



# GP321015-CSC3

## SMD Type Green Emitter

### Features

- Side view 1204 package
- Viewing Angle =  $\pm 60^\circ$
- Compatible with infrared and vapor phase reflow solder process
- High reliability
- Ultra bright Green
- RoHS compliance

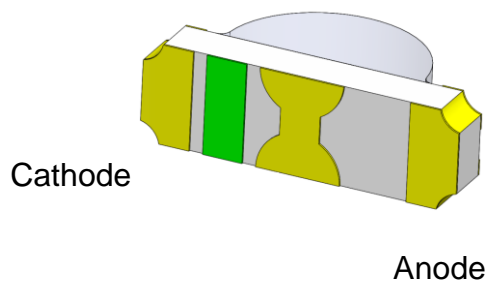
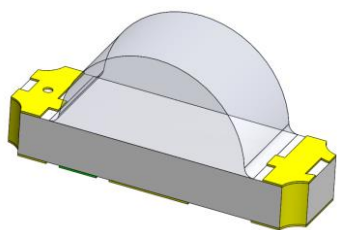
### Applications

- Optical indicator.
- Switch and Symbol Display.

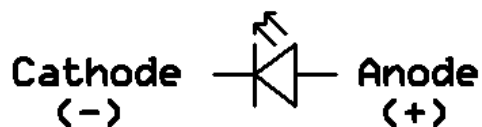
### Description

The GP321015-CSC3 is an AlGaInP Green LED housed in a miniature SMD package. The device has a dominant wavelength of 530 nm LED.

### Package Outline



### Schematic





# GP321015-CSC3

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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 | 95         | mW    |       |

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

#### Optical Characteristics

| Symbol           | Parameters              | Test Conditions     | Min | Typ | Max | Units | Notes |
|------------------|-------------------------|---------------------|-----|-----|-----|-------|-------|
| I <sub>V</sub>   | Luminous Intensity      | I <sub>F</sub> =5mA | 130 | -   | 300 | mcd   | 3     |
| λ <sub>D</sub>   | Dominant Wavelength     | I <sub>F</sub> =5mA | 520 | -   | 535 | nm    | 4     |
| θ <sub>1/2</sub> | Angle of Half Intensity | I <sub>F</sub> =5mA | -   | ±60 | -   | deg   |       |

#### Electrical Characteristics

| Symbol         | Parameters      | Test Conditions     | Min | Typ | Max | Units | Notes |
|----------------|-----------------|---------------------|-----|-----|-----|-------|-------|
| V <sub>F</sub> | Forward Voltage | I <sub>F</sub> =5mA | 2.5 | -   | 3.1 | V     | 5     |
| 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

| Bin Code | Min | Max | Unit | Condition           |
|----------|-----|-----|------|---------------------|
| o1       | 130 | 160 | mcd  | I <sub>F</sub> =5mA |
| o2       | 160 | 200 |      |                     |
| p1       | 200 | 250 |      |                     |
| p2       | 250 | 300 |      |                     |

Tolerance of Luminous Intensity ±10%



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#### 4. Bin Range of Dominant Wavelength

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

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

#### 5. Bin Range of Forward Voltage

| Bin Code | Min | Max | Unit | Condition        |
|----------|-----|-----|------|------------------|
| 32       | 2.5 | 2.6 | V    | $I_F=5\text{mA}$ |
| 33       | 2.6 | 2.7 |      |                  |
| 34       | 2.7 | 2.8 |      |                  |
| 35       | 2.8 | 2.9 |      |                  |
| 36       | 2.9 | 3.0 |      |                  |
| 37       | 3.0 | 3.1 |      |                  |

Tolerance of Forward Voltage  $\pm 0.05\text{V}$ .



# GP321015-CSC3

## SMD Type Green Emitter

### Typical Characteristic Curves

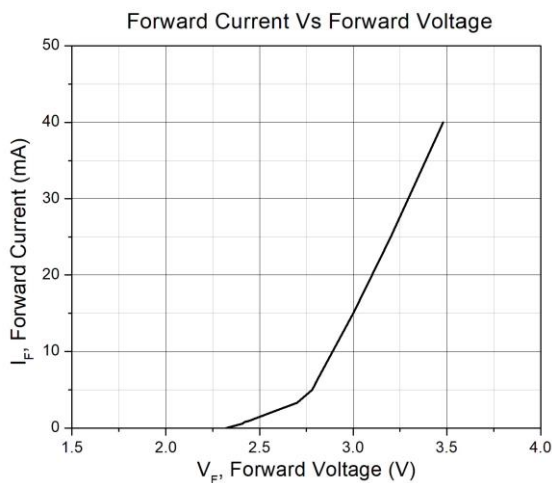


Figure 1

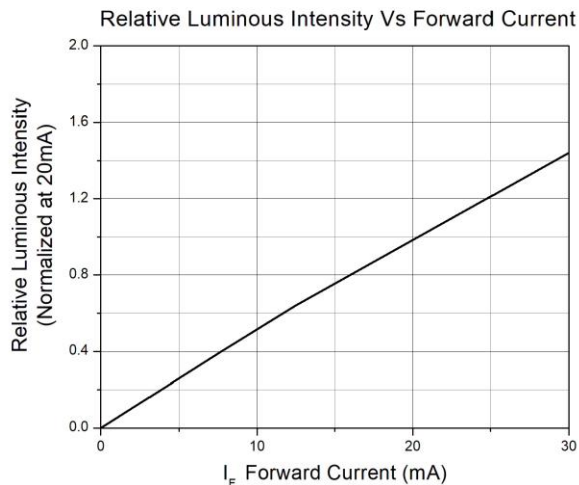


Figure 2

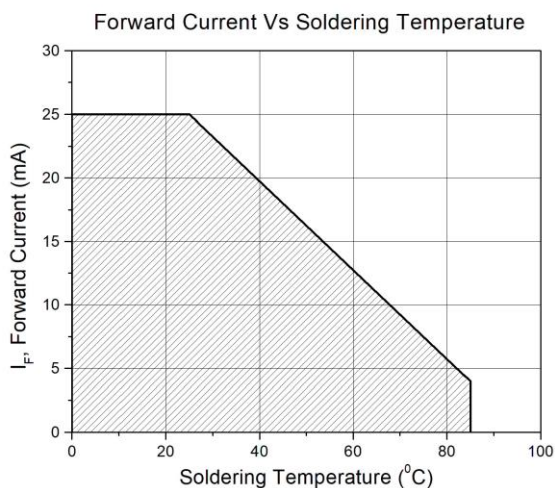


Figure 3

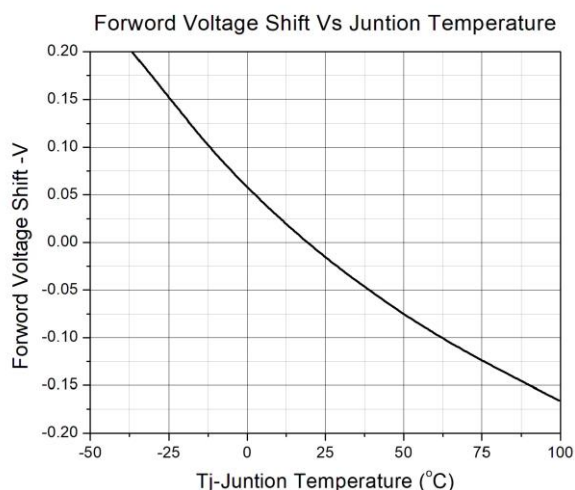


Figure 4

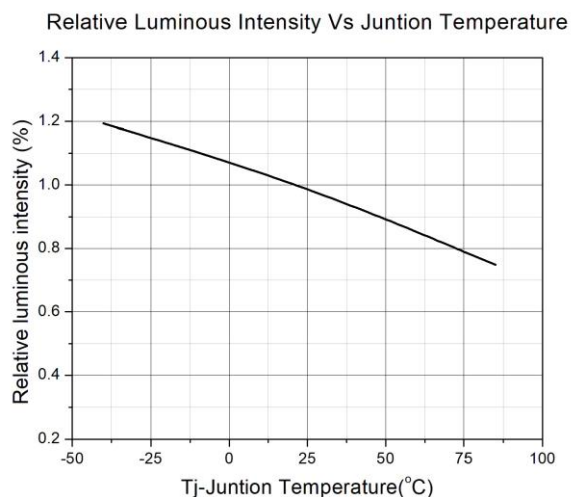


Figure 5

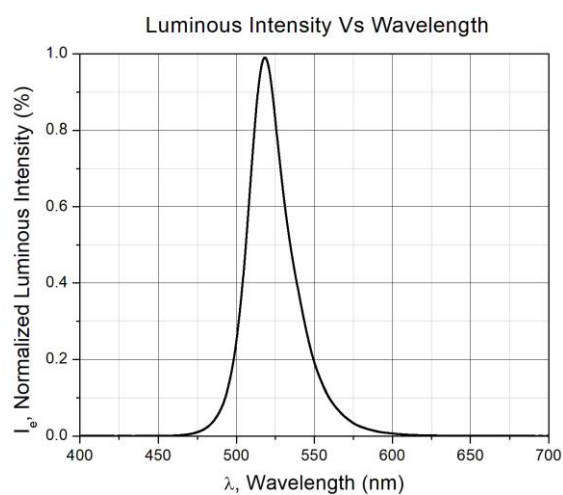


Figure 6



# GP321015-CSC3

## SMD Type Green Emitter

### Typical Characteristic Curves

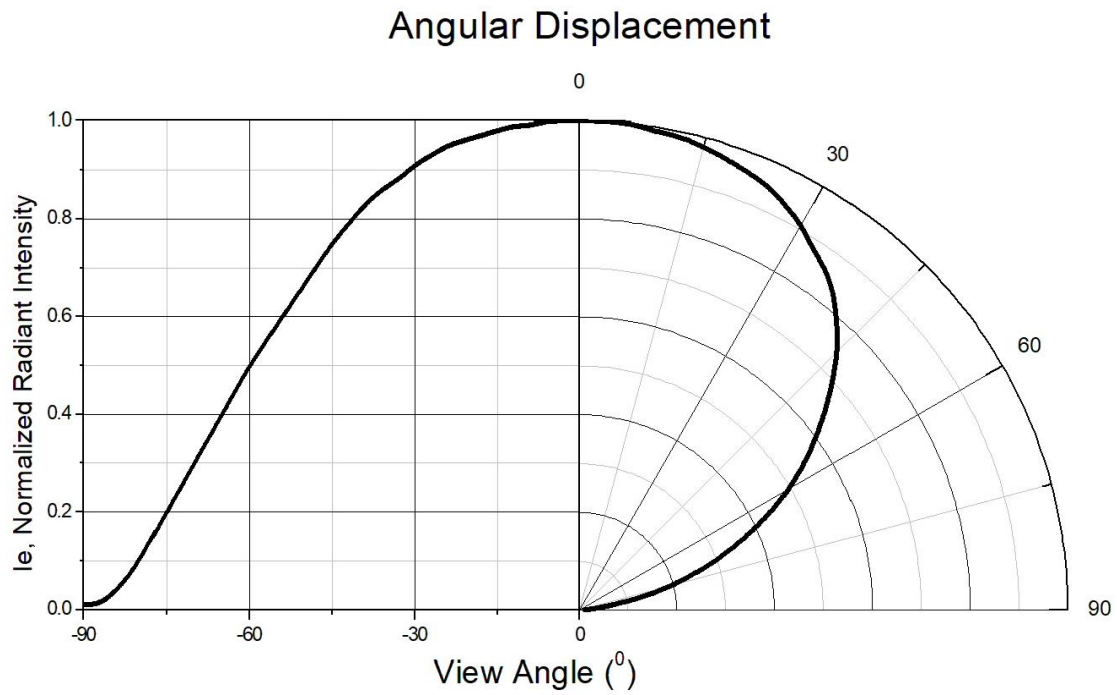


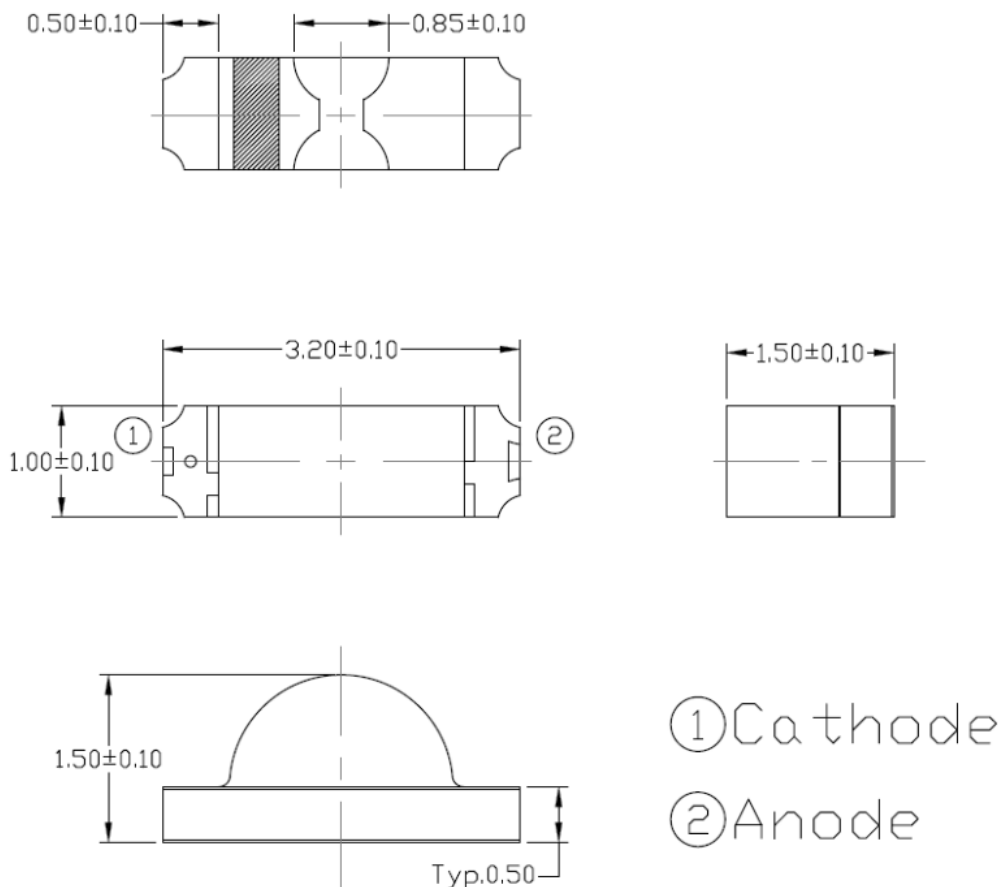
Figure 7



# GP321015-CSC3

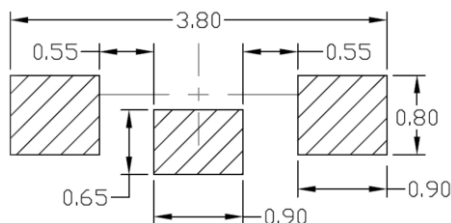
## SMD Type Green Emitter

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



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

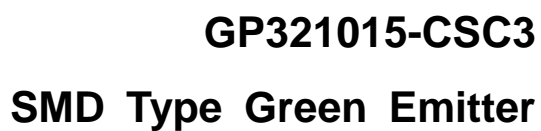
### Recommended Soldering Mask *All dimensions are in mm, unless otherwise stated*



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

### Ordering Information

| Part Number   | Description | Quantity |
|---------------|-------------|----------|
| GP321015-CSC3 | Tape & Reel | 3000 pcs |



Rev 3  
Jan, 2021



## GP321015-CSC3

### SMD Type Green Emitter

#### Label Form Specification

CT Micro  
International Corporation

MSL-X  
MADE IN CHINA

CPN: XXXXXXXXXXXXXXXXXX  
|||||

Part no: XXXXXXXXXXXXXXXX  
|||||

Serial no: XXXXXXXX  
|||||

Lot no: XXXXXXXX  
|||||

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.

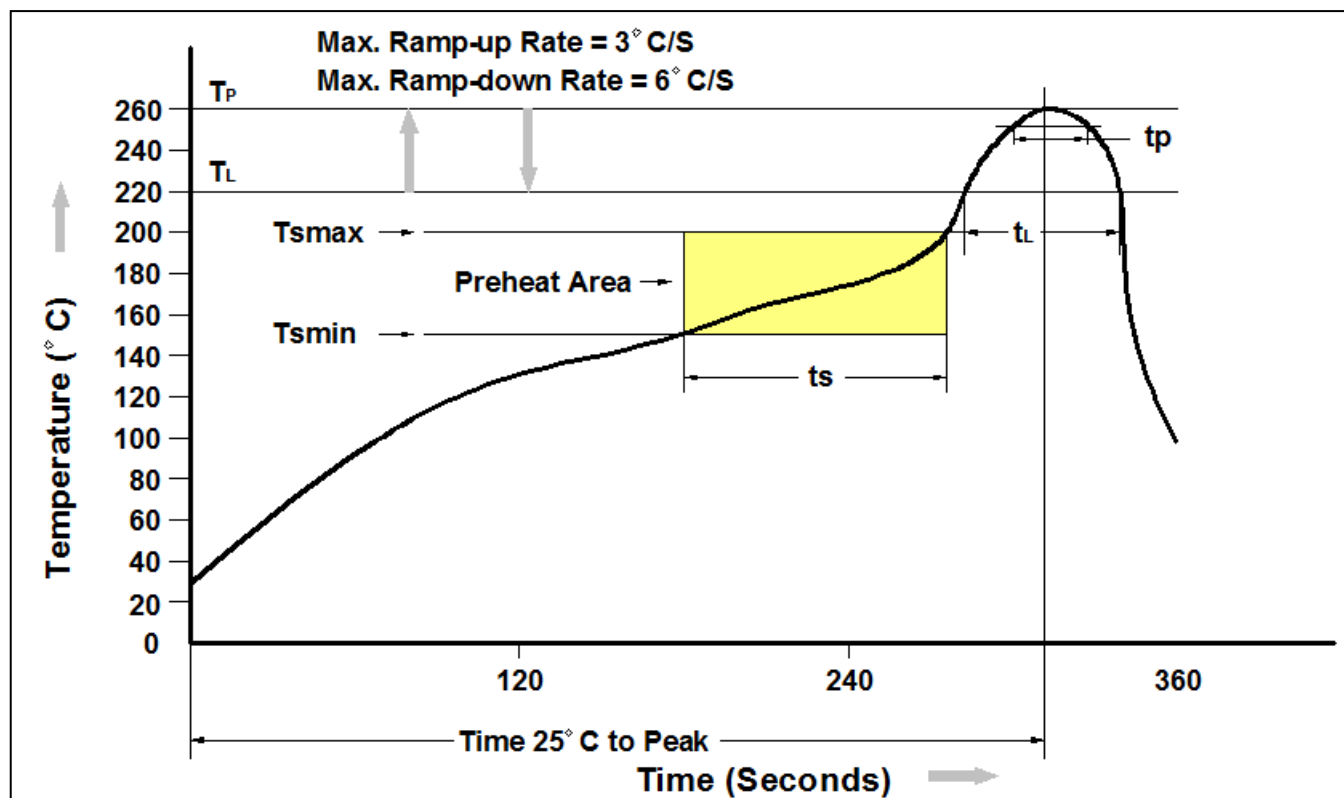




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## SMD Type Green Emitter

### Reflow Profile



| Profile Feature   | Pb-Free Assembly Profile |
|---|--------------------------|
| Temperature Min. (T <sub>smin</sub> )                                 | 150°C                    |
| Temperature Max. (T <sub>smax</sub> )                                 | 200°C                    |
| Time (t <sub>s</sub> ) from (T <sub>smin</sub> to T <sub>smax</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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