

# PRODUCT SPECIFICATION

*Part Number*  
**PLC3528-WCB01**

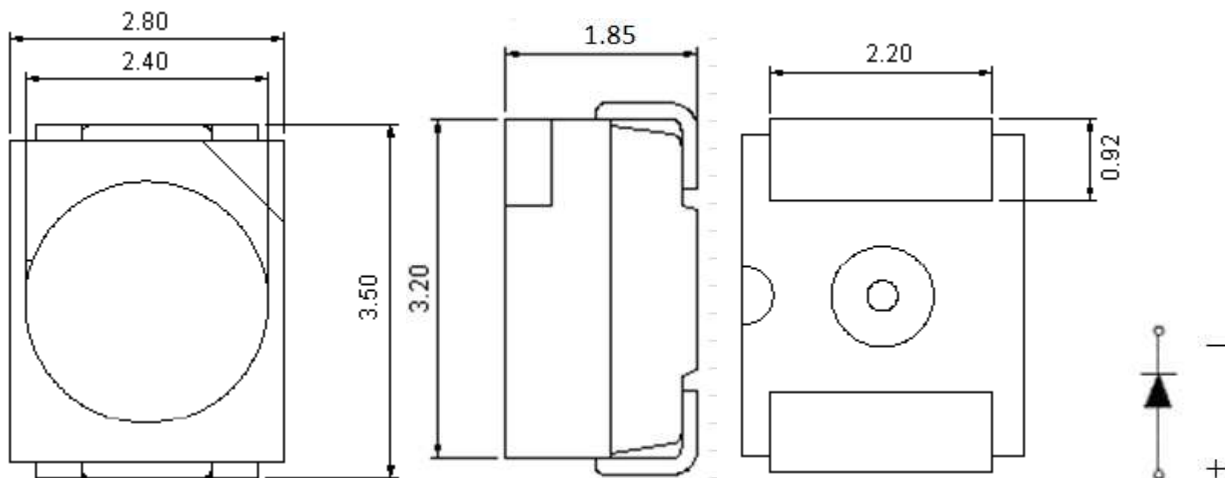
## *Details*

- Single Color Surface Mount LED
- PLCC-2 3.5 x 2.8 x 1.85mm
- 2,500 piece reels
- Emitting Color: Blue
- InGaN chip material

## *Features*

- Wide viewing angle 120°
- JEDEC MSL 2a
- Compatible lead-free reflow soldering process
- RoHS Compliant

## *Mechanical Dimensions*



### Notes:

1. Specifications subject to change without notice
2. Tolerance of measurement of dimensions:  $\pm 0.2\text{mm}$





**Device Selection Guide**

| Model Number  | Chip     |                | Encapsulation |
|---------------|----------|----------------|---------------|
| PLC3528-WCB01 | Material | Emitting Color | Silicone      |
|               | InGaN    | Blue           |               |

**Absolute Maximum Ratings at Ta=25 °C**

| Parameter                    | Symbol | Rating  | Unit |
|------------------------------|--------|---|------|
| Power Dissipation            | Pd     | 108   | mW   |
| Forward Current              | IF     | 30  | mA   |
| Peak Forward Current (1)     | IFP    | 100   | mA   |
| LED Junction Temperature (2) | Tj     | 115   | °C   |
| Operating Temperature        | Topr   | -40~+85   | °C   |
| Storage Temperature          | Tstg   | -40~+100  | °C   |
| Soldering Temperature        | Tsol   | Reflow Soldering: 260°C for 10 sec<br>Hand Soldering: 350°C for 3 sec |      |

Notes: 1. Pulse width  $\leq$  0.1 msec, duty  $\leq$  1/10

2. Proper current rating must be observed to maintain junction temperature below the maximum at all the time.

**Electrical and Optical Characteristics at Ta=25 °C**

| Parameter           | Symbol         | Min. | Typ. | Max. | Unit    | Condition |
|---------------------|----------------|------|------|------|---------|-----------|
| Forward Voltage     | VF             | --   | 3.0  | --   | V       | IF=20mA   |
| Luminous Intensity  | $\Phi_v$       | --   | 290  | --   | mcd     |           |
| Dominant Wavelength | $\lambda_D$    | --   | 470  | --   | nm      |           |
| Viewing Angle       | 2 $\theta$ 1/2 | --   | 120  | --   | deg     |           |
| Reverse Current     | IR             | --   | --   | 10   | $\mu$ A | VR=5V     |

***Luminous Intensity Rank Limits (IF = 20mA)***

| Part Number   | Luminous Intensity |         |         |         |
|---------------|--------------------|---------|---------|---------|
|               | 21                 | 22      | 23      | 24      |
| PLC3528-WCB01 | 170-220            | 220-290 | 290-380 | 380-490 |

Note: Tolerance of measurement of luminous flux:  $\pm 12\%$

***Dominant Wavelength Rank Limits (IF = 20mA)***

| Part Number | Wavelength Rank |     | Unit | Condition |
|-------------|-----------------|-----|------|-----------|
|             | Min             | Max |      |           |
| B5          | 460             | 465 | nm   | If=20mA   |
| B6          | 465             | 470 |      |           |
| B7          | 470             | 475 |      |           |

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

***Forward Voltage Rank Limits***

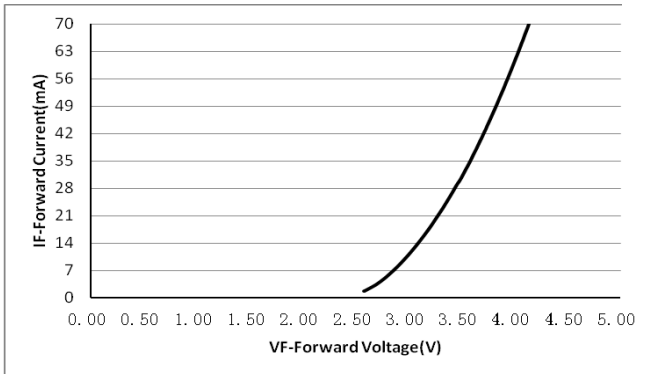
| VF Rank | Min | Max | Unit | Condition |
|---------|-----|-----|------|-----------|
| V2C     | 2.7 | 3.0 | V    | IF = 20mA |
| V3A     | 3.0 | 3.3 |      |           |
| V3B     | 3.3 | 3.6 |      |           |

Note: Tolerance of measurement of Forward Voltage:  $\pm 0.1\text{V}$

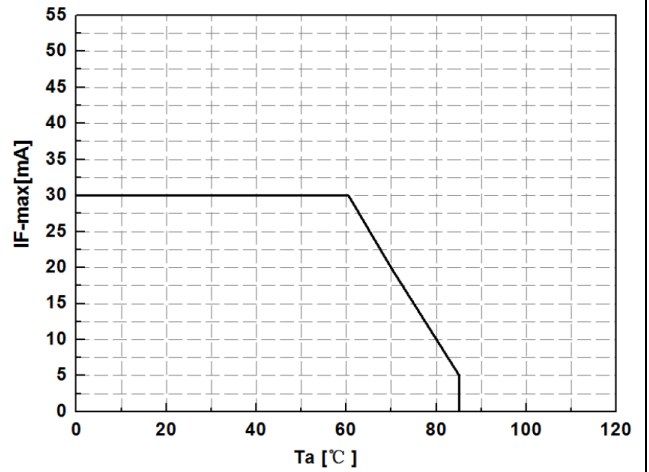
### Typical Electrical / Optical Characteristic Curves

- $T_a = 25^\circ\text{C}$  Unless Otherwise Noted

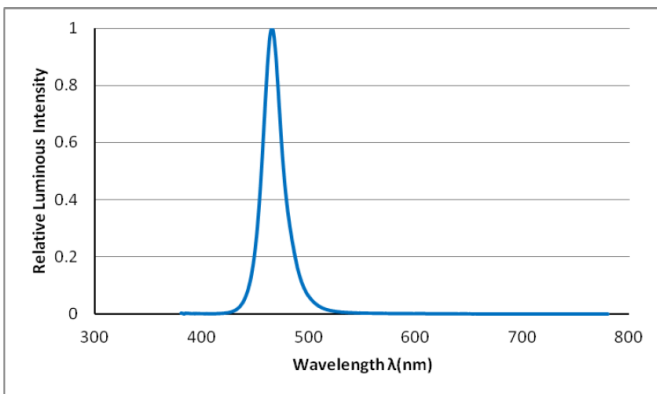
**Figure1. Forward Current VS. Forward Voltage**



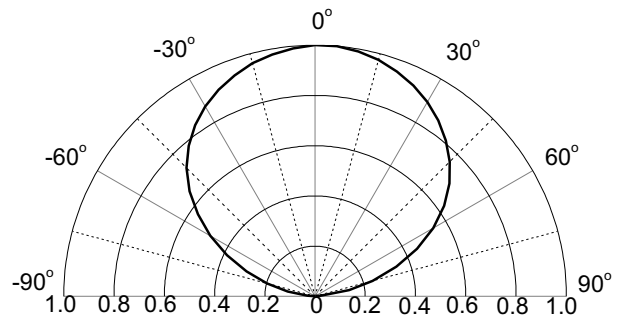
**Figure2. Maximum Driving Forward DC Current VS. Ambient Temperature**



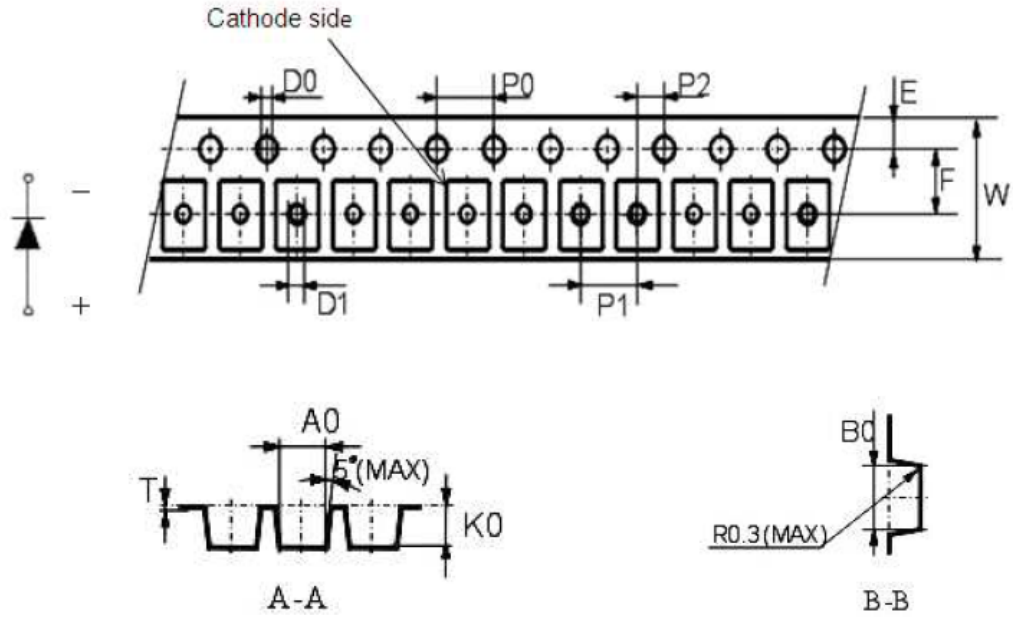
**Figure3. Relative Luminous Intensity VS. Wavelength**



**Figure4. Relative Luminosity VS. Radiation Angle**

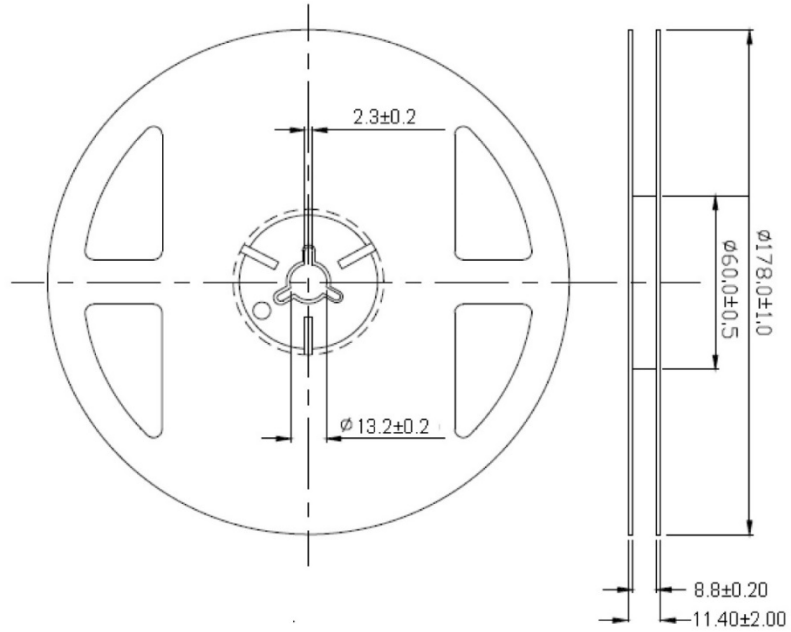


### Package – Tape Dimensions

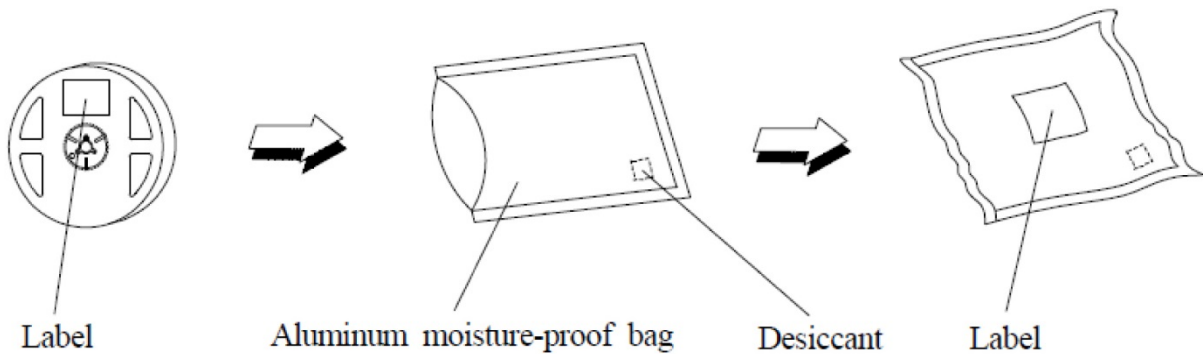


|        |                |                  |                |               |               |                |
|--------|----------------|------------------|----------------|---------------|---------------|----------------|
| Symbol | A0             | B0               | K0             | P0            | P1            | P2             |
| Spec   | $3.15 \pm 0.1$ | $3.8 \pm 0.1$    | $2.10 \pm 0.1$ | $4.0 \pm 0.1$ | $4.0 \pm 0.1$ | $2.0 \pm 0.1$  |
| Symbol | W              | T                | E              | F             | D0            | D1             |
| Spec   | $8.0 \pm 0.10$ | $0.235 \pm 0.05$ | $1.75 \pm 0.1$ | $3.5 \pm 0.1$ | $1.5 \pm 0.1$ | $1.0 \pm 0.05$ |

### Reel Dimensions



### Packaging



| Package Name | Package Dimensions     |      | Distribution of layer in box |           | Total  |      | Note |
|--------------|------------------------|------|------------------------------|-----------|--------|------|------|
|              | Size                   | Unit | Amount                       | Unit      | Amount | Unit |      |
| Reel         | $\phi 178 \times 11.4$ | mm   | 1                            | Reel      | 2500   | pcs  |      |
| Inner Box    | 265 x 235 x 78         | mm   | 5                            | Reel      | 12500  | pcs  |      |
| Outer Box    | 540 x 260 x 170        | mm   | 4                            | Inner Box | 50000  | pcs  |      |



|   |                    |                   |                    |
|---|--------------------|-------------------|--------------------|
| <b>PLC3528-WCB01<br/>Customer Approval<br/>Signatures</b> | <b>Approved By</b> | <b>Checked By</b> | <b>Prepared By</b> |
|   |                    |                   |                    |

| <b>Record Of Revisions</b> |                 |             |             |
|----------------------------|-----------------|-------------|-------------|
| <b>Rev.</b>                | <b>Comments</b> | <b>Page</b> | <b>Date</b> |
| 0                          | Released Spec   | --          | 06/29/18    |
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