

# **WCN4-0030B7-C71-P**

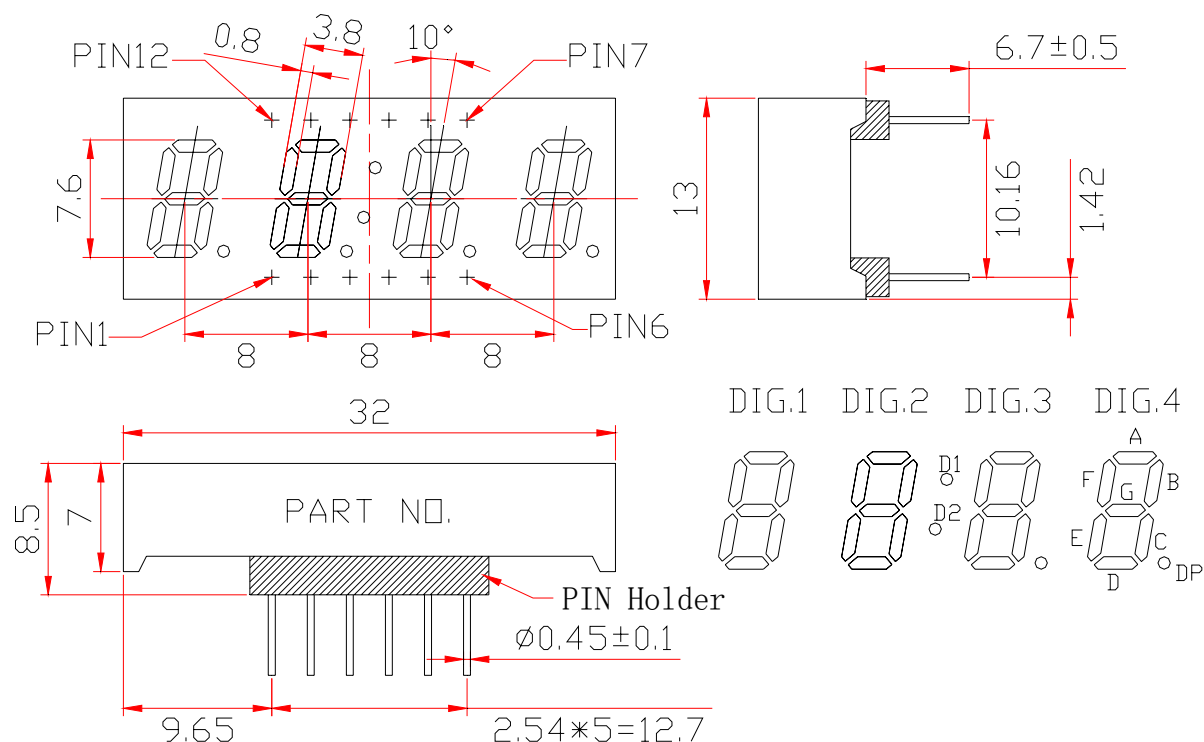
## **SPECIFICATION**

| WCN                |            |             | CUSTOMER<br>Confirmed |
|--------------------|------------|-------------|-----------------------|
| Prepared by        | Checked by | Approved by |                       |
| Zhang<br>2018-5-21 | Athena     | William     |                       |
| REVISION RECORD    |            |             |                       |



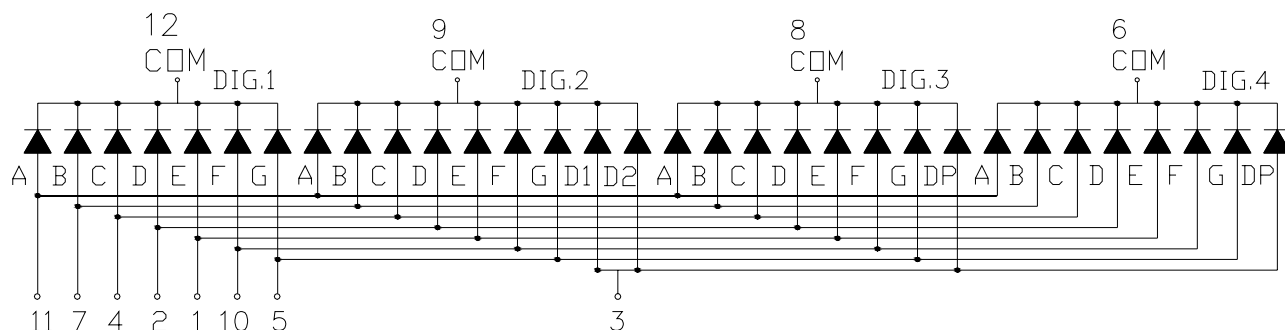
REVISION: A0

### Outer Dimension:



Notes: Unless otherwise stated, The tolerance is  $\pm 0.25$ mm.

### Circuit Diagram:



### Pin Connection:

| PIN NO. | CONNECTION           | PIN NO. | CONNECTION                 |
|---------|----------------------|---------|----------------------------|
| 1       | Anode E              | 7       | Anode B                    |
| 2       | Anode D              | 8       | Common Cathode Dig.3       |
| 3       | Anode D1,D2,DP       | 9       | Common Cathode Dig.2,D1,D2 |
| 4       | Anode C              | 10      | Anode F                    |
| 5       | Anode G              | 11      | Anode A                    |
| 6       | Common Cathode Dig.4 | 12      | Common Cathode Dig.1       |

# WCN Opto Group Co., Limited

## ■ Features:

- High Reliability
- Color: Blue
- Low Power Requirement
- Easy Assembly

## ■ Description:

- Four Digit Display
- Digit Height: 7.6mm(0.30" )
- Black Face and Milky Segment

## ■ Absolute Maximum Rating (Ta=25℃):

| Parameter                        | Symbol           | Condition          | Color | Rating  | Units |
|----------------------------------|------------------|--------------------|-------|---------|-------|
| Power Dissipation Per Segment    | P <sub>d</sub>   | —                  | Blue  | 90      | mW    |
| Forward Current Per Segment      | I <sub>F</sub>   | —                  | Blue  | 25      | mA    |
| Peak Forward Current Per Segment | I <sub>FP</sub>  | 1/10 Duty<br>10KHz | Blue  | 100     | mA    |
| Reverse Voltage Per Segment      | V <sub>R</sub>   | —                  | Blue  | 5       | V     |
| Operating Temperature Range      | T <sub>opr</sub> | —                  | —     | -35~+85 | ℃     |
| Storage Temperature Range        | T <sub>stg</sub> | —                  | —     | -35~+85 | ℃     |

## ■ Electrical/Optical Characteristics Rating(Ta=25℃)

| Item                                                   | Symbol           | Test conditions      | Location    | Rating |      |       | Units |
|--------------------------------------------------------|------------------|----------------------|-------------|--------|------|-------|-------|
|                                                        |                  |                      |             | Min.   | Typ. | Max.  |       |
| Forward Voltage                                        | V <sub>F</sub>   | I <sub>F</sub> =20mA | Per Segment | —      | 3.20 | 3.60  | V     |
| Reverse Current                                        | I <sub>R</sub>   | V <sub>R</sub> =5V   | Per Segment | —      | —    | 100   | μA    |
| Luminous Intensity                                     | I <sub>V</sub>   | I <sub>F</sub> =10mA | Per Segment | 6101   | 9500 | 15250 | μcd   |
| Peak Emission Wave Length                              | λ <sub>P</sub>   | I <sub>F</sub> =20mA | Per Segment | —      | —    | —     | nm    |
|                                                        | λ <sub>D</sub>   |                      |             | —      | 470  | —     |       |
| Spectral Line Half Width                               | △λ               | I <sub>F</sub> =20mA | Per Segment | —      | 30   | —     | nm    |
| Luminous Intensity Matching Ratio (Segment to Segment) | I <sub>v-m</sub> | I <sub>F</sub> =10mA | —           | —      | —    | 1.2:1 |       |

## ■ Luminous Intensity Sorting: (Luminous Intensity Tolerance is +/-10%)

| Rank | Symbol | Condition            | Min   | Max   | Unit |
|------|--------|----------------------|-------|-------|------|
| N    | N      | I <sub>F</sub> =10mA | 6101  | 7200  | μcd  |
| O    | O      | I <sub>F</sub> =10mA | 7201  | 8500  | μcd  |
| P    | P      | I <sub>F</sub> =10mA | 8501  | 10500 | μcd  |
| Q    | Q      | I <sub>F</sub> =10mA | 10501 | 12800 | μcd  |
| R    | R      | I <sub>F</sub> =10mA | 12801 | 15250 | μcd  |

■ Soldering Conditions: Soldering Temp. ≤+260℃, Soldering Time. ≤3sec.  
(at 2mm Distance from The Case of Reflector Edge)

## Typical Elector-Optical Characteristics Curve:

Fig1. Forward Current vs. Forward Voltage:

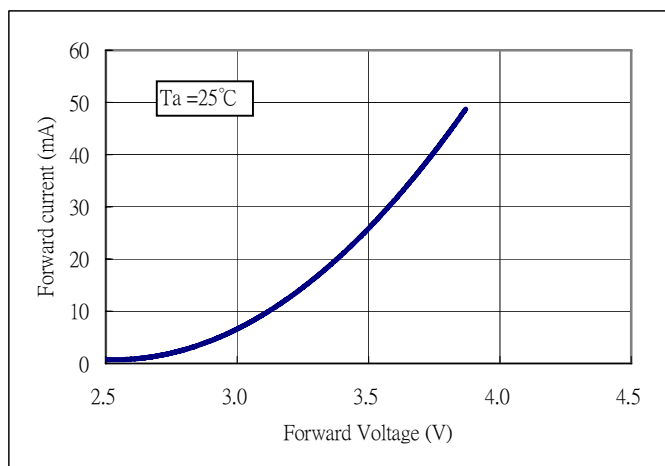


Fig2. Forward Current vs. Relative Intensity:

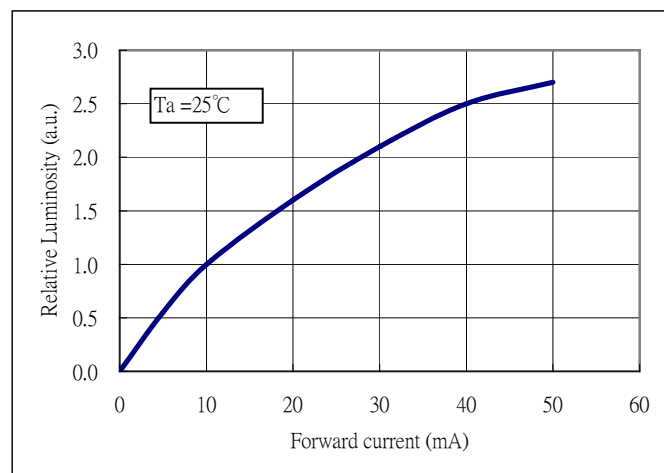


Fig3. Forward Current vs. Relative wavelength:

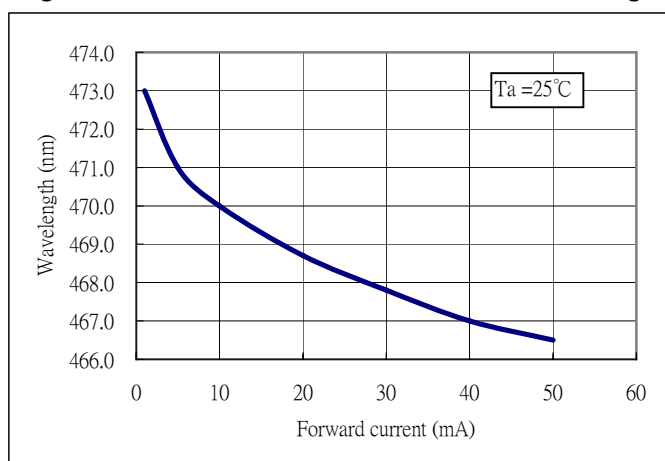
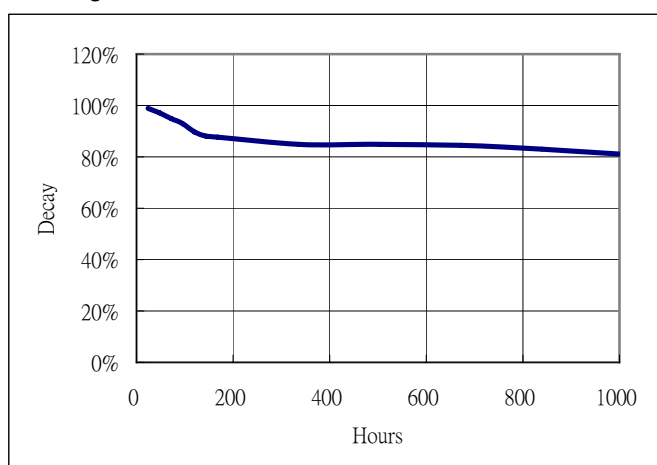


Fig4. Life Test at 20mA R.T. 1000hrs:



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## LED Displays Reliability Test:

| CLASSIFICATION     | TEST ITEM                                    | DESCRIPTION AND TEST CONDITION                                                                                                                                                                                                                                                                |
|--------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ENDURANCE TEST     | OPERATION LIFE                               | EVALUATES RESISTANCE OF THE DEVICE WHEN OPERATED AT ELECTRICAL STRESS<br>$T_a$ = UNDER ROOM TEMPERATURE<br>$I_F = I_{F \text{ max}}$                                                                                                                                                          |
|                    | HIGH TEMPERATURE<br>HIGH HUMIDITY<br>STORAGE | EVALUATES MOISTURE RESISTANCE OF THE DEVICE WHEN STORED FOR A LONG TERM AT HIGH TEMPERATURE AND HUMIDITY<br>$T_a = 65 \pm 5^\circ\text{C}$<br>RH=90~95%RH<br>TEST TIME=240 $\pm$ 2Hrs                                                                                                         |
|                    | HIGH TEMPERATURE<br>STORAGE                  | EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN HIGH TEMPERATURE<br>$T_a = 85 \pm 5^\circ\text{C}$ (COB: $T_a = 65 \pm 5^\circ\text{C}$ )<br>TEST TIME=1000Hrs(-24Hrs, +72Hrs)                                                                                                           |
|                    | LOW TEMPERATURE<br>STORAGE                   | EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN LOW TEMPERATURE<br>$T_a = -35 \pm 5^\circ\text{C}$<br>TEST TIME=1000Hrs(-24Hrs, +72Hrs)                                                                                                                                                  |
| ENVIRONMENTAL TEST | TEMPERATURE<br>CYCLING                       | EVALUATES RESISTANCE OF DEVICE AT THERMAL STRESSES OR EXPANSION AND CONTRACTION<br>$85^\circ\text{C} \sim 25^\circ\text{C} \sim -35^\circ\text{C} \sim 25^\circ\text{C}$<br>30min 5min 30min 5min<br>10 CYCLES(COB: $T_{\text{hot}}=65^\circ\text{C}$ , $T_{\text{cold}}=-25^\circ\text{C}$ ) |
|                    | THERMAL SHOCK                                | EVALUATES DEVICE STRUCTURE AND STRUCTURE AND MECHANICAL RESISTANCE WHEN SUDDENLY EXPOSED AT SERVE CHANGES<br>$85 \pm 5^\circ\text{C} \sim -35 \pm 5^\circ\text{C}$<br>10min 10min<br>10 CYCLES(COB: $T_{\text{hot}}=65^\circ\text{C}$ , $T_{\text{cold}}=-25^\circ\text{C}$ )                 |
|                    | SOLDERABILITY                                | EVALUATES SOLDERABILITY ON LEADS OF DEVICE<br>$T_{\text{SOL}}=230 \pm 5^\circ\text{C}$<br>DWELL TIME=5 $\pm$ 1sec.                                                                                                                                                                            |
|                    | SOLDER<br>RESISTANCE                         | EVALUATES RESISTANCE TO THERMAL STRESS CAUSED BY SOLDERING<br>$T_{\text{SOL}}=260 \pm 5^\circ\text{C}$<br>DWELL TIME=10 $\pm$ 1sec.                                                                                                                                                           |

## Packing method A:

110 pcs / Red Expandable Polyethylene.

660 pcs / Box(360\*175\*130mm).

3960 pcs / Carton(550\*380\*280mm).