# BGRP201208-PCTC3

## Multi-Wavelength SMD Type

## Features

- Top view 0805 package
- Wide viewing angle
- BGR individual control
- High reliability
- RoHS compliance

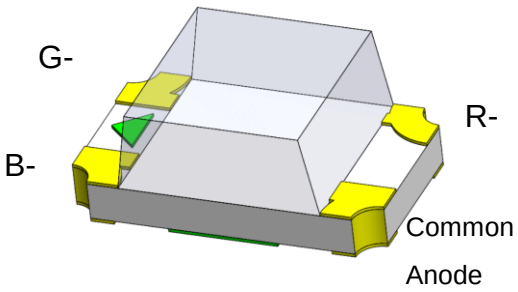
## Description

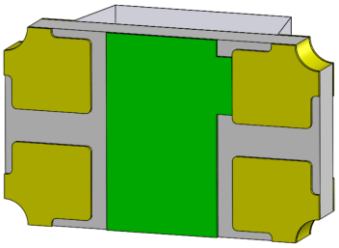
The BGRP201208-PCTC3 is a high brightness device designed for demanding applications in efficiency and reduced space. An ideal device in emphasizing visual effects, advertisement, decoration as well as general backlighting needs.

## Applications

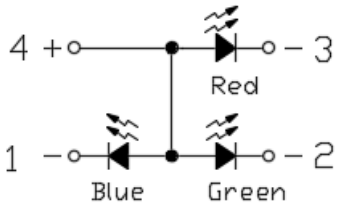
- Optical indicator.
- Switch and Symbol Display.

## Package Outline



## Schematic



## Absolute Maximum Rating at 25$^0$C

| *Symbol* | *Parameters* | *Ratings* | | *Units* | *Notes* |
|---|---|---|---|---|---|
| $I_F$ | Continuous Forward Current | 25 | | mA | |
| $I_{FP}$ | Peak Forward Current | 60 | | mA | 1 |
| $V_R$ | Reverse Voltage | 5 | | V | |
| $T_{opr}$ | Operating Temperature | -40 ~ +85 | | $^0$C | |
| $T_{stg}$ | Storage Temperature | -40 ~ +100 | | $^0$C | |
| $T_{sol}$ | Soldering Temperature | 260 | | $^0$C | 2 |
| $P_D$ | Power Dissipation at(or below) 25℃ Free Air Temperature | B | 95 | mW | |
| | | G | 95 | | |
| | | R | 60 | | |

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

### Optical Characteristics(Blue)

| *Symbol* | *Parameters* | *Test Conditions* | *Min* | *Typ* | *Max* | *Units* | *Notes* |
|---|---|---|---|---|---|---|---|
| Iv | Luminous Intensity | $I_F$=5mA | 36 | - | 90 | mcd | 3 |
| $\lambda_D$ | Dominant Wavelength | $I_F$=5mA | 465 | - | 475 | nm | 4 |
| θ1/2 | 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 | 2.4 | - | 3.1 | V | |
| $I_R$ | Reverse Current | $V_R$=5V | - | - | 1 | μA | |

## Optical Characteristics(Green)

| *Symbol* | *Parameters* | *Test Conditions* | *Min* | *Typ* | *Max* | *Units* | *Notes* |
|---|---|---|---|---|---|---|---|
| Iv | Luminous Intensity | $I_F$=5mA | 180 | - | 450 | mcd | 3 |
| $\lambda_D$ | Dominant Wavelength | $I_F$=5mA | 520 | - | 535 | nm | 4 |
| θ1/2 | 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 | 2.3 | - | 3.0 | V | |
| $I_R$ | Reverse Current | $V_R$=5V | - | - | 1 | μA | |

## Optical Characteristics(Red)

| *Symbol* | *Parameters* | *Test Conditions* | *Min* | *Typ* | *Max* | *Units* | *Notes* |
|---|---|---|---|---|---|---|---|
| Iv | Luminous Intensity | $I_F$=5mA | 14.5 | - | 36.0 | mcd | 3 |
| $\lambda_D$ | Dominant Wavelength | $I_F$=5mA | - | 633 | - | nm | |
| θ1/2 | Angle of Half Intensity | $I_F$=5mA | - | ±65 | - | deg | 4 |

## Electrical Characteristics

| *Symbol* | *Parameters* | *Test Conditions* | *Min* | *Typ* | *Max* | *Units* | *Notes* |
|---|---|---|---|---|---|---|---|
| $V_F$ | Forward Voltage | $I_F$=5mA | 1.6 | - | 2.1 | 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

| Blue | | | | |
|---|---|---|---|---|
| Bin Code | Min | Max | Unit | Condition |
| NA | 36 | 57 | mcd | $I_F$=5mA |
| PA | 57 | 90 | | |
| Green | | | | |
| S | 180 | 285 | mcd | $I_F$=5mA |
| T | 285 | 450 | | |
| Red | | | | |
| LA | 14.5 | 22.5 | mcd | $I_F$=5mA |
| MA | 22.5 | 36.0 | | |

Tolerance of: Luminous Intensity ±10%

4.Bin Range of Dominant Wavelength(Blue)

| Bin Code | Min | Max | Unit | Condition |
|---|---|---|---|---|
| A6 | 465 | 470 | nm | $I_F$=5mA |
| A7 | 470 | 475 | | |

5.Bin Range of Dominant Wavelength(Green)

| Bin Code | Min | Max | Unit | Condition |
|---|---|---|---|---|
| A5 | 520 | 525 | nm | $I_F$=5mA |
| A6 | 525 | 530 | | |
| A7 | 530 | 535 | | |

Tolerance of Dominant Wavelength: ±1nm.

## Typical Characteristic Curves

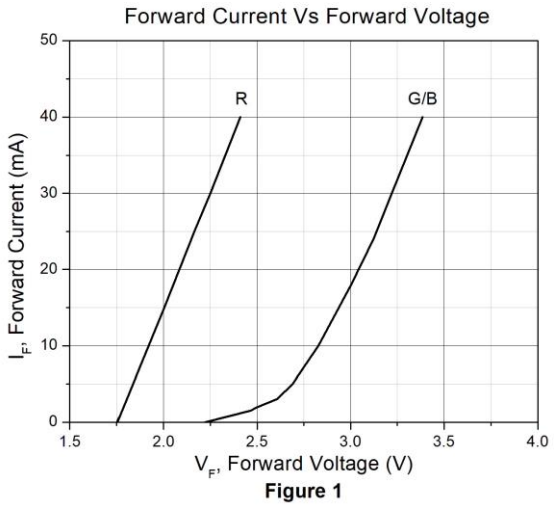


**Figure 1**

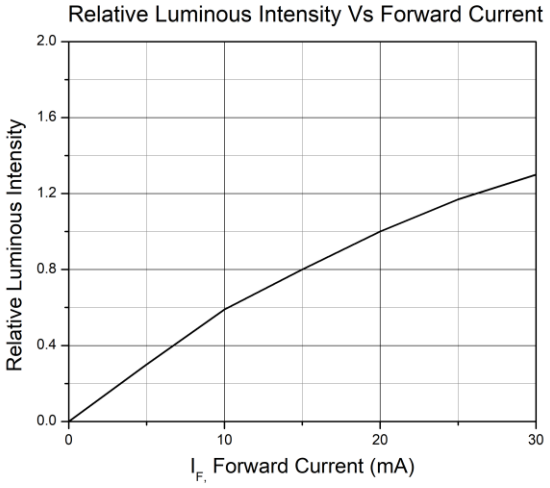


**Figure 2**

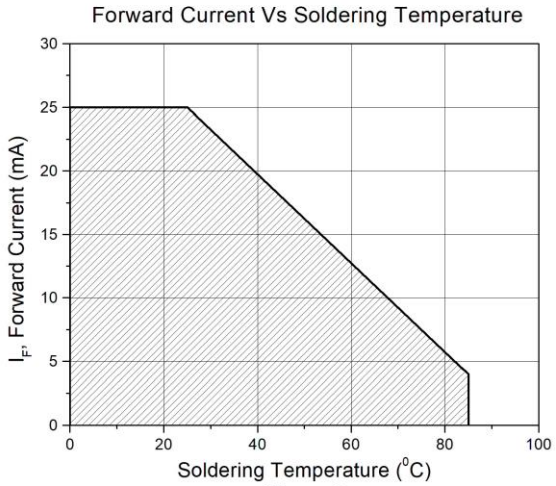


**Figure 3**

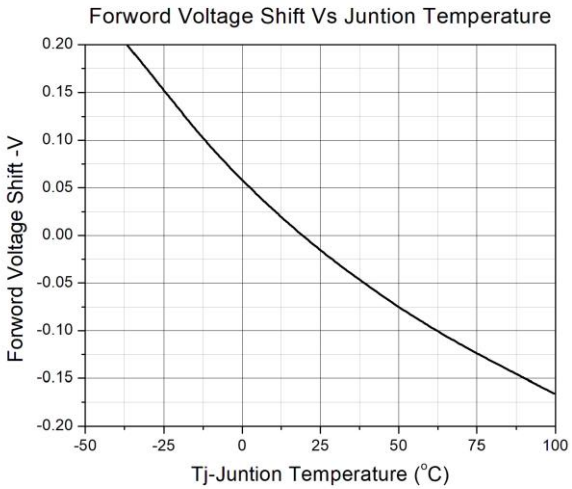


**Figure 4**

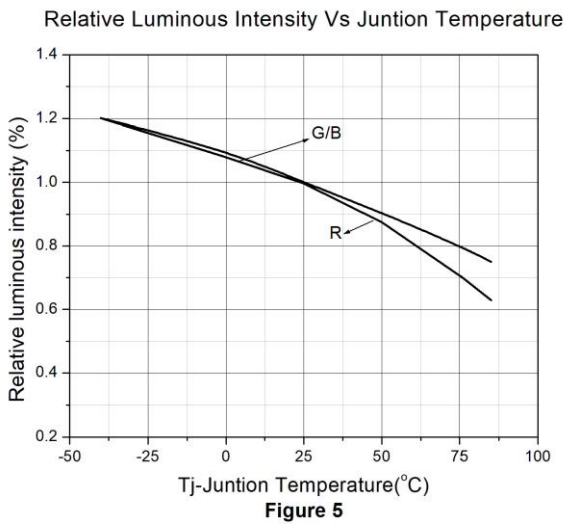


**Figure 5**

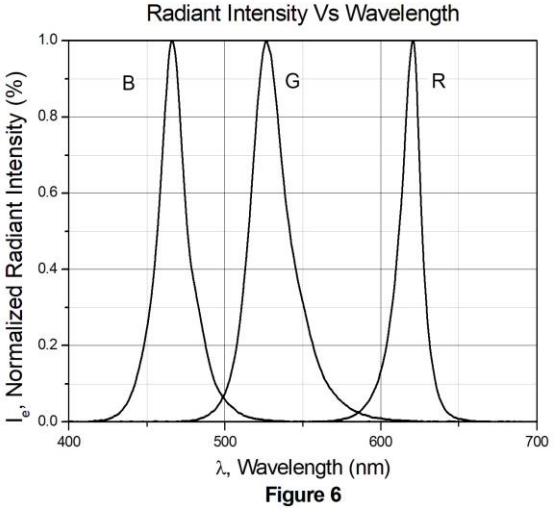


**Figure 6**

## Typical Characteristic Curves

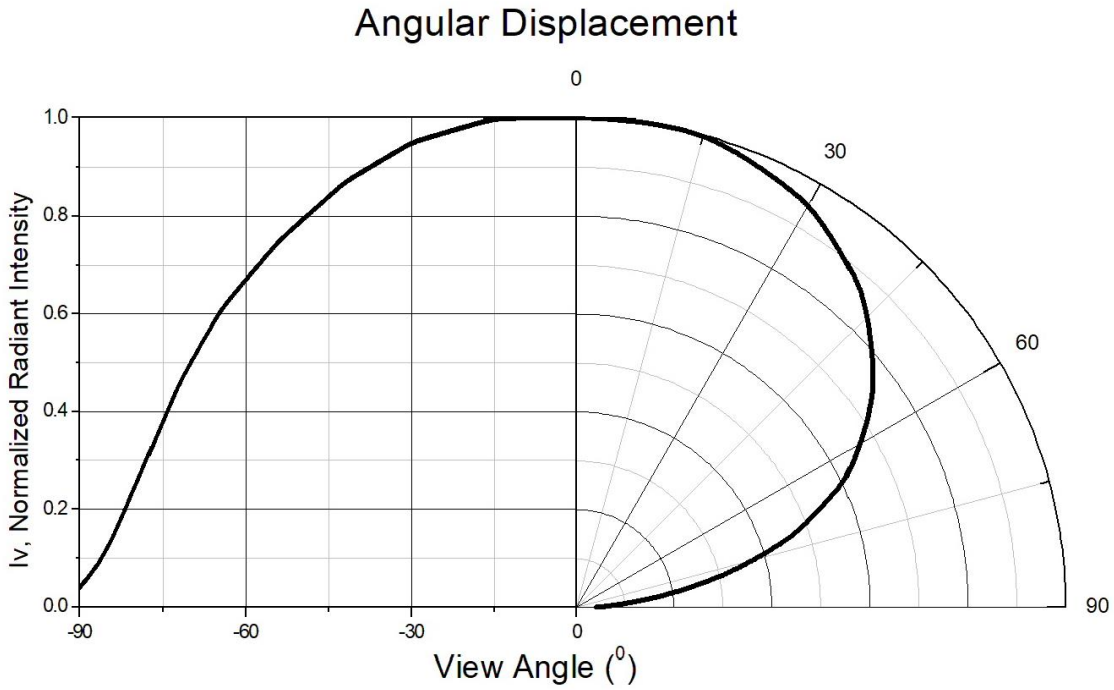
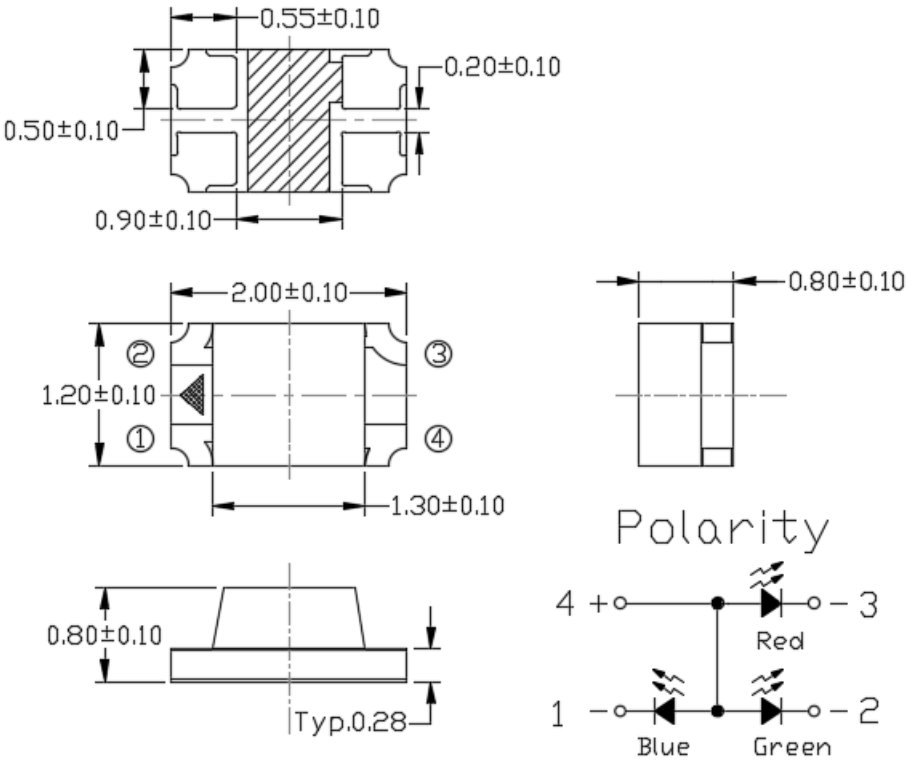


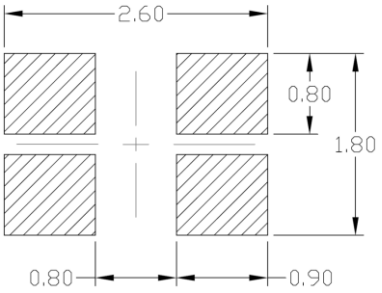

**Figure 7**

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




Note: Tolerance unless mentioned is ±0.1mm.

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

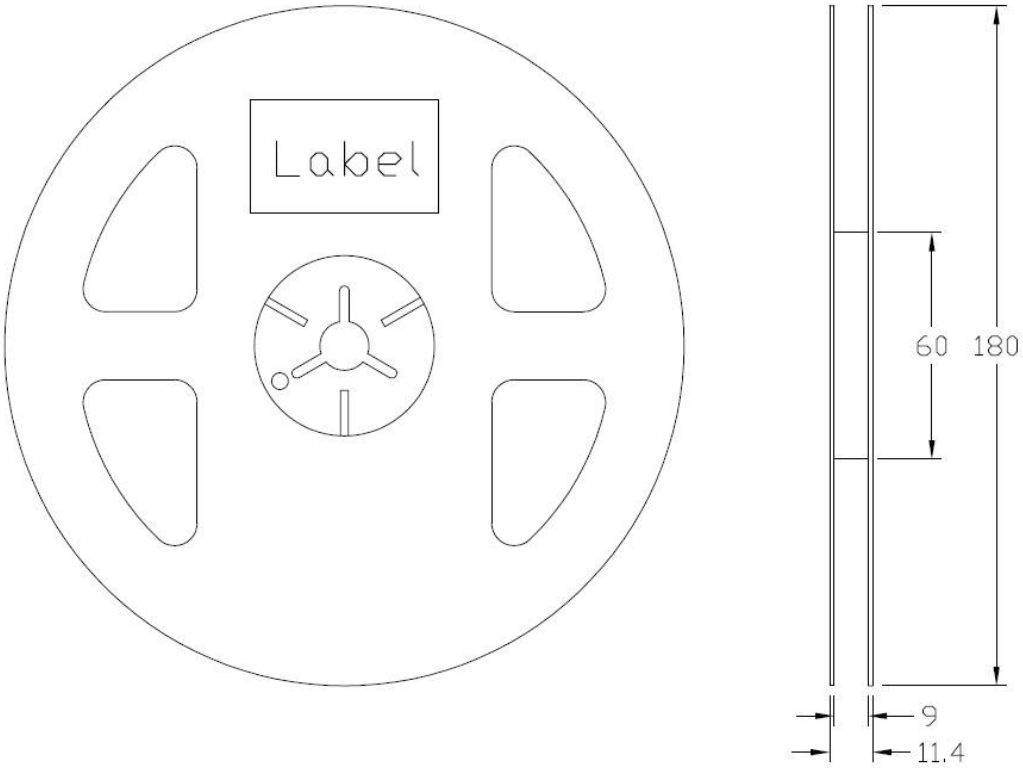



Note: Tolerance unless mentioned is ±0.1mm.

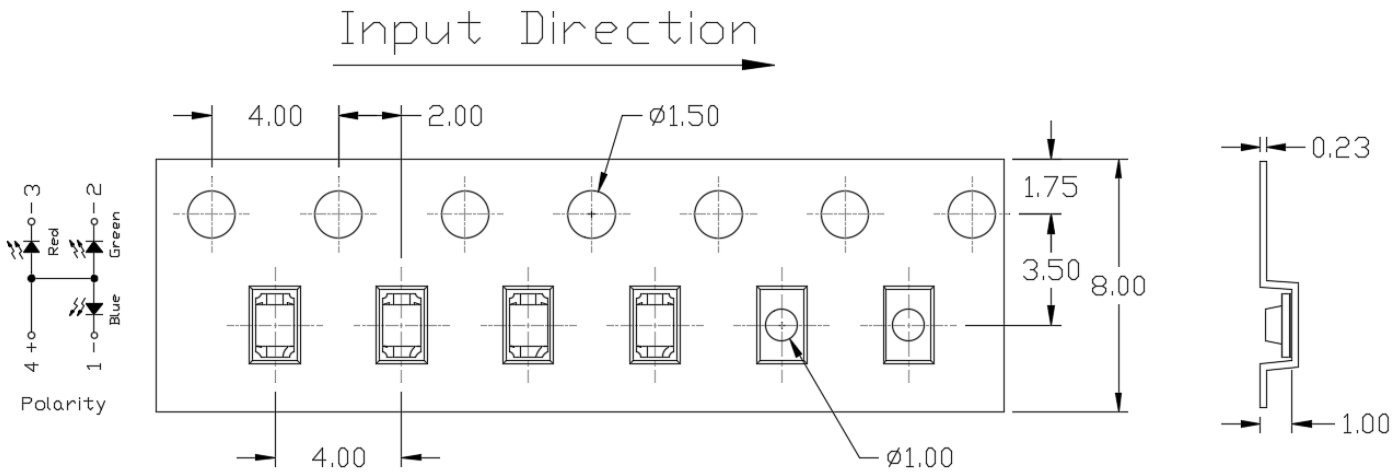
## Ordering Information

| *Part Number* | *Description* | *Quantity* |
|---|---|---|
| BGRP201208-PCTC3 | Tape & Reel | 3000 pcs |

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

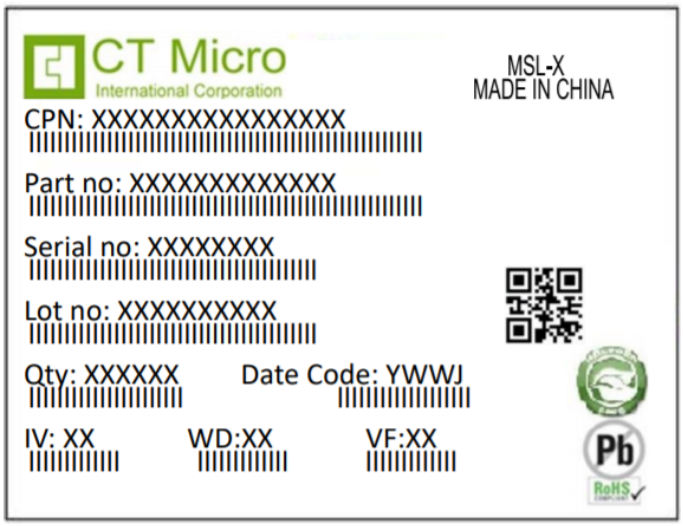



## Tape Dimension *All dimensions are in mm, unless otherwise stated*




Note: Tolerance unless mentioned is ±0.1mm.

## 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

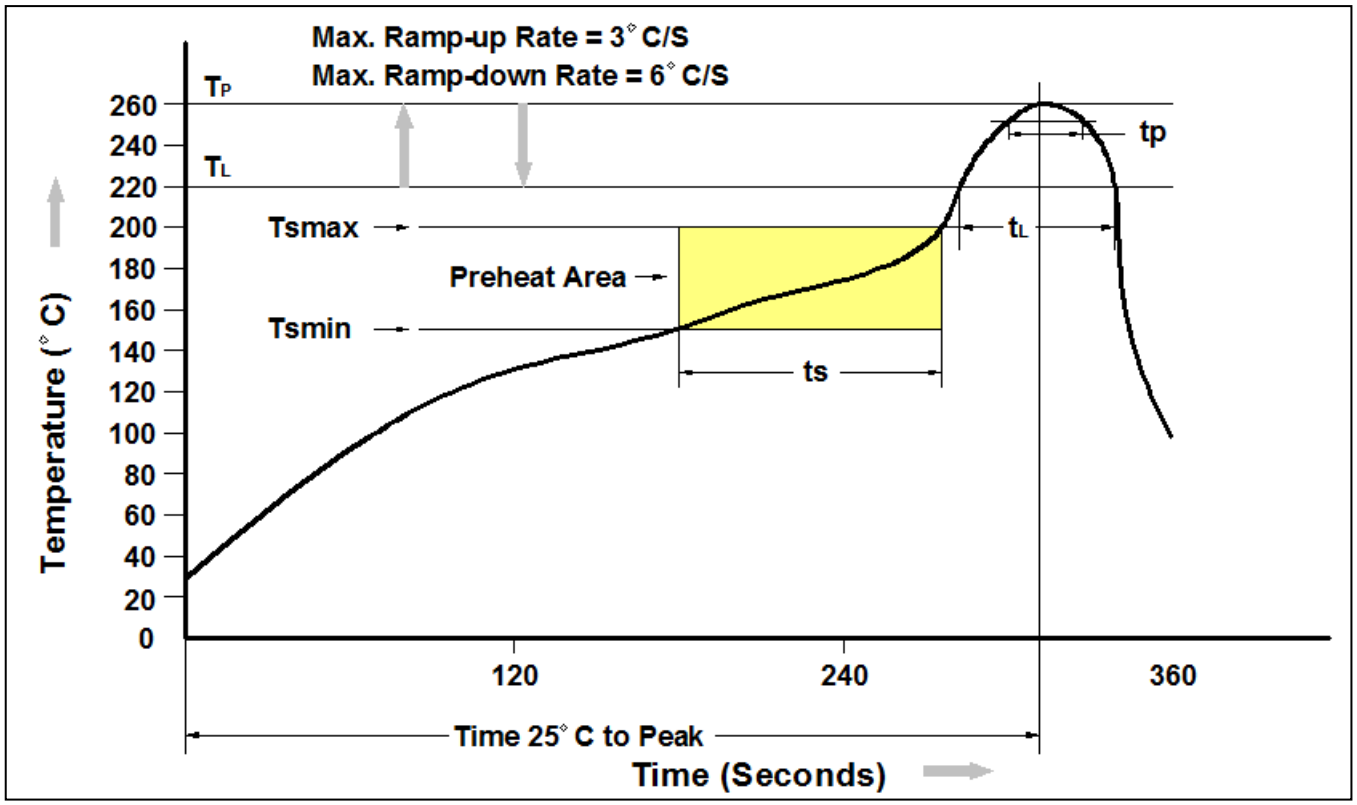
VF : Bin Code of Forward Voltage

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. (Tsmin) | 150°C |
| Temperature Max. (Tsmax) | 200°C |
| Time (ts) from (Tsmin to Tsmax) | 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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