



# GRP161504-DTC2

## Dual Wavelength SMD Type Emitter

### Features

- Top view 1615 package
- Viewing Angle =  $\pm 65^\circ$
- Compatible with infrared and vapor phase reflow solder process
- High reliability
- Dual dominant wavelength (G=532nm , R=621nm)
- RoHS compliance

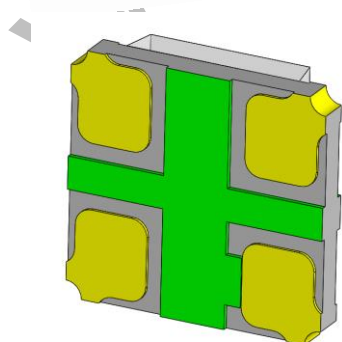
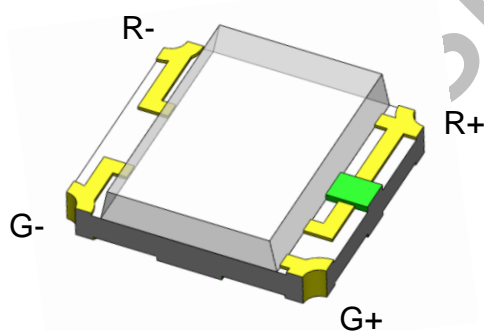
### Applications

- Optical indicator.
- Switch and Symbol Display.

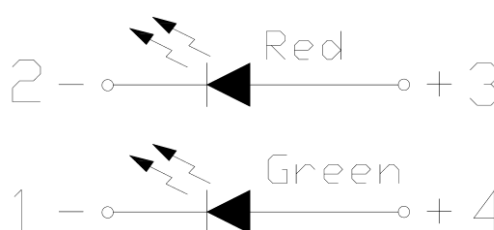
### Description

The GRP161504-DTC2 is a double LED housed in a miniature SMD package. The device has a dominant wavelength of 532nm and 621nm LED.

### Package Outline



### Schematic



**Absolute Maximum Rating at 25°C**

Symbol	Parameters		Ratings	Units	Notes
I <sub>F</sub>	Continuous Forward Current	G	25	mA	
		R	25		
I <sub>FP</sub>	Peak Forward Current	G	100	mA	1
		R	60		
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	G	95	mW	
		R	60		

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

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I <sub>v</sub>	Luminous Intensity	I <sub>F</sub> =2mA	90	-	225	mcd	3
λ <sub>d</sub>	Dominant Wavelength	I <sub>F</sub> =2mA	525	532	540	nm	4
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =2mA	-	±65	-	deg	

**Electrical Characteristics**

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =2mA	2.3	-	2.9	V	
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V	-	-	1	μA	

**Optical Characteristics (Red)**

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I <sub>v</sub>	Luminous Intensity	I <sub>F</sub> =2mA	11.5	-	28.5	mcd	3
λ <sub>d</sub>	Dominant Wavelength	I <sub>F</sub> =2mA	615	621	625	nm	
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =2mA	-	±65	-	deg	

**Electrical Characteristics**

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =2mA	1.6	-	2.1	V	
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

Green				
Bin Code	Min	Max	Unit	Condition
QA	90	140	mcd	I <sub>F</sub> =2mA
RA	140	225		
Red				
L	11.5	18.0	mcd	I <sub>F</sub> =2mA
M	18.0	28.5		

Tolerance of: Luminous Intensity ±10%

4. Bin Range of Dominant Wavelength

Green				
Bin Code	Min	Max	Unit	Condition
A6	525	530	nm	I <sub>F</sub> =2mA
A7	530	535		
A8	535	540		

Tolerance of Dominant Wavelength: ±1nm.

Tolerance of Forward Voltage ±0.1V.



### Typical Characteristic Curves

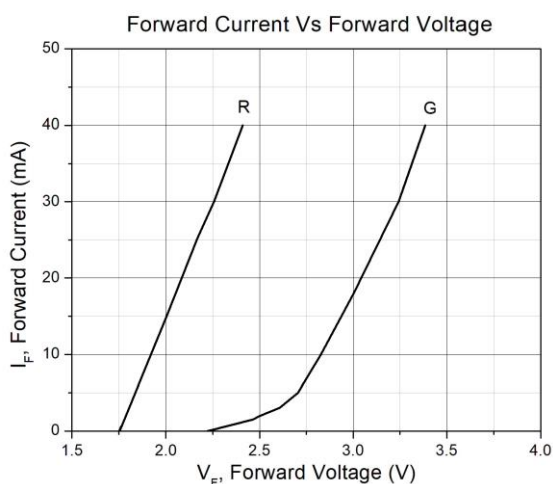


Figure 1

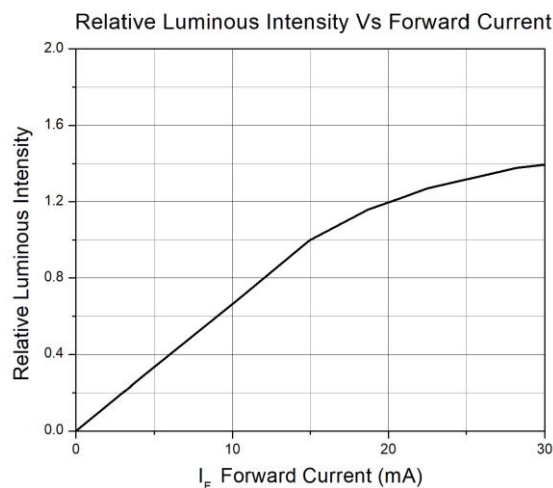


Figure 2

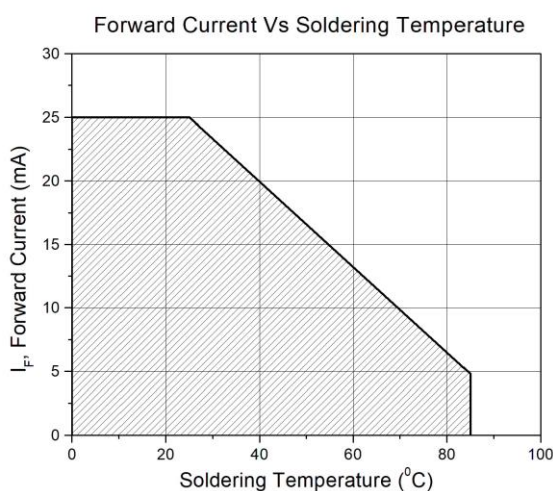


Figure 3

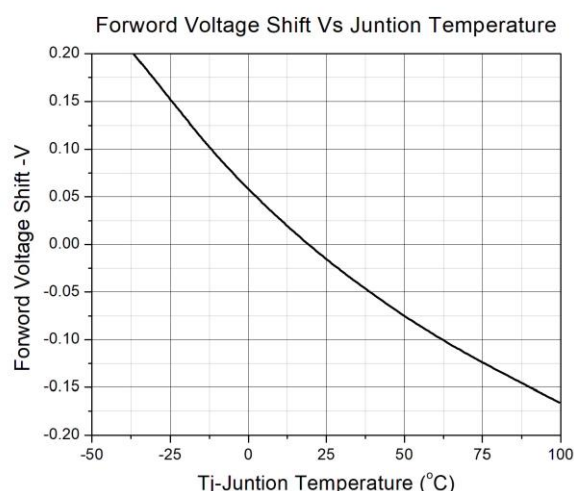


Figure 4

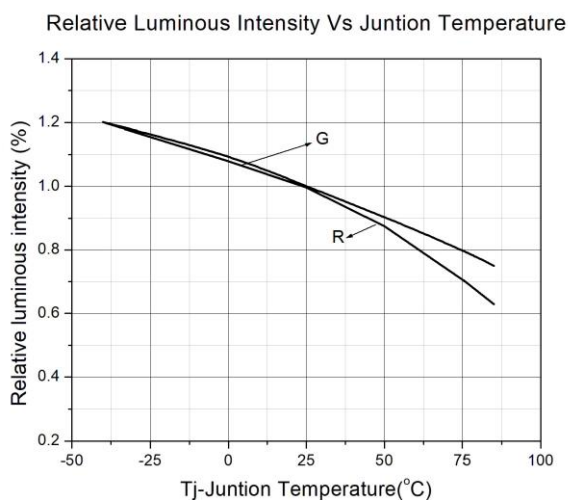


Figure 5

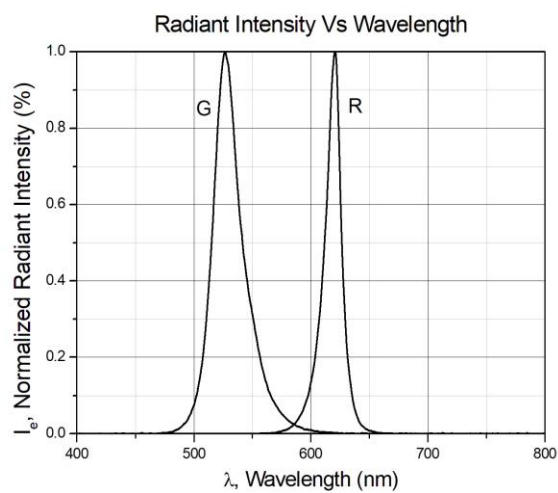


Figure 6



Typical Characteristic Curves

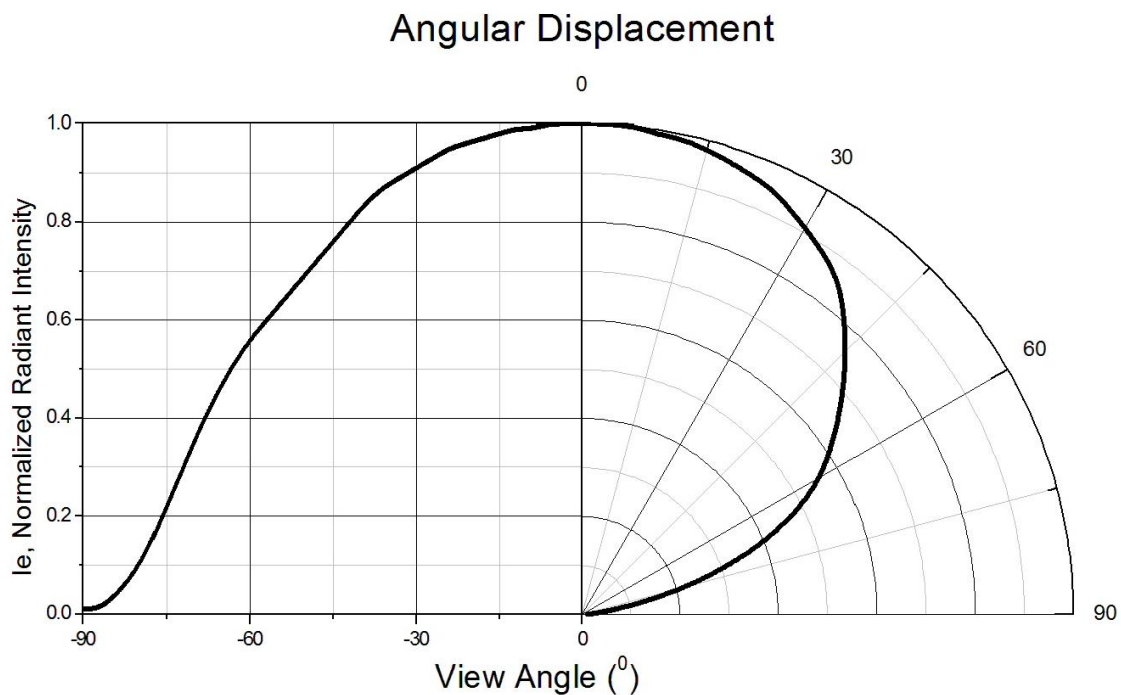
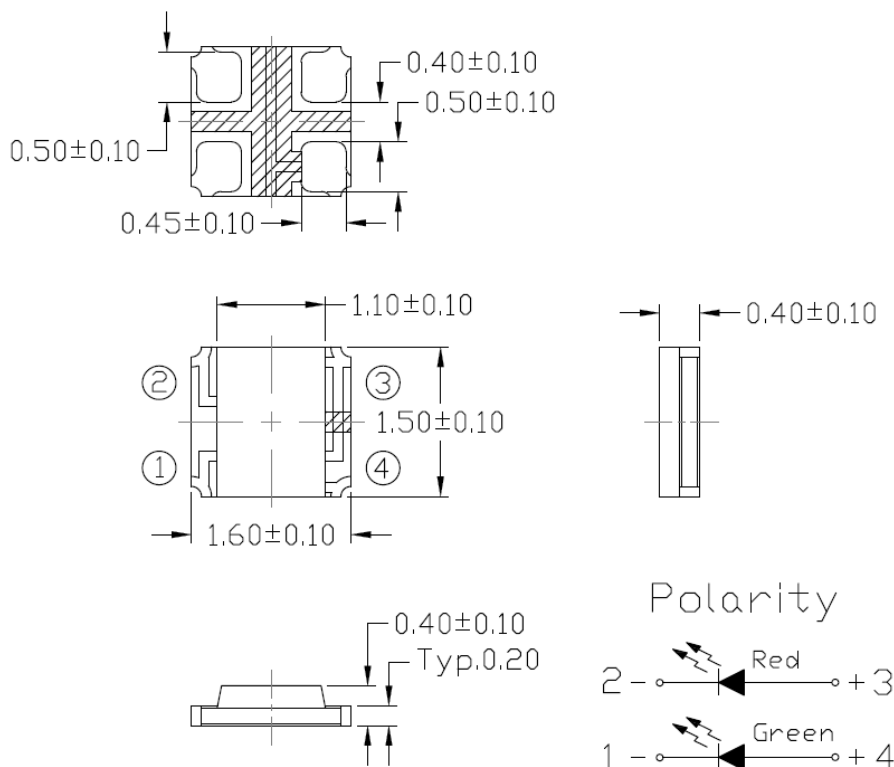


Figure 7

WWW.SIC

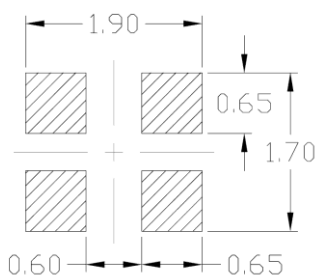


**Package Dimension** *All dimensions are in mm, unless otherwise stated*



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

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



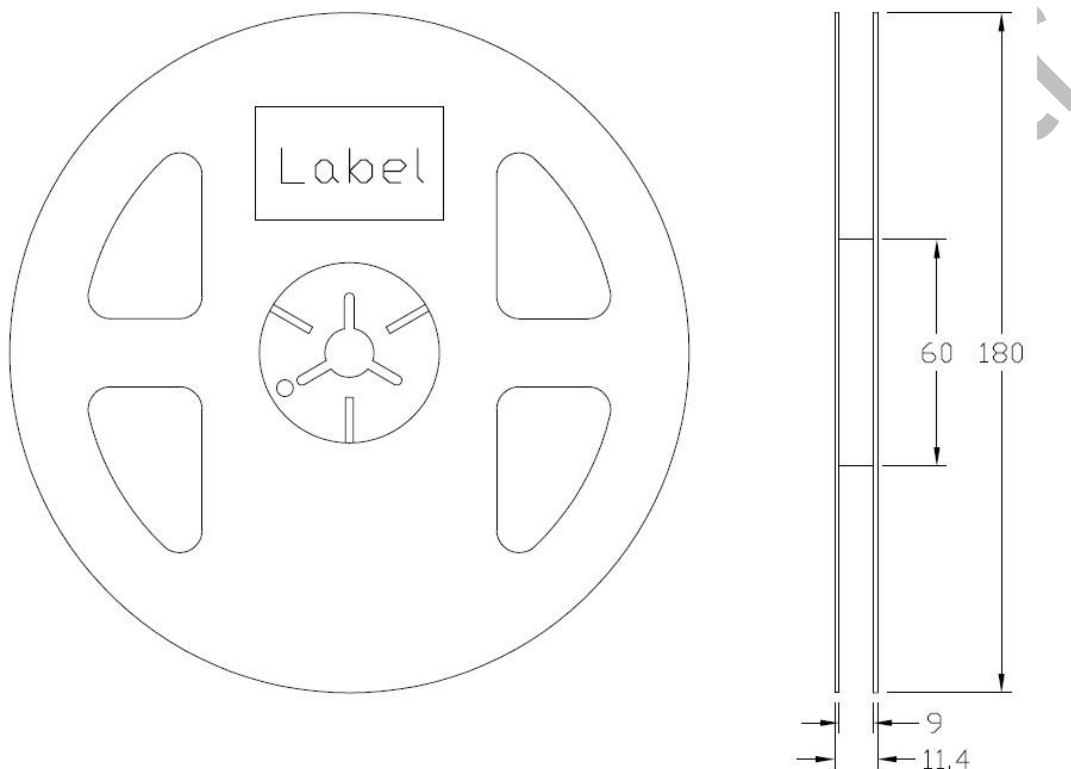
Note: Tolerance unless mentioned is  $\pm 0.1$ mm.

**Ordering Information**

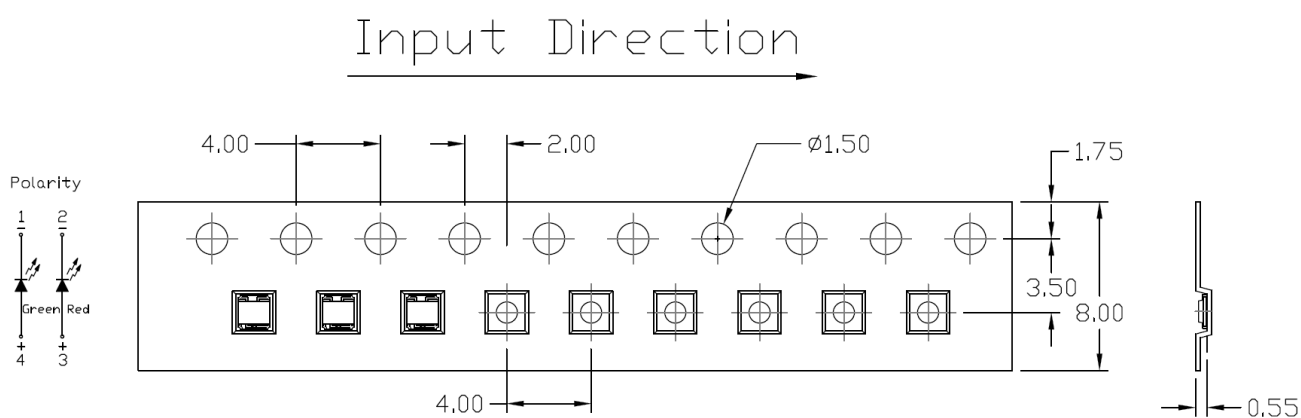
Part Number	Description	Quantity
GRP161504-DTC2	Tape & Reel	2000 pcs



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



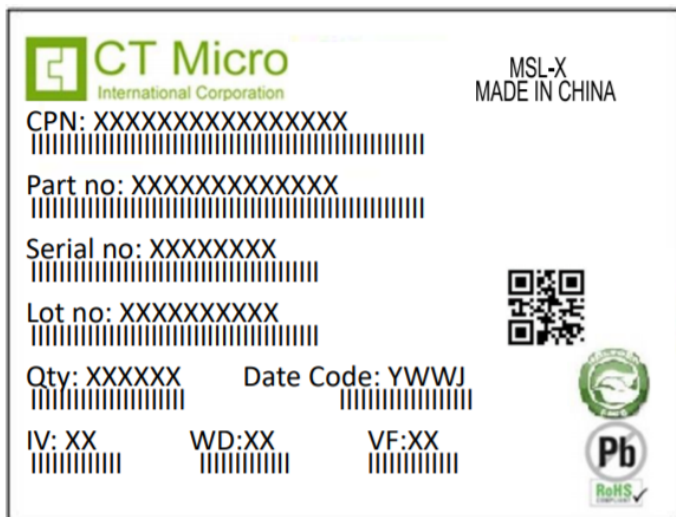
**Tape Dimension** *All dimensions are in mm, unless otherwise stated*



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



### 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  
 VF : Bin Code of Forward Voltage  
 MADE IN CHINA: Production Place

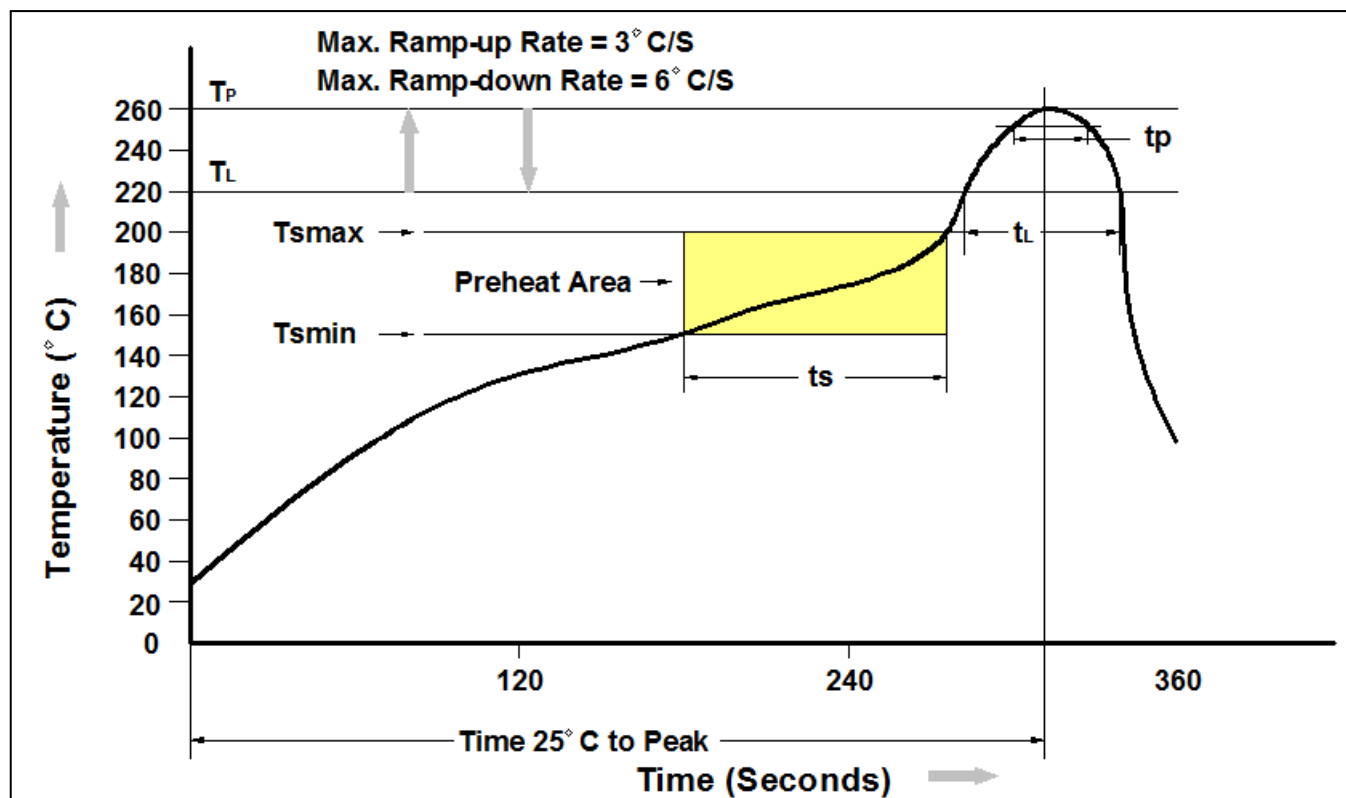
### Storage Condition

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. (Tsmín)	150°C
Temperature Max. (Tsmáx)	200°C
Time (ts) from (Tsmín to Tsmáx)	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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- 2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.*