



WAP321015-NCSC2

Dual Wavelength SMD Type Emitter

Features

- Side view 1204 package
- Viewing Angle = $\pm 65^\circ$
- Compatible with infrared and vapor phase reflow solder process
- High reliability
- RoHS compliance

Applications

- Optical indicator.
- Switch and Symbol Display.

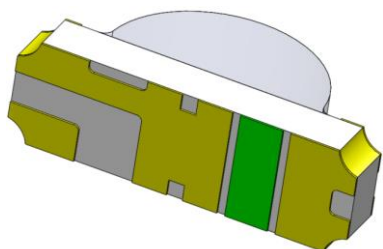
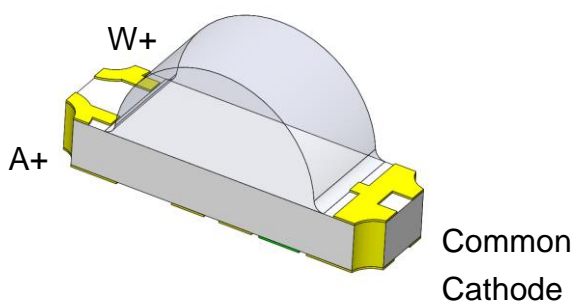
Description

The WAP321015-NCSC2 is a double LED housed in a miniature SMD package. The device has a White and Amber LED.

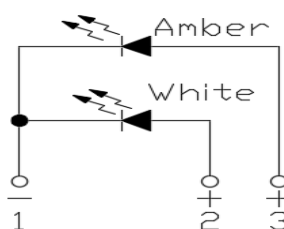
Static electricity and surge damage the LEDs.

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 _F	Continuous Forward Current	W	25	mA	
		A	25		
I _{FP}	Peak Forward Current	W	60	mA	1
		A	60		
V _R	Reverse Voltage		5	V	
T _{opr}	Operating Temperature		-40 ~ +85	°C	
T _{stg}	Storage Temperature		-40 ~ +100	°C	
T _{sol}	Soldering Temperature		260	°C	2
P _D	Power Dissipation at(or below) 25°C Free Air Temperature	W	95	mW	
		A	60		

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

Optical Characteristics (White)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I _v	Luminous Intensity	I _F =5mA	112	-	285	mcd	3
λ _D	Dominant Wavelength	I _F =5mA	-	-	-	nm	4
θ _{1/2}	Angle of Half Intensity	I _F =5mA	-	±65	-	deg	

Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V _F	Forward Voltage	I _F =5mA	2.6	-	3.2	V	
I _R	Reverse Current	V _R =5V	-	-	1	μA	

**Optical Characteristics (Amber)**

<i>Symbol</i>	<i>Parameters</i>	<i>Test Conditions</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Units</i>	<i>Notes</i>
I _v	Luminous Intensity	I _F =5mA	18	-	45	mcd	3
λ _d	Dominant Wavelength	I _F =5mA	600	605	610	nm	4
θ _{1/2}	Angle of Half Intensity	I _F =5mA	-	±65	-	deg	

Electrical Characteristics

<i>Symbol</i>	<i>Parameters</i>	<i>Test Conditions</i>	<i>Min</i>	<i>Typ</i>	<i>Max</i>	<i>Units</i>	<i>Notes</i>
V _F	Forward Voltage	I _F =5mA	1.6	-	2.2	V	
I _R	Reverse Current	V _R =5V	-	-	1	μA	

Notes:

1. I_{FP} Conditions--Pulse Width ≤ 100μs and Duty ≤ 10%.
2. Soldering time ≤ 10 seconds.
3. Bin Range of Luminous Intensity

White				
Bin Code	Min	Max	Unit	Condition
R	112	180	mcd	I _F =5mA
S	180	285		
Amber				
Bin Code	Min	Max	Unit	Condition
M	18.0	28.5	mcd	I _F =5mA
N	28.5	45.0		

Tolerance of: Luminous Intensity ±10%

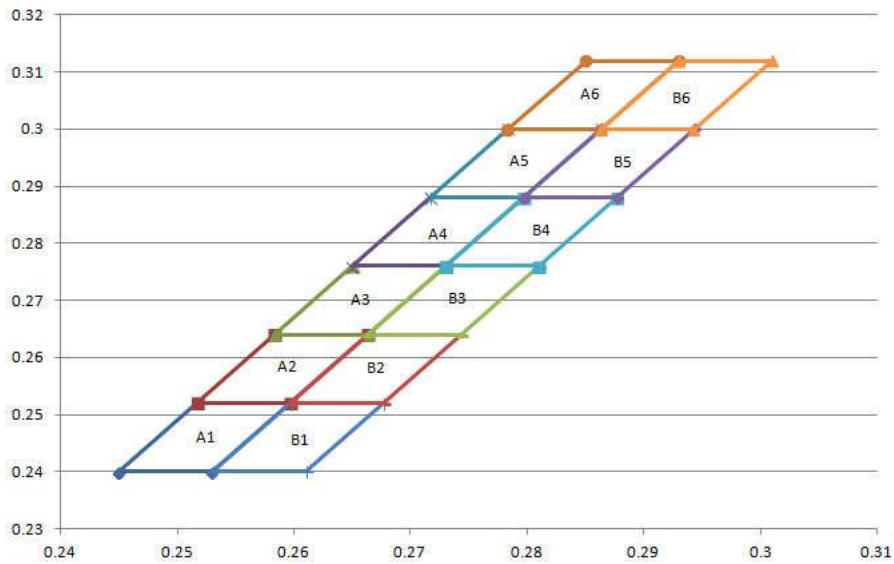
**4. Bin Range of Chromaticity Coordinates**

Bin Code	CIE_x	CIE_y	Bin Code	CIE_x	CIE_y
A1	0.2450	0.2400	B1	0.2530	0.2400
	0.2517	0.2520		0.2597	0.2520
	0.2597	0.2520		0.2677	0.2520
	0.2530	0.2400		0.2610	0.2400
A2	0.2517	0.2520	B2	0.2597	0.2520
	0.2583	0.2640		0.2663	0.2640
	0.2663	0.2640		0.2743	0.2640
	0.2597	0.2520		0.2677	0.2520
A3	0.2583	0.2640	B3	0.2663	0.2640
	0.2650	0.2760		0.2730	0.2760
	0.2730	0.2760		0.2810	0.2760
	0.2663	0.2640		0.2743	0.2640
A4	0.2650	0.2760	B4	0.2730	0.2760
	0.2717	0.2880		0.2797	0.2880
	0.2797	0.2880		0.2877	0.2880
	0.2730	0.2760		0.2810	0.2760
A5	0.2717	0.2880	B5	0.2797	0.2880
	0.2783	0.3000		0.2863	0.3000
	0.2863	0.3000		0.2943	0.3000
	0.2797	0.2880		0.2877	0.2880
A6	0.2783	0.3000	B6	0.2863	0.3000
	0.2850	0.3120		0.2930	0.3120
	0.2930	0.3120		0.3009	0.3120
	0.2863	0.3000		0.2877	0.2880



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Typical Characteristic Curves

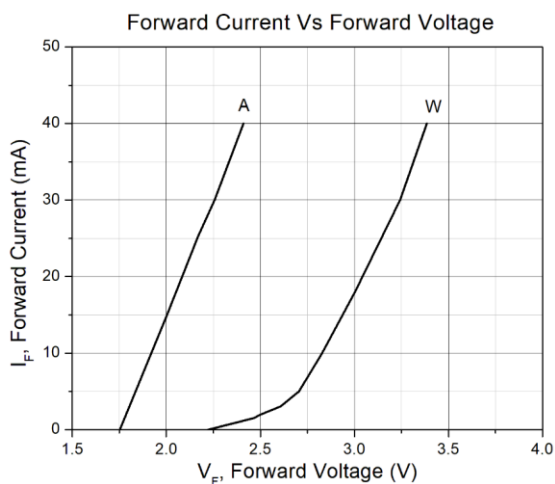


Figure 1

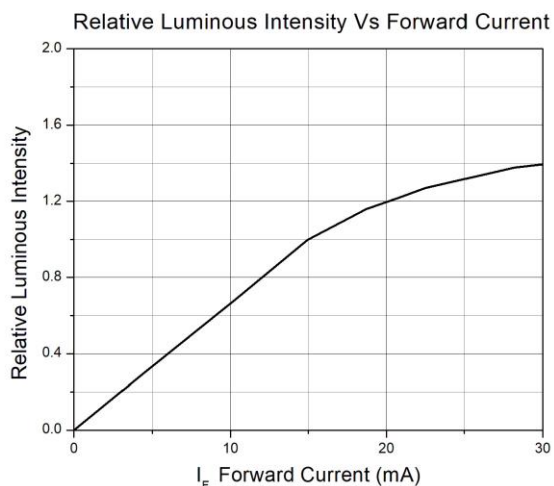


Figure 2

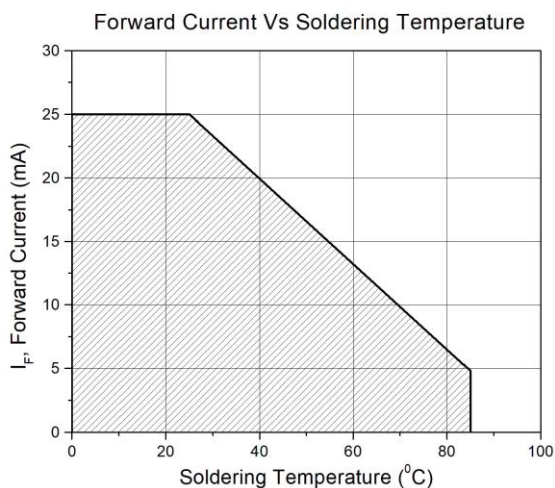


Figure 3

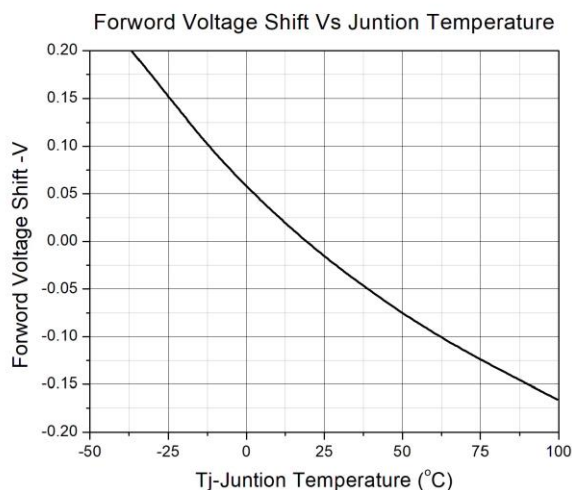


Figure 4

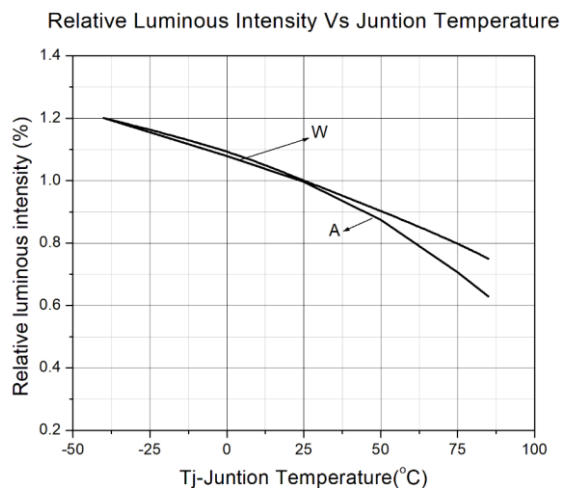


Figure 5

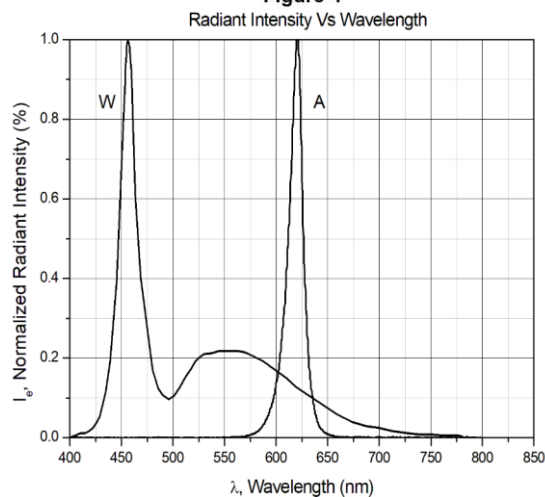
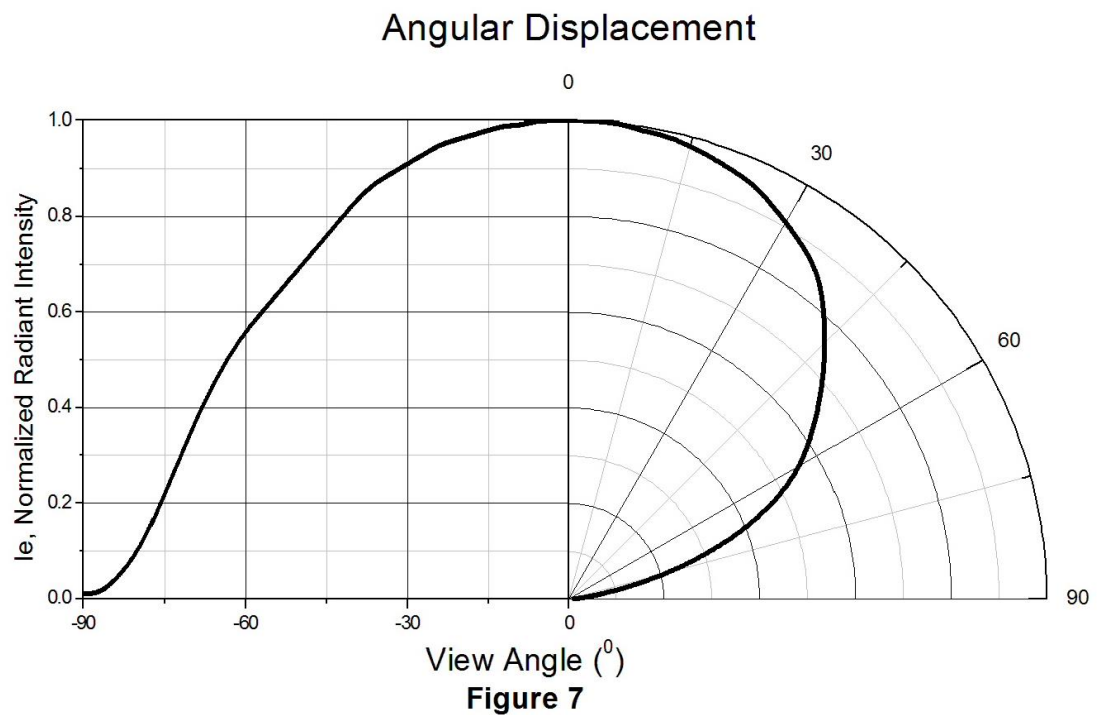


Figure 6

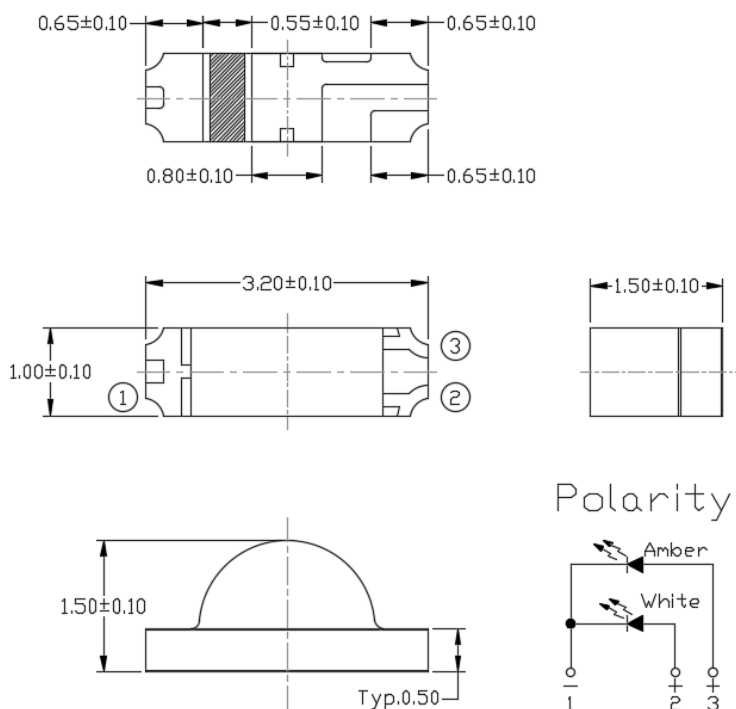


Typical Characteristic Curves



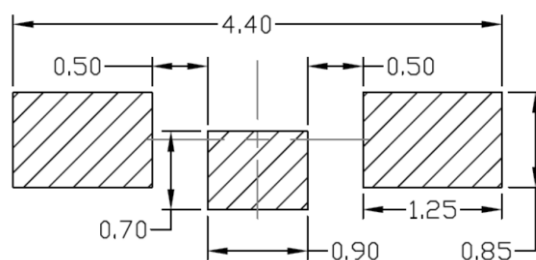


Package Dimension *All dimensions are in mm, unless otherwise stated*



Note: Tolerance unless mentioned is ± 0.1 mm.

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



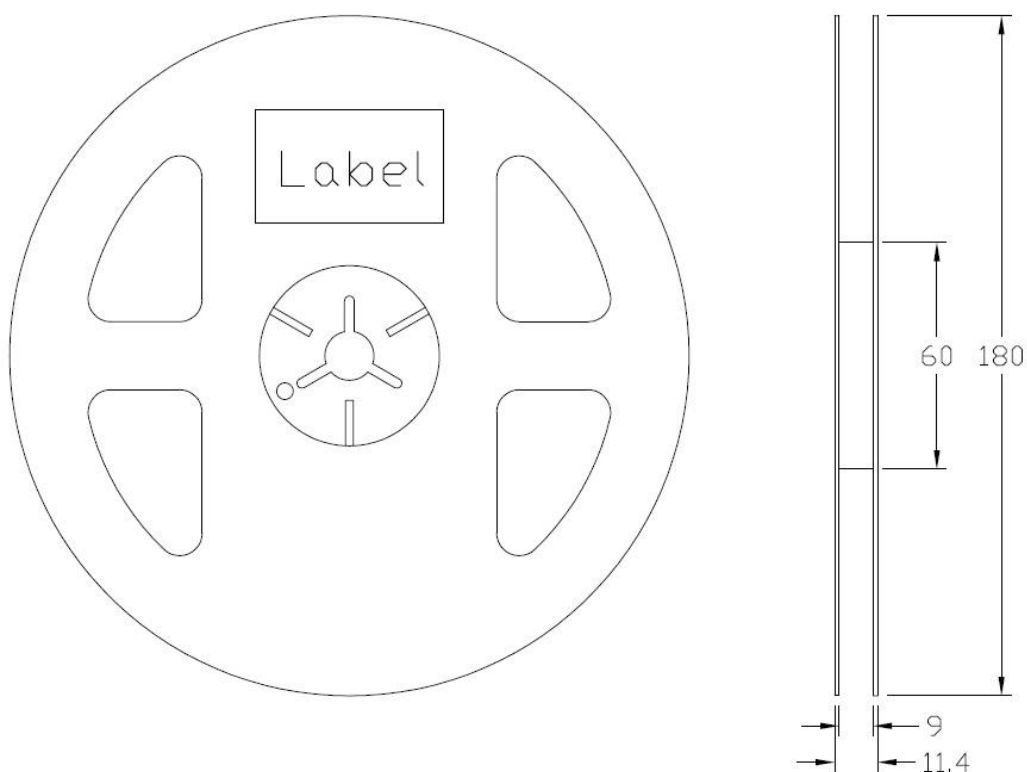
Note: Tolerance unless mentioned is ± 0.1 mm.

Ordering Information

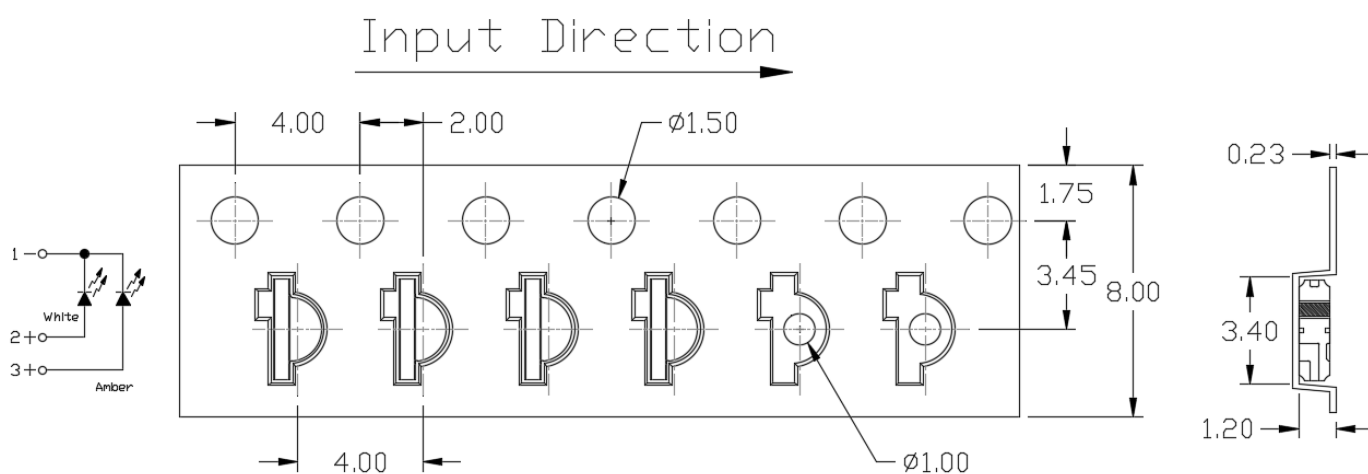
Part Number	Description	Quantity
WAP321015-NCSC2	Tape & Reel	2000 pcs



Reel Dimension *All dimensions are in mm, unless otherwise stated*



Tape Dimension *All dimensions are in mm, unless otherwise stated*



Note: Tolerance unless mentioned is ± 0.1 mm.



Label Form Specification

CT Micro
International Corporation

MSL-X
MADE IN CHINA

CPN: XXXXXXXXXXXXXXXXXX
|||||

Part no: XXXXXXXXXXXXXXXX
|||||

Serial no: XXXXXXXXX
|||||

Lot no: XXXXXXXXX
|||||

Qty: XXXXXX Date Code: YWWJ
||||| |||||

IV: XX WD:XX VF:XX
||||| ||||| |||||

QR Code

Pb
RoHS

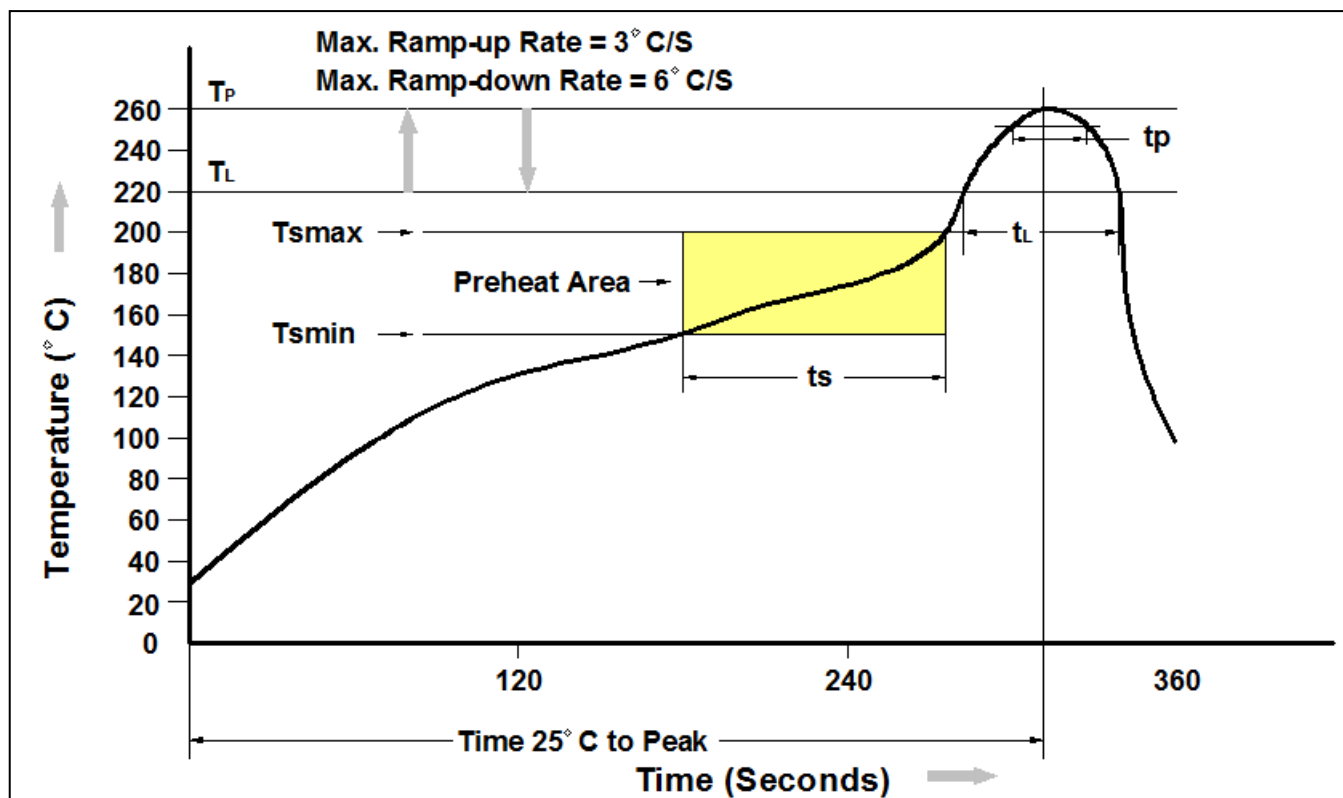
CPN : Customer Part Number
Part no: CTM Production Number
Serial no: Production Number
Lot no: Lot number
Q'ty: Packing Quantity
Date Code: Manufacture Date
IV : Bin Code of Luminous Intensity
WD : Bin Code of Dominant Wavelength
VF : Bin Code of Forward Voltage
MADE IN CHINA: Production Place

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.



Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T_{smin})	150°C
Temperature Max. (T_{smax})	200°C
Time (t_s) from (T_{smin} to T_{smax})	60-120 seconds
Ramp-up Rate (t_L to t_P)	3°C/second max.
Liquidous Temperature (T_L)	217°C
Time (t_L) Maintained Above (T_L)	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time (t_P) within 5°C of 260°C	30 seconds
Ramp-down Rate (T_P to T_L)	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.



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