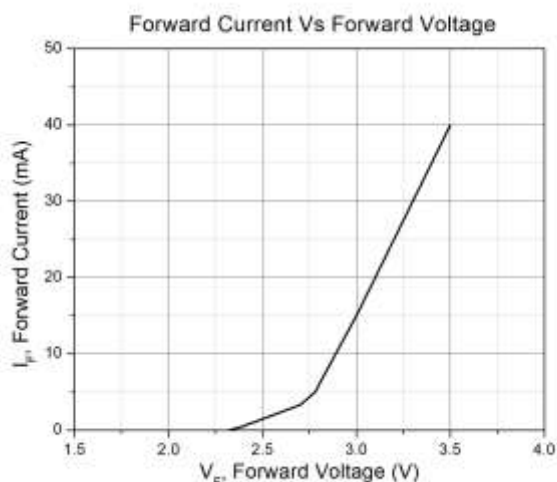


Figure 1

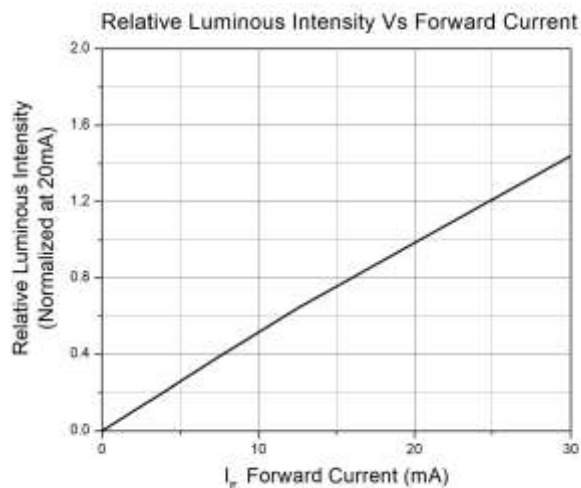


Figure 2

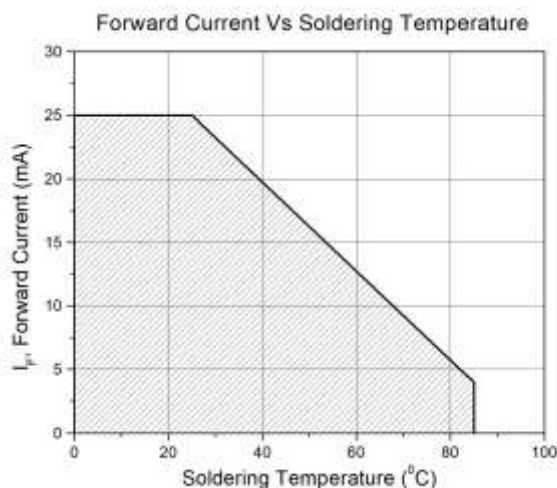


Figure 3

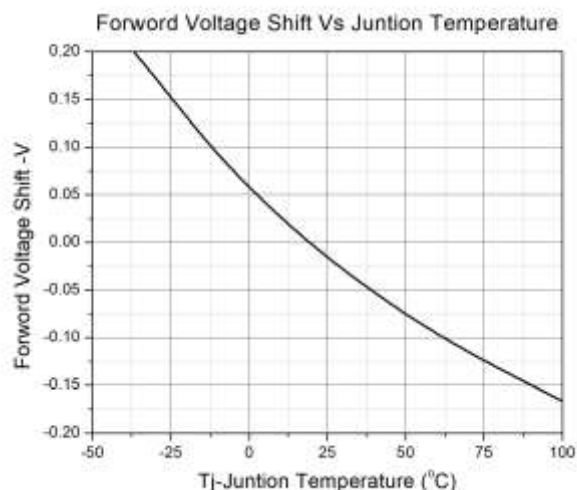


Figure 4

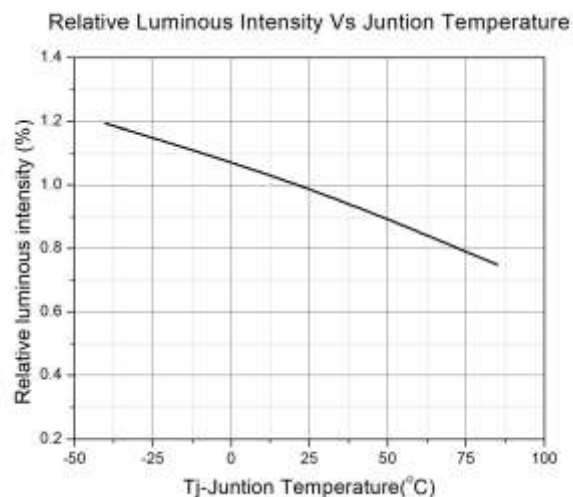


Figure 5

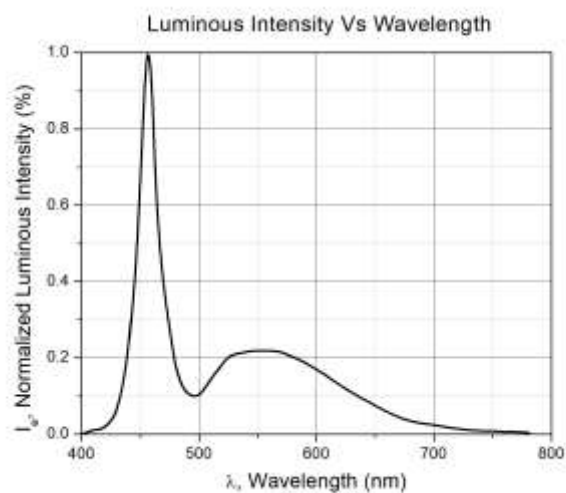


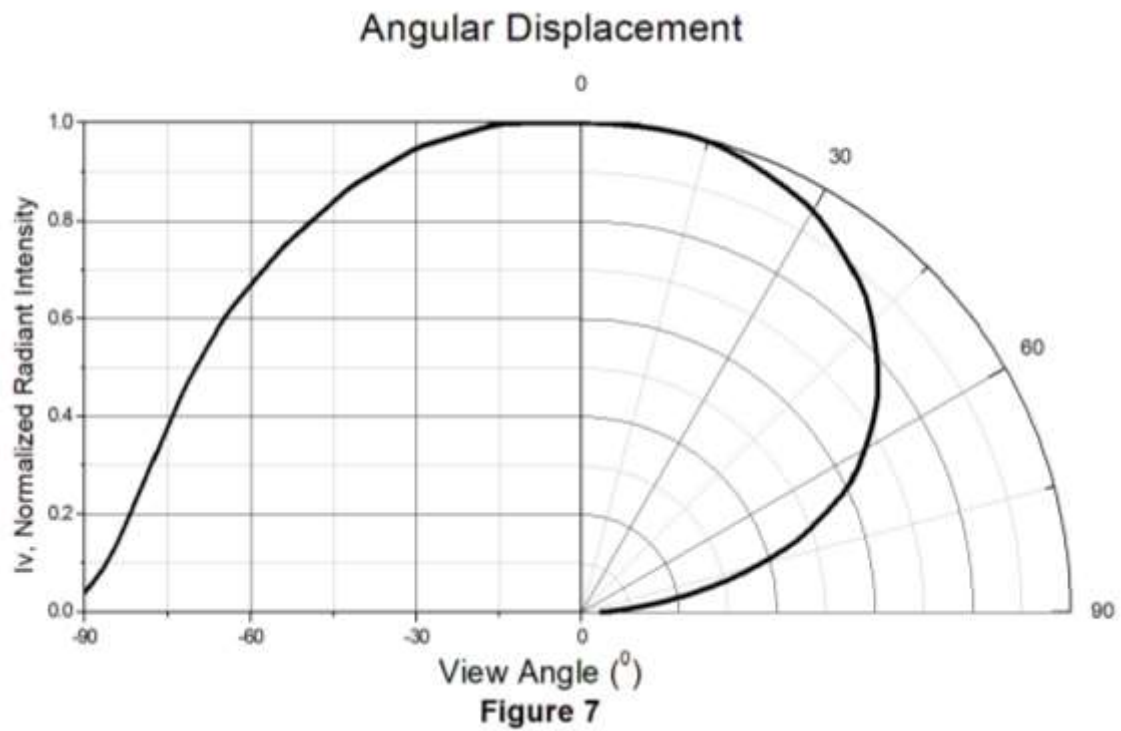
Figure 6



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## SMD Type White Emitter

### Typical Characteristic Curves

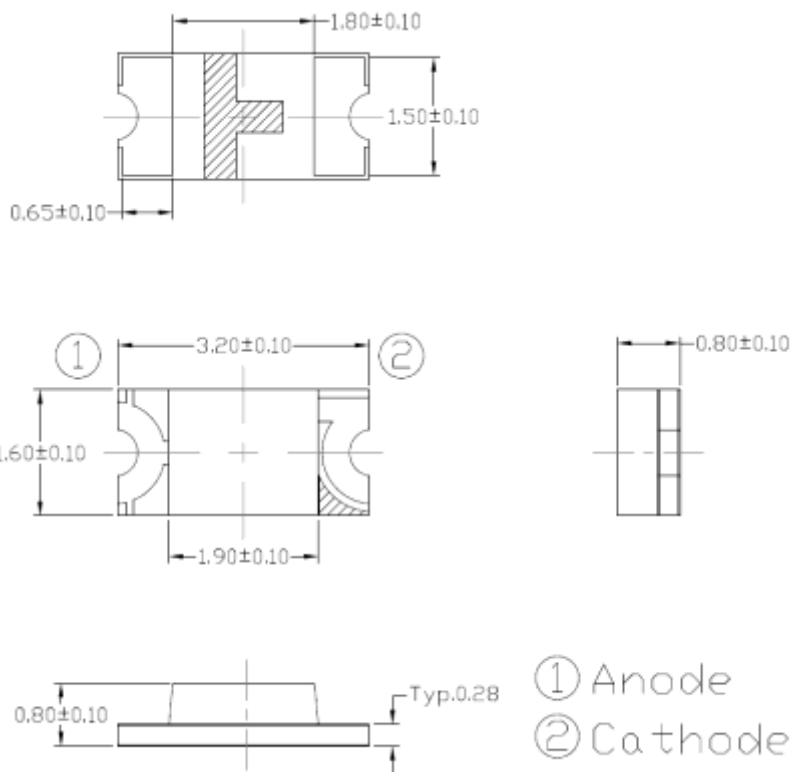




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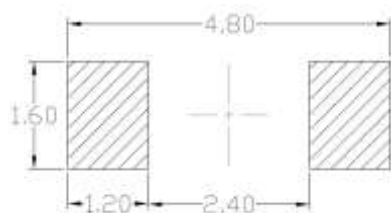
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### Package Dimension *All dimensions are in mm, unless otherwise stated*



Note: Tolerance unless mentioned is  $\pm 0.1$  mm.

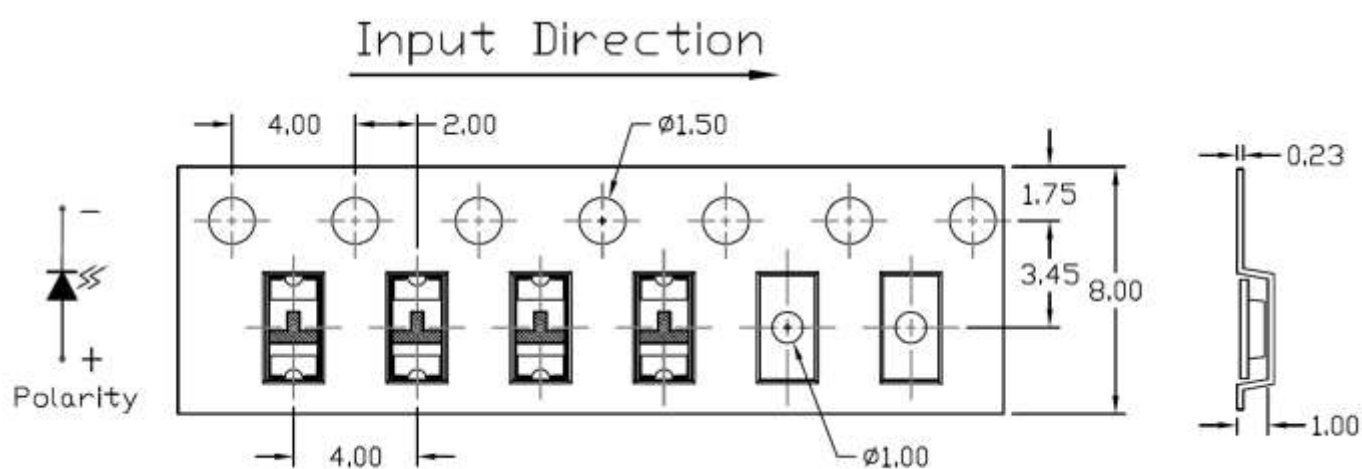
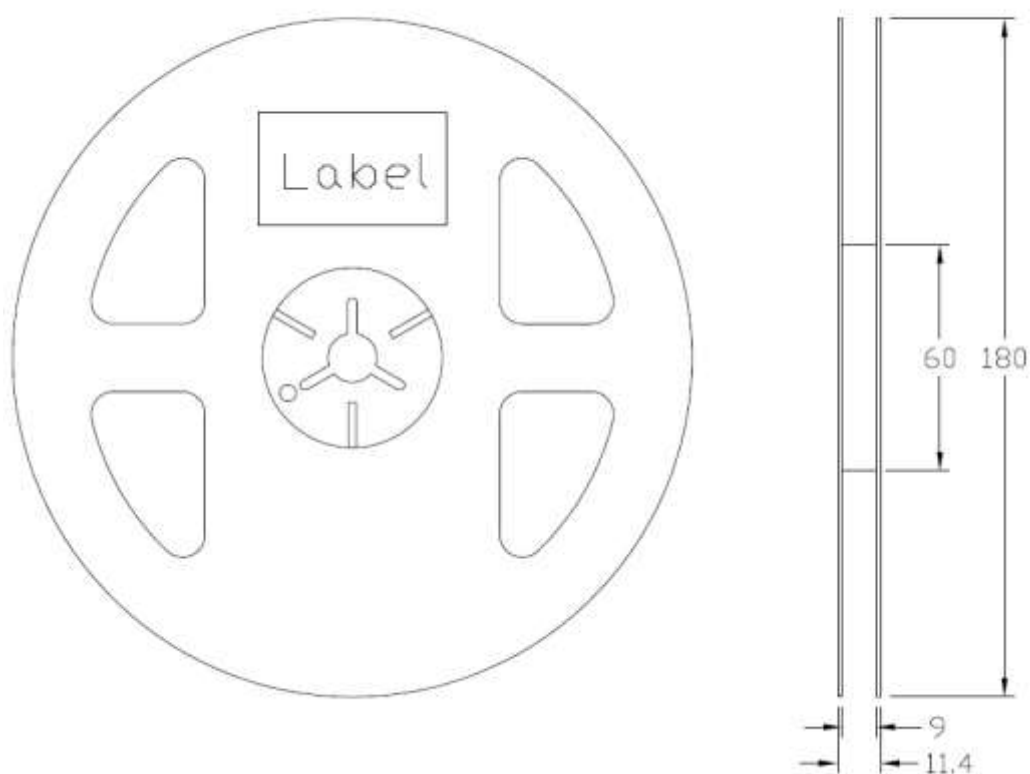
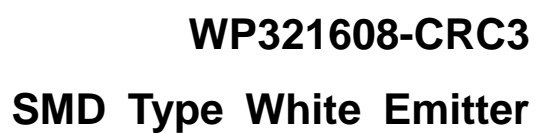
### Recommended Soldering Mask *All dimensions are in mm, unless otherwise stated*



Note: Tolerance unless mentioned is  $\pm 0.1$  mm.

### Ordering Information

Part Number	Description	Quantity
WP321608-CRC3	Tape & Reel	3000 pcs



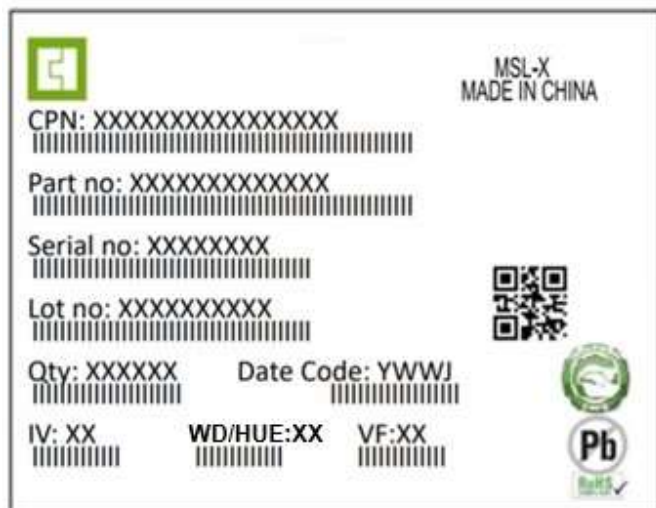




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### SMD Type White Emitter

#### Label Form Specification



CPN : Customer Part Number  
Part no: CTM Production Number  
Serial no: Production Number  
Lot no: Lot number  
Q'ty: Packing Quantity  
Date Code: Manufacture Date  
IV : Bin Code of Luminous Intensity  
WD : Bin Code of Dominant Wavelength  
HUE: Bin Code of Chromaticity Coordinates  
VF : Bin Code of Forward Voltage  
MADE IN CHINA: Production Place

#### Storage Condition

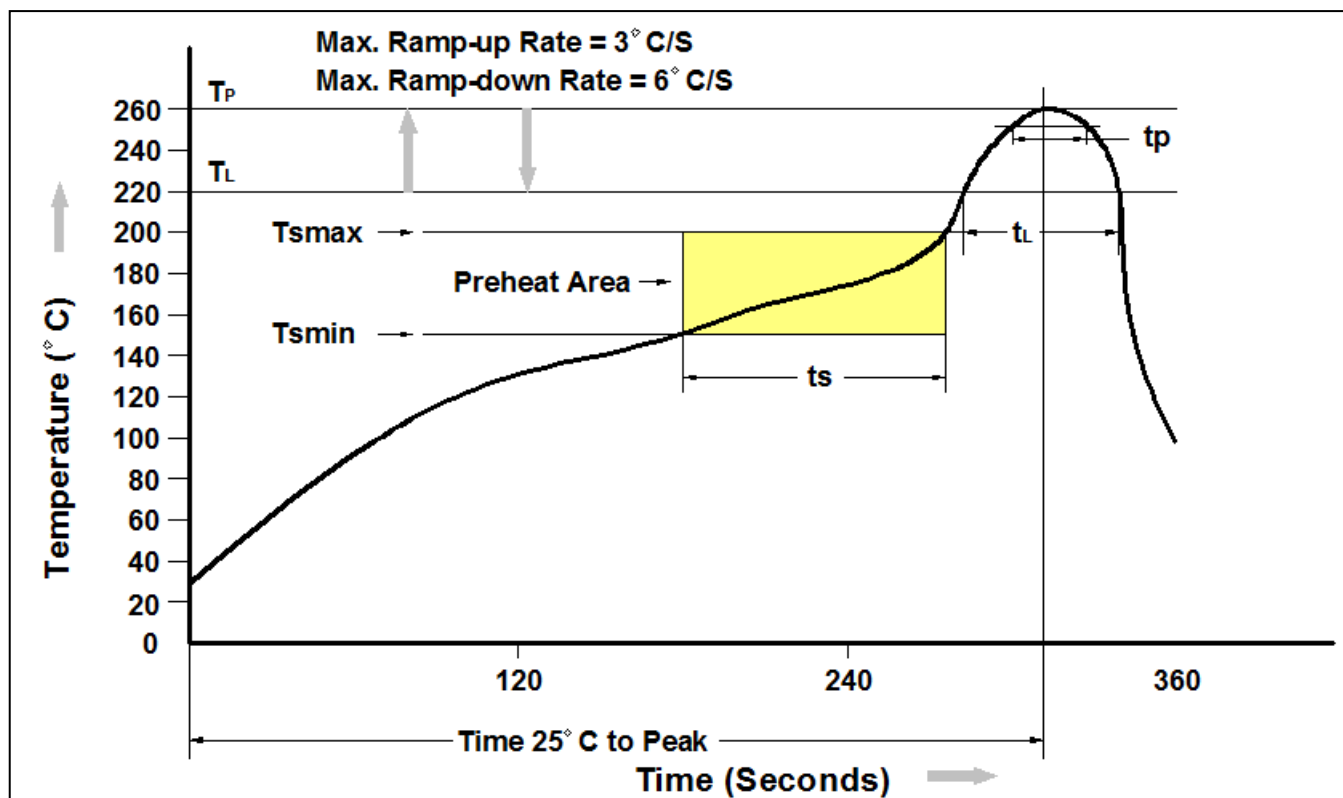
1. Do not open moisture proof bag before the products are ready to use.
2. The moisture barrier bag should be stored at 30°C and 90%R.H. max. before opening.  
Shelf life of non-opened bag is 12 months after the bag sealing date.
3. After opening the moisture barrier bag floor life is 1 year at 30°C/60%RH. max. Unused LEDs should be resealed into moisture barrier bag. (Refer to J-STD-020 Standard)
4. If the moisture absorbent material has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the J-STD-033 Standard conditions.



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#### Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (Tssmin)	150°C
Temperature Max. (Tsmax)	200°C
Time (ts) from (Tssmin to Tsmax)	60-120 seconds
Ramp-up Rate (tL to tp)	3°C/second max.
Liquidous Temperature (TL)	217°C
Time (tL) Maintained Above (TL)	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time (tp) within 5°C of 260°C	30 seconds
Ramp-down Rate (TP to TL)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.



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