



## BRGC545016-ATC1

### Multi-Wavelength SMD Type

#### Features

- Top view 5050 package
- Wide viewing angle
- RGB individual control
- High reliability
- RoHS compliance

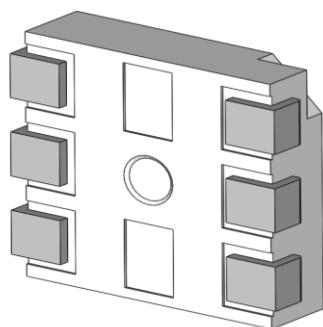
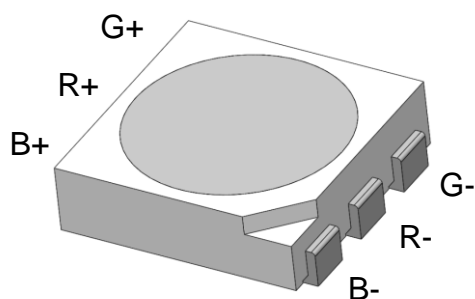
#### Applications

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

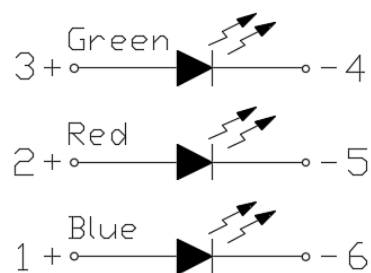
#### Description

The BRGC545016-ATC1 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





# BRGC545016-ATC1

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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	B	95	mW	
		R	60		
		G	95		

### Electro-Optical Characteristics *TA = 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> =20mA	400	-	600	mcd	
λ <sub>d</sub>	Dominant Wavelength	I <sub>F</sub> =20mA	465	-	470	nm	
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =20mA	-	±60	-	deg	

#### Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =20mA	2.8	-	3.4	V	
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V	-	-	1	μA	



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### Optical Characteristics(Red)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I <sub>v</sub>	Luminous Intensity	I <sub>F</sub> =20mA	600	-	800	mcd	
λ <sub>d</sub>	Dominant Wavelength	I <sub>F</sub> =20mA	620	-	625	nm	
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =20mA	-	±60	-	deg	

### Electrical Characteristics

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =20mA	1.8	-	2.4	V	
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V	-	-	1	μA	

### Optical Characteristics(Green)

Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
I <sub>v</sub>	Luminous Intensity	I <sub>F</sub> =20mA	1600	-	1800	mcd	
λ <sub>d</sub>	Dominant Wavelength	I <sub>F</sub> =20mA	515	-	525	nm	
θ <sub>1/2</sub>	Angle of Half Intensity	I <sub>F</sub> =20mA	-	±60	-	deg	

### Electrical Characteristics

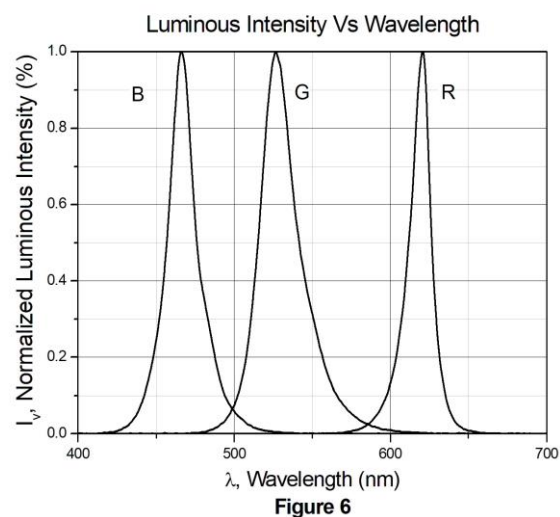
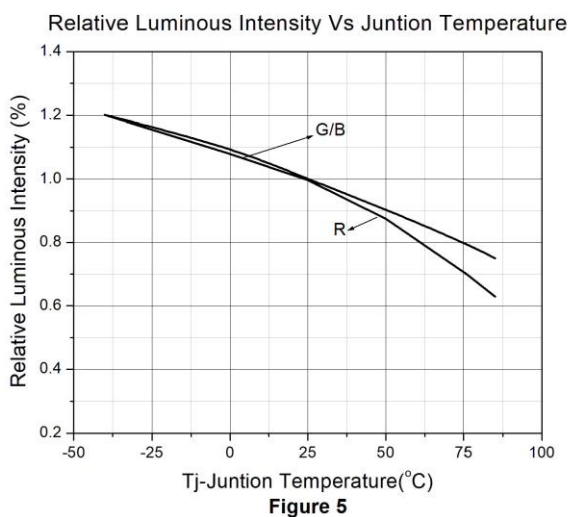
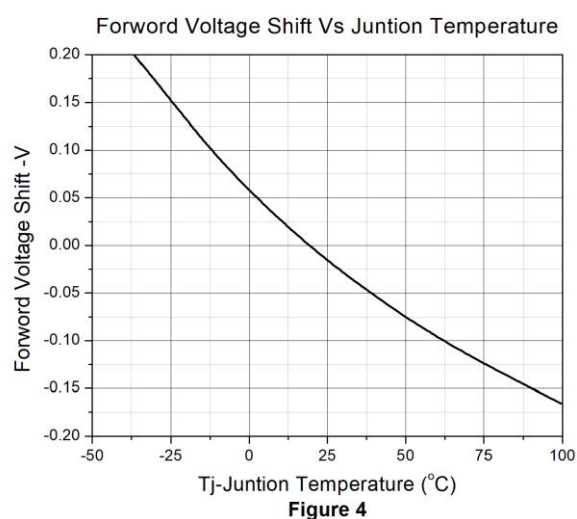
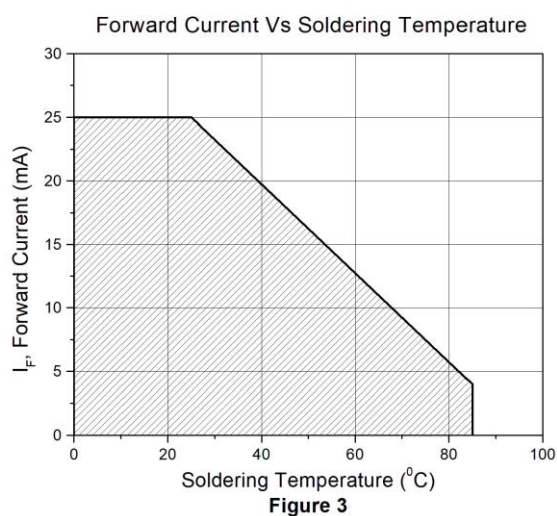
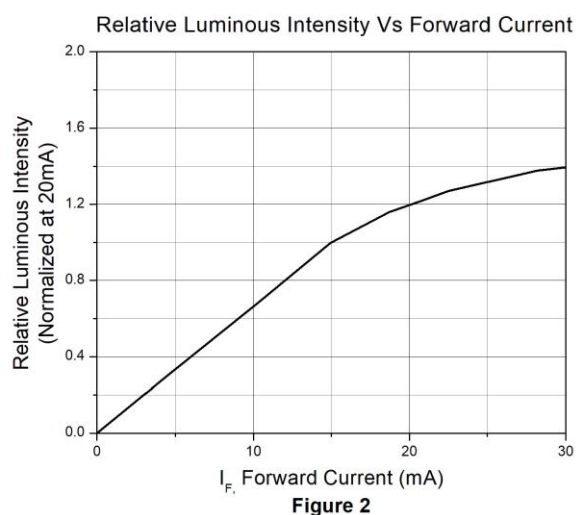
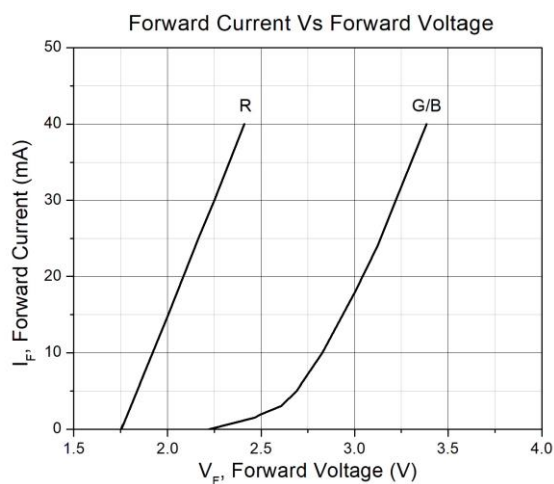
Symbol	Parameters	Test Conditions	Min	Typ	Max	Units	Notes
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> =20mA	2.8	-	3.4	V	
I <sub>R</sub>	Reverse Current	V <sub>R</sub> =5V	-	-	1	μA	

#### Notes:

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

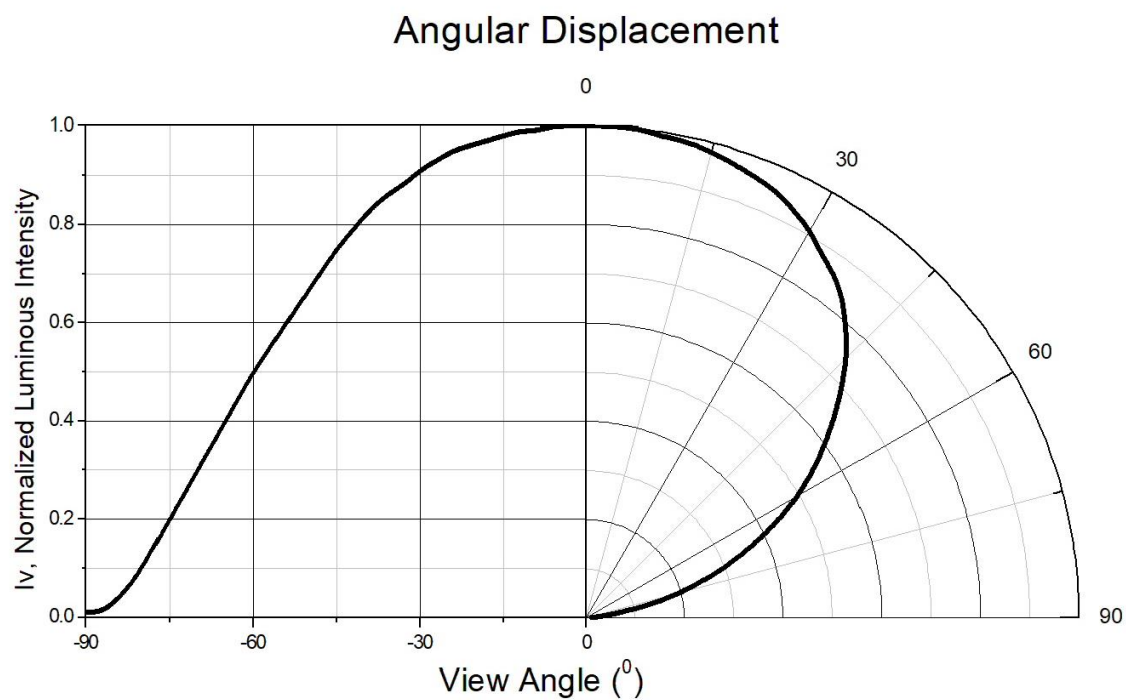


## Typical Characteristic Curves





## Typical Characteristic Curves

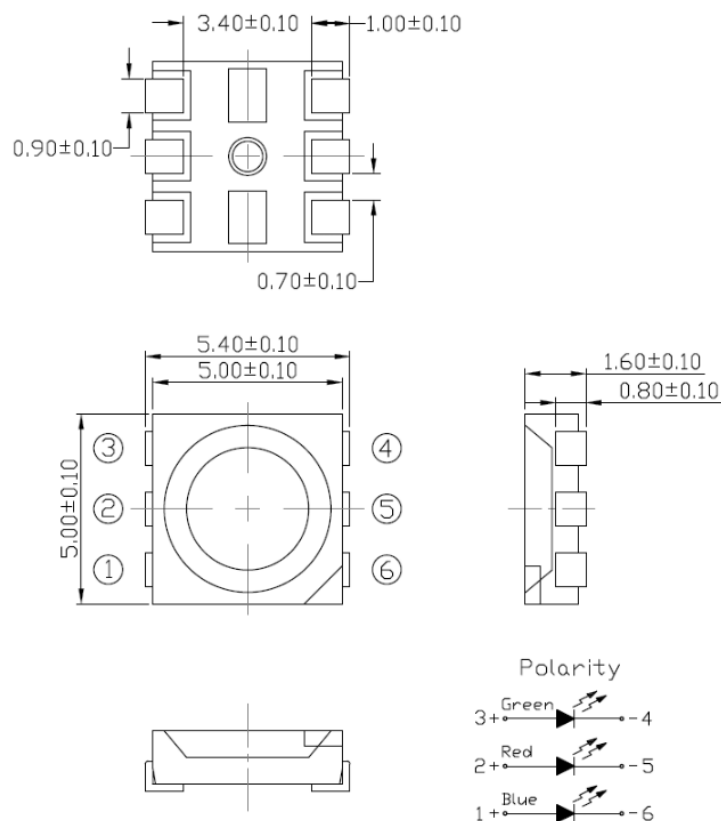




# BRGC545016-ATC1

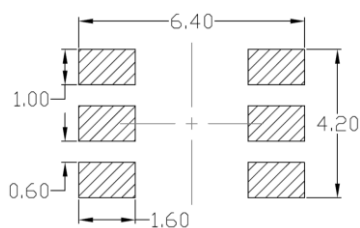
## Multi-Wavelength SMD Type

### 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*



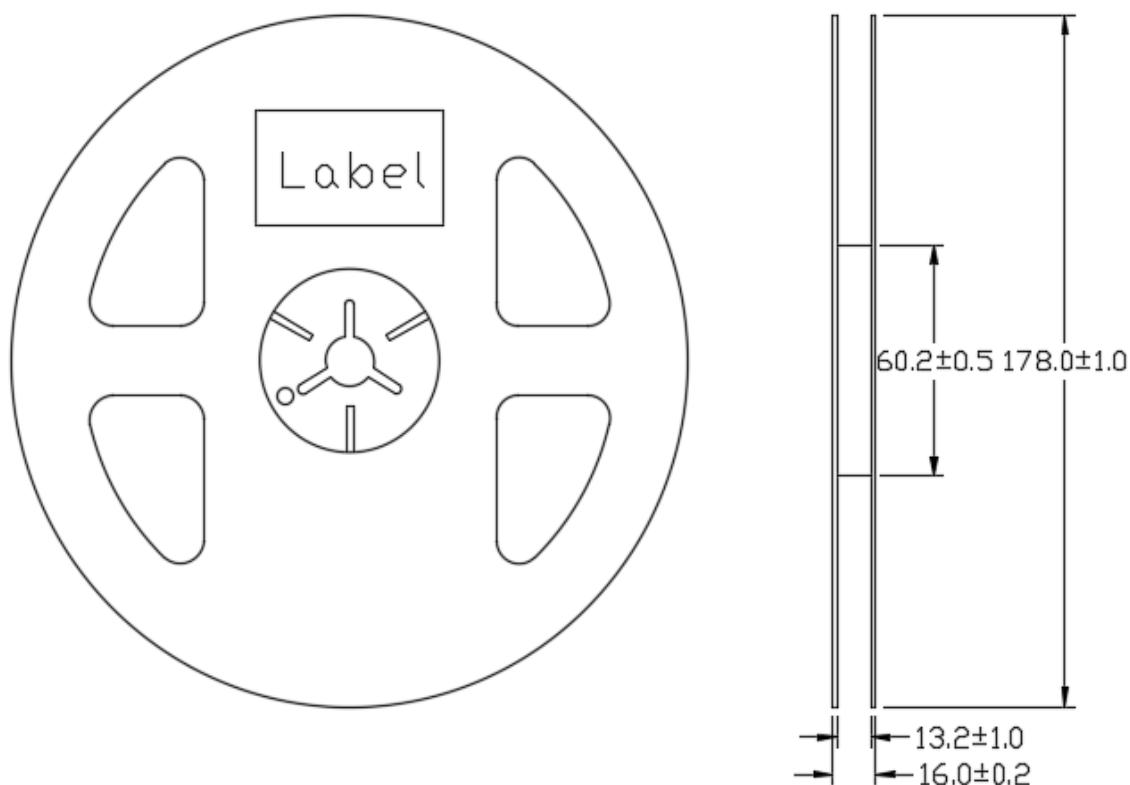
Note: Tolerance unless mentioned is  $\pm 0.1$ mm.

### Ordering Information

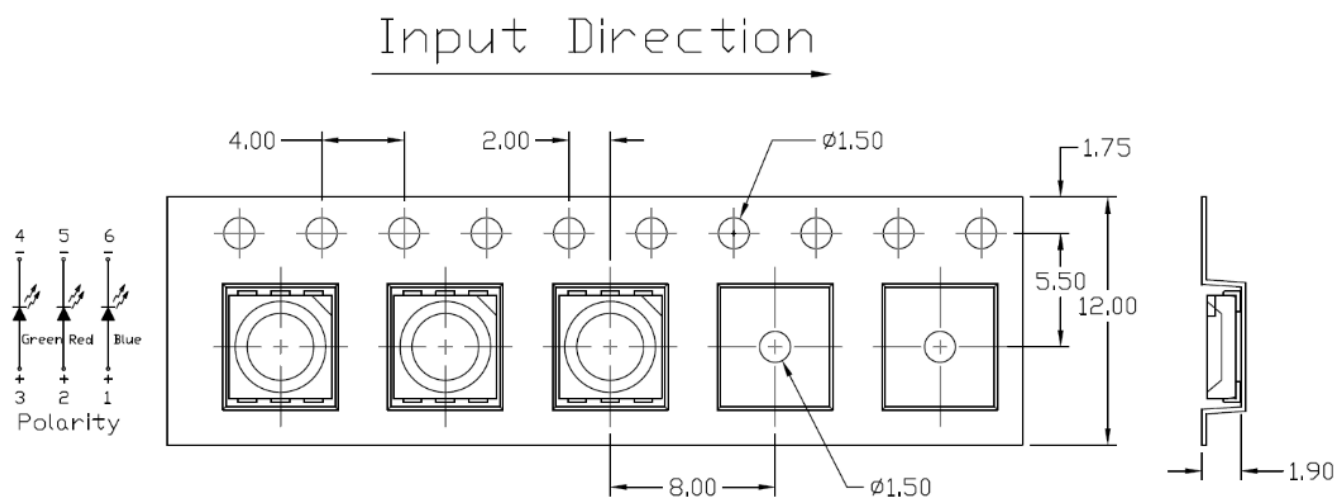
Part Number	Description	Quantity
BRGC545016-ATC1	Tape & Reel	5000 pcs



**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

MSL-X  
MADE IN CHINA

CPN: XXXXXXXXXXXXXXXXX  
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

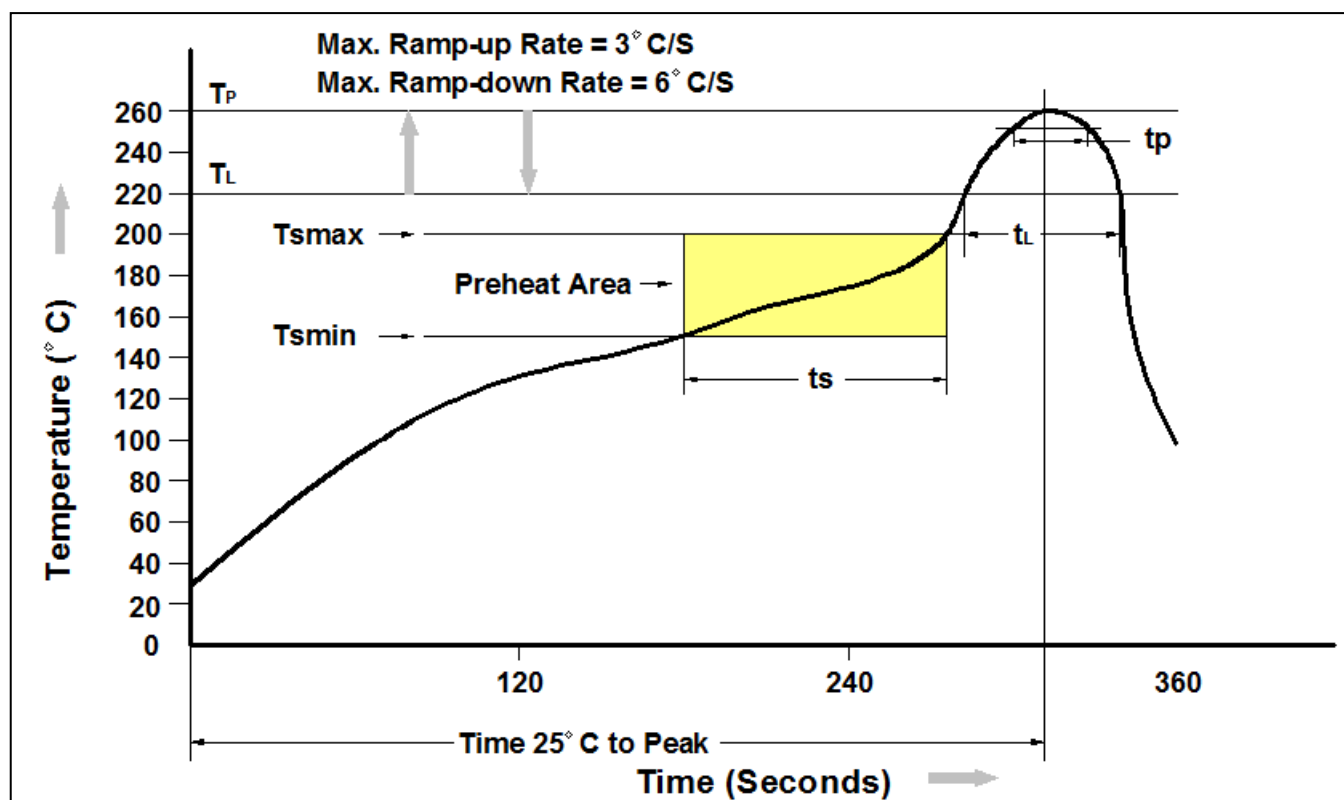
## Storage Condition

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 24h 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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