



# BYRP161504-PBTC2

## Multi-Wavelength SMD Type

### Features

- Top view 1615 package
- Wide viewing angle
- RGB individual control
- High reliability
- RoHS compliance

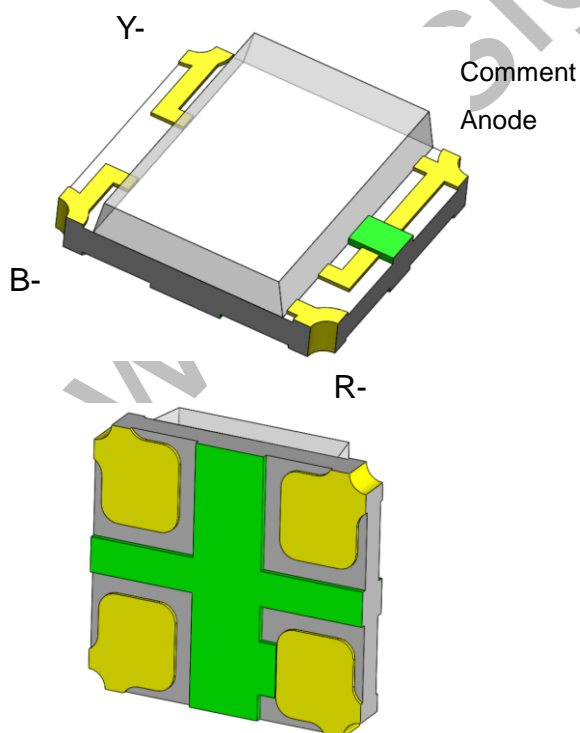
### Applications

- General lighting
- Indoor signage display applications
- Switch light
- Decorative and Entertainment lighting

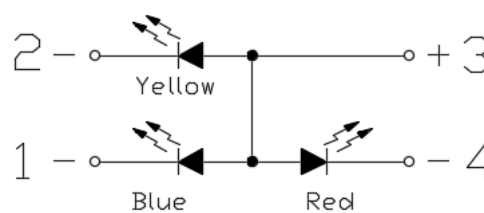
### Description

The BYRP161504-PBTC2 is a high brightness device designed for demanding applications in efficiency and reduced space. An ideal device in emphasizing visual effects, advertisement, decoration as well as general backlighting needs.

### Package Outline



### Schematic





## BYRP161504-PBTC2 Multi-Wavelength SMD Type

### Absolute Maximum Rating at 25°C

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

### Electro-Optical Characteristics *T<sub>A</sub> = 25°C (unless otherwise specified)*

#### Optical Characteristics (Blue)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I <sub>v</sub>	Luminous Intensity	I <sub>F</sub> =10mA	72	-	180	mcd	3
λ <sub>d</sub>	Dominant Wavelength	I <sub>F</sub> =10mA	465	-	475	nm	4
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =10mA	-	±65	-	deg	

#### Electrical Characteristics (Blue)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =10mA	2.7	-	3.3	V	
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V	-	-	10	μA	



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### Optical Characteristics (Yellow)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I <sub>v</sub>	Luminous Intensity	I <sub>F</sub> =10mA	45	-	112	mcd	3
λ <sub>d</sub>	Dominant Wavelength	I <sub>F</sub> =10mA	-	589	-	nm	
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =10mA	-	±65	-	deg	

### Electrical Characteristics (Yellow)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =10mA	1.8	-	2.3	V	
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V	-	-	10	μA	

### Optical Characteristics (Red)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I <sub>v</sub>	Luminous Intensity	I <sub>F</sub> =10mA	57	-	140	mcd	3
λ <sub>d</sub>	Dominant Wavelength	I <sub>F</sub> =10mA	-	622	-	nm	
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =10mA	-	±65	-	deg	

### Electrical Characteristics (Red)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =10mA	1.8	-	2.3	V	
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V	-	-	10	μA	

#### Notes:

1. I<sub>FP</sub> Conditions--Pulse Width ≤ 100μs and Duty ≤ 10%.
2. Soldering time ≤ 10 seconds.



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### 3. Bin Range of Luminous Intensity

Blue				
Bin Code	Min	Max	Unit	Condition
Q	72	112	mcd	I <sub>F</sub> =10mA
R	112	180		
Yellow				
P	45	72	mcd	I <sub>F</sub> =10mA
Q	72	112		
Red				
PA	57	90	mcd	I <sub>F</sub> =10mA
QA	90	140		

Tolerance of Luminous Intensity  $\pm 10\%$

### 4. Bin Range of Dominant Wavelength

Blue				
Bin Code	Min	Max	Unit	Condition
A6	465	470	nm	I <sub>F</sub> =10mA
A7	470	475		

Tolerance of Dominant Wavelength:  $\pm 1\text{nm}$ .



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## Multi-Wavelength SMD Type

### Typical Characteristic Curves

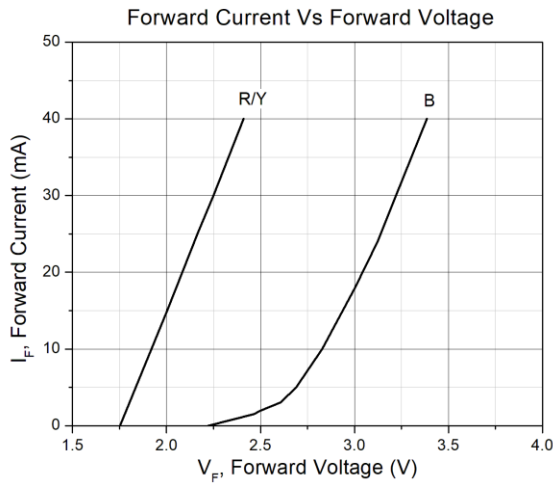


Figure 1

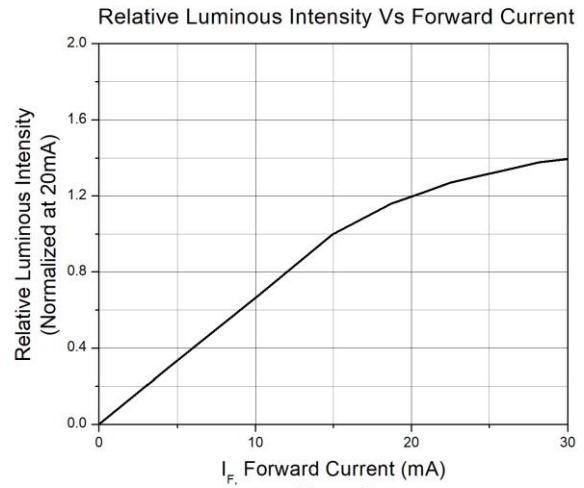


Figure 2

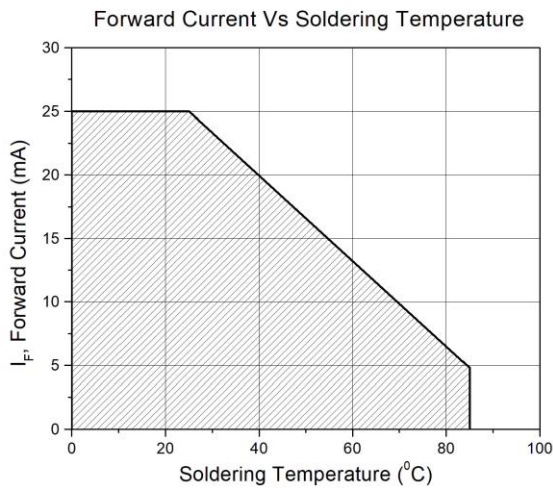


Figure 3

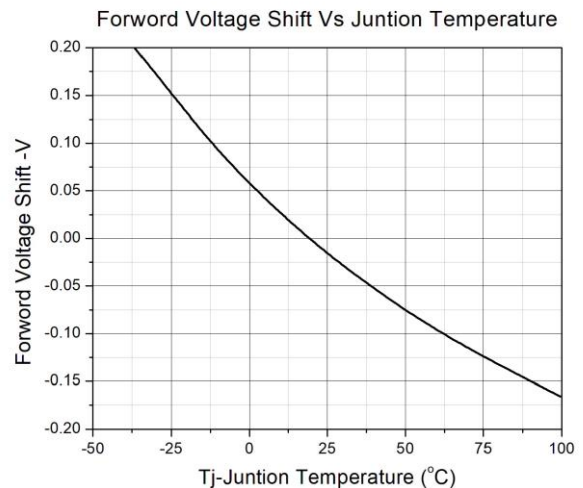


Figure 4

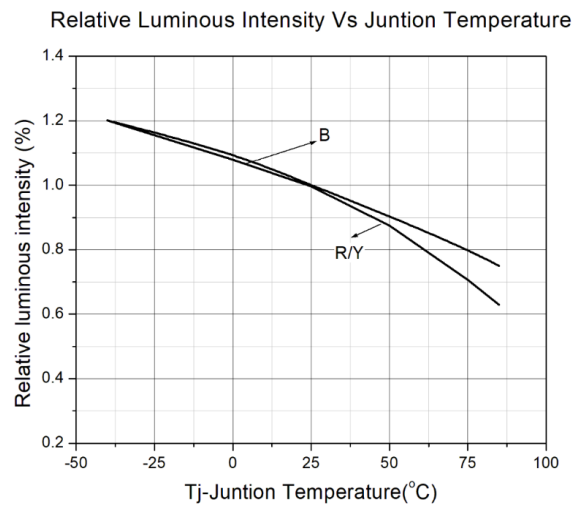


Figure 5

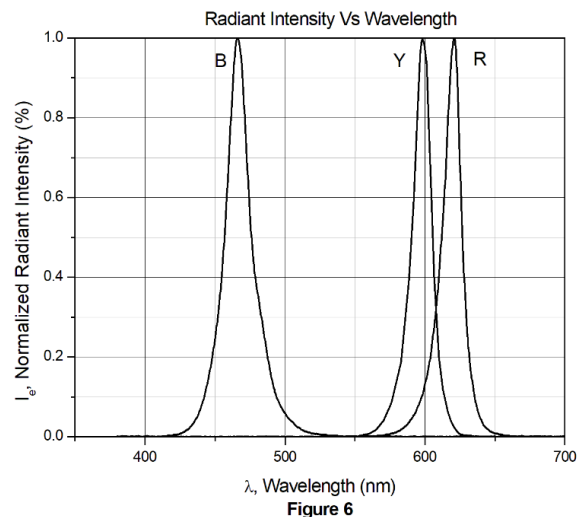


Figure 6



## Typical Characteristic Curves

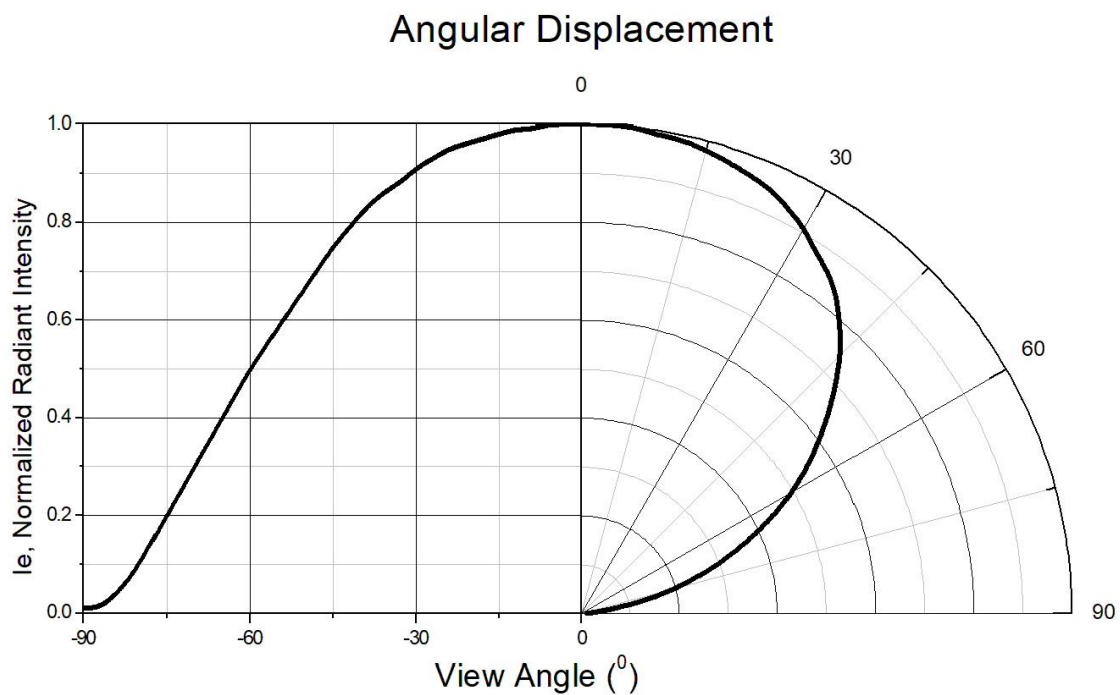


Figure 7

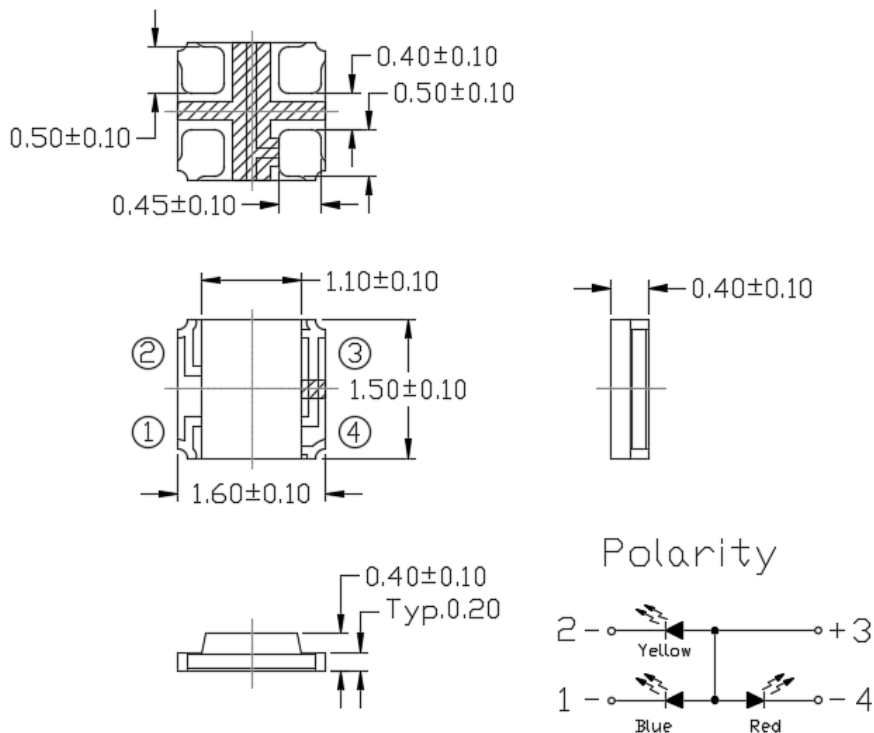
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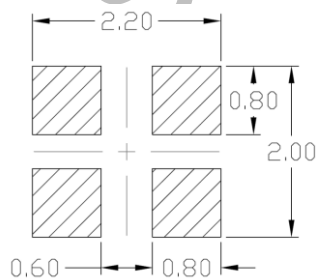
## Multi-Wavelength SMD Type

### 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

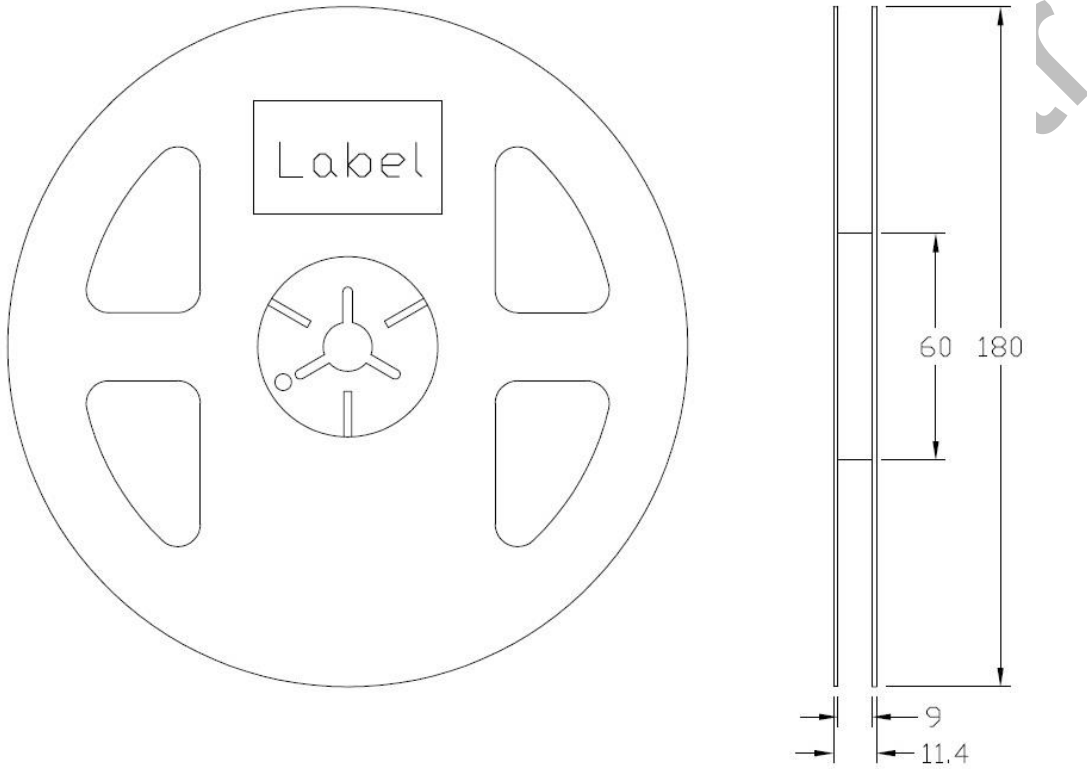
Part Number	Description	Quantity
BYRP161504-PBTC2	Tape & Reel	2000 pcs



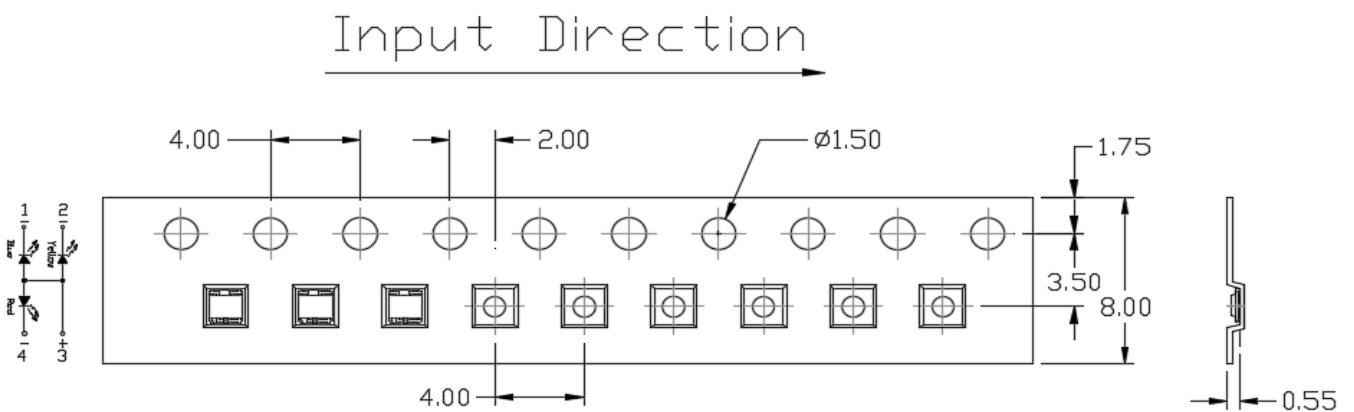
# BYRP161504-PBTC2

## Multi-Wavelength SMD Type

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



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

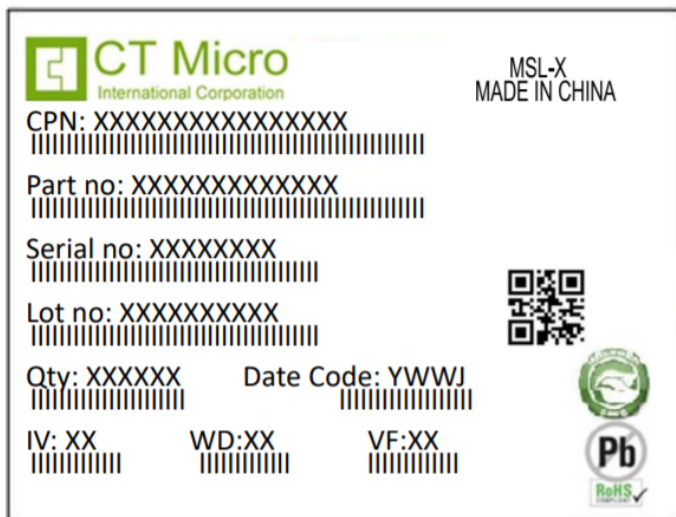


Note: Tolerance unless mentioned is  $\pm 0.1$ mm





### 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

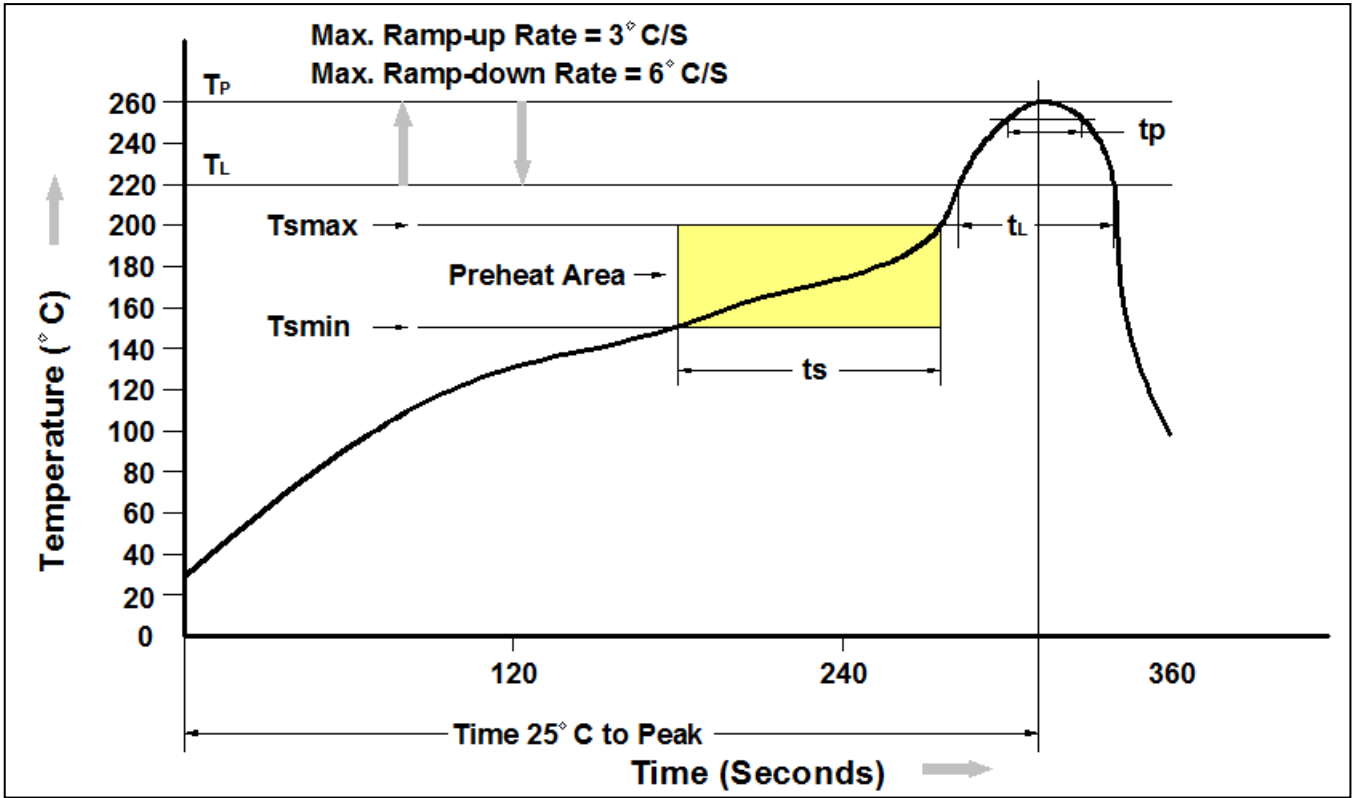
1. Do not open moisture proof bag before the products are ready to use.
2. The moisture barrier bag should be stored at 30°C and 90%R.H. max. before opening.  
Shelf life of non-opened bag is 12 months after the bag sealing date.
3. After opening the moisture barrier bag floor life is 1 year at 30°C/60%RH. 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.



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## Multi-Wavelength SMD Type

### Reflow Profile



Profile Feature	Pb-Free Assembly Profile
Temperature Min. (T <sub>sm</sub> )	150°C
Temperature Max. (T <sub>sm</sub> )	200°C
Time (t <sub>s</sub> ) from (T <sub>sm</sub> to T <sub>sm</sub> )	60-120 seconds
Ramp-up Rate (t <sub>l</sub> to t <sub>p</sub> )	3°C/second max.
Liquidous Temperature (T <sub>l</sub> )	217°C
Time (t <sub>l</sub> ) Maintained Above (T <sub>l</sub> )	60 – 150 seconds
Peak Body Package Temperature	260°C +0°C / -5°C
Time (t <sub>p</sub> ) within 5°C of 260°C	30 seconds
Ramp-down Rate (T <sub>p</sub> to T <sub>l</sub> )	6°C/second max
Time 25°C to Peak Temperature	8 minutes max.



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