

# WCNLB5-SR11

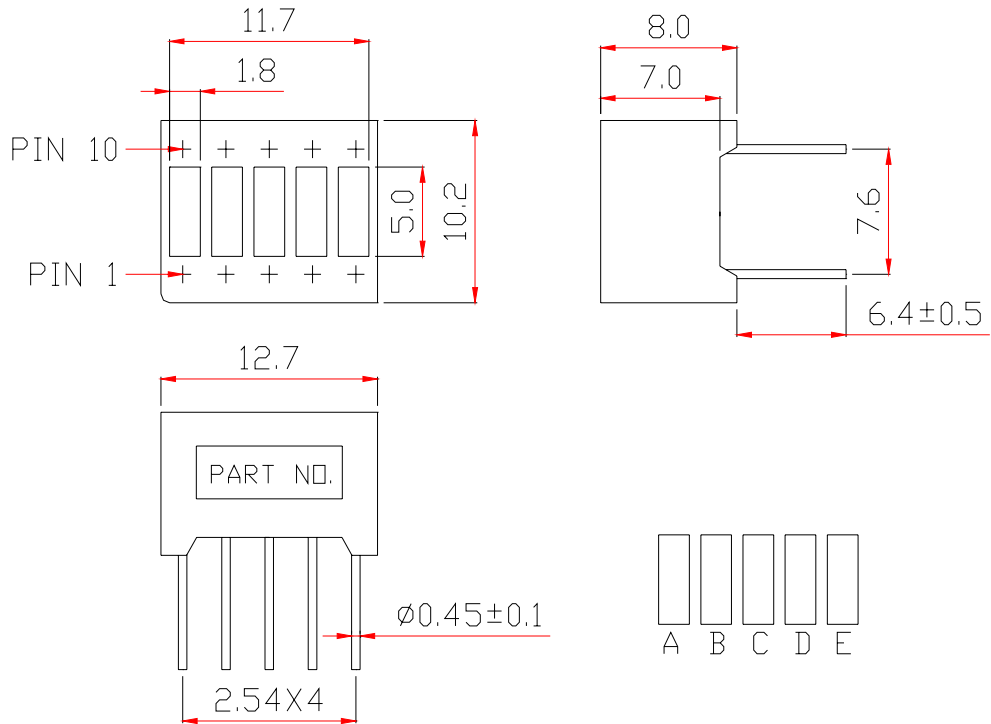
## SPECIFICATION

| WCN  |            |             | CUSTOMER<br>Confirmed |
|--|------------|-------------|-----------------------|
| Prepared by  | Checked by | Approved by |                       |
| Fei<br>2016-8-5  | Athena     | William     |                       |
| <b>REVISION RECORD</b><br>A1:New Version issued (2016-8-5) |            |             |                       |



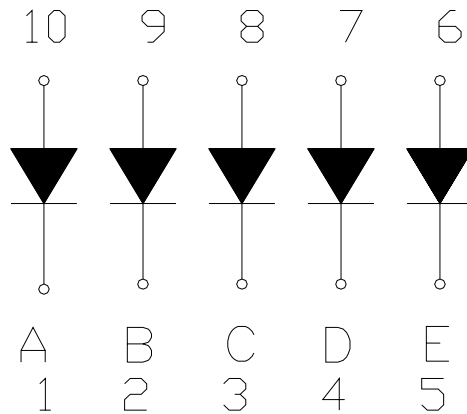
REVISION: A1

■ **Outer Dimension:**



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

■ **Circuit Diagram:**



■ **Pin Connection:**

| PIN NO. | CONNECTION | PIN NO. | CONNECTION |
|---------|------------|---------|------------|
| 1       | Cathode A  | 6       | Anode E    |
| 2       | Cathode B  | 7       | Anode D    |
| 3       | Cathode C  | 8       | Anode C    |
| 4       | Cathode D  | 9       | Anode B    |
| 5       | Cathode E  | 10      | Anode A    |

■ **Features:**

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

■ **Description:**

- Five Windows Display
- Digit Height 5.0mm(0.20" ) and Width 1.8mm(0.07" )
- Black Face and Milky Bar

■ **Absolute Maximum Rating (Ta=25°C):**

| Parameter                    | Symbol           | Condition          | Color | Rating  | Units |
|------------------------------|------------------|--------------------|-------|---------|-------|
| Power Dissipation Per Bar    | P <sub>d</sub>   | —                  | Red   | 65      | mW    |
| Forward Current Per Bar      | I <sub>F</sub>   | —                  | Red   | 25      | mA    |
| Peak Forward Current Per Bar | I <sub>FP</sub>  | 1/10 Duty<br>10KHz | Red   | 100     | mA    |
| Reverse Voltage Per Bar      | V <sub>R</sub>   | —                  | Red   | 5       | V     |
| Operating Temperature Range  | T <sub>opr</sub> | —                  | —     | -35~+85 | °C    |
| Storage Temperature Range    | T <sub>stg</sub> | —                  | —     | -35~+85 | °C    |

■ **Electrical/Optical Characteristics Rating(Ta=25°C)**

| Item  | Symbol           | Test conditions      | Location | Rating |      |       | Units |
|---|------------------|----------------------|----------|--------|------|-------|-------|
|   |                  |                      |          | Min.   | Typ. | Max.  |       |
| Forward Voltage                                   | V <sub>F</sub>   | I <sub>F</sub> =20mA | Per Bar  | —      | 2.0  | 2.60  | V     |
| Reverse Current                                   | I <sub>R</sub>   | V <sub>R</sub> =5V   | Per Bar  | —      | —    | 100   | μA    |
| Luminous Intensity                                | I <sub>V</sub>   | I <sub>F</sub> =10mA | Per Bar  | 3201   | 6500 | 12560 | μcd   |
| Wave Length                                       | λ <sub>P</sub>   | I <sub>F</sub> =20mA | Per Bar  | —      | 638  | —     | nm    |
|   | λ <sub>D</sub>   |                      |          |        | 633  |       |       |
| Spectral Line Half Width                          | △λ               | I <sub>F</sub> =20mA | Per Bar  | —      | 30   | —     | nm    |
| Luminous Intensity Matching Ratio<br>(Bar to Bar) | 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 |
|------|--------|----------------------|------|-------|------|
| J    | J      | I <sub>F</sub> =10mA | 3201 | 5050  | μcd  |
| K    | K      | I <sub>F</sub> =10mA | 5051 | 8000  | μcd  |
| L    | L      | I <sub>F</sub> =10mA | 8001 | 12560 | μcd  |

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

■ Typical Elector-Optical Characteristics Curve:

Fig 1. Forward Current vs. Forward Voltage

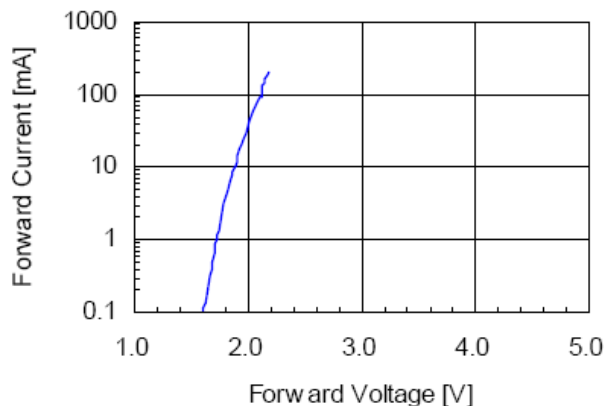


Fig 2. Relative Intensity vs. Forward Current

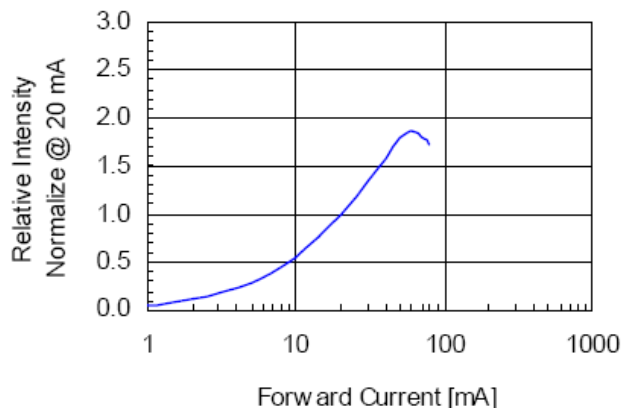


Fig 3. Forward Voltage vs. Temperature

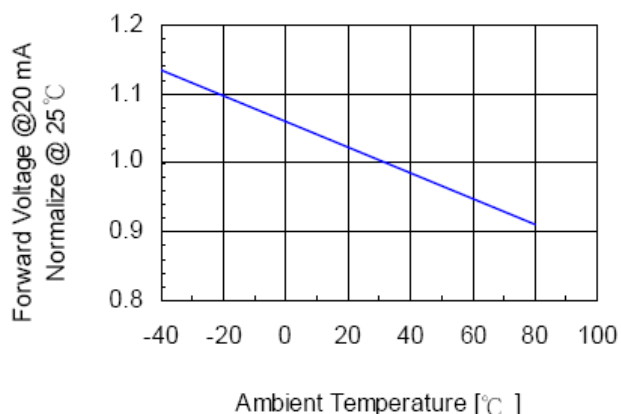


Fig 4. Relative Intensity vs. Temperature

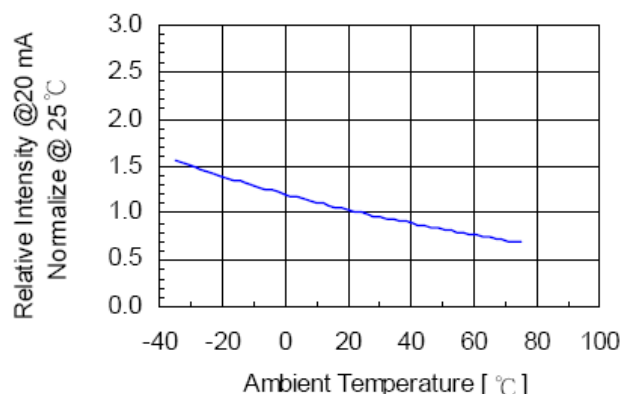
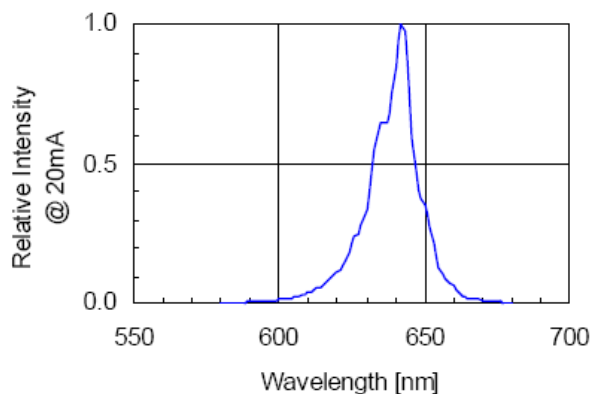


Fig 5. Relative Intensity vs. Wavelength



## 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 <sub>a</sub> = UNDER ROOM TEMPERATURE<br>I <sub>F</sub> = I <sub>F</sub> max  |
|                    | HIGH TEMPERATURE HIGH HUMIDITY STORAGE | EVALUATES MOISTURE RESISTANCE OF THE DEVICE WHEN STORED FOR A LONG TERM AT HIGH TEMPERATURE AND HUMIDITY<br>T <sub>a</sub> = 65±5°C<br>RH=90~95%RH<br>TEST TIME=240± 2Hrs  |
|                    | HIGH TEMPERATURE STORAGE               | EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN HIGH TEMPERATURE<br>T <sub>a</sub> = 85±5°C(COB: T <sub>a</sub> =65±5°C)<br>TEST TIME=1000Hrs(-24Hrs, +72Hrs)   |
|                    | LOW TEMPERATURE STORAGE                | EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN LOW TEMPERATURE<br>T <sub>a</sub> = -35±5°C<br>TEST TIME=1000Hrs(-24Hrs, +72Hrs)  |
| ENVIRONMENTAL TEST | TEMPERATURE CYCLING                    | EVALUATES RESISTANCE OF DEVICE AT THERMAL STRESSES OR EXPANSION AND CONTRACTION<br>85°C ~ 25°C ~ -35°C ~ 25°C<br>30min 5min 30min 5min<br>10 CYCLES(COB: T <sub>hot</sub> =65°C, T <sub>cold</sub> =-25°C)       |
|                    | THERMAL SHOCK                          | EVALUATES DEVICE STRUCTURE AND STRUCTURE AND MECHANICAL RESISTANCE WHEN SUDDENLY EXPOSED AT SERVE CHANGES<br>85±5°C ~ -35±5°C<br>10min 10min<br>10 CYCLES(COB: T <sub>hot</sub> =65°C, T <sub>cold</sub> =-25°C) |
|                    | SOLDERABILITY                          | EVALUATES SOLDERABILITY ON LEADS OF DEVICE<br>T.SOL=230±5°C<br>DWELL TIME=5±1sec.  |
|                    | SOLDER RESISTANCE                      | EVALUATES RESISTANCE TO THERMAL STRESS CAUSED BY SOLDERING<br>T.SOL=260±5°C<br>DWELL TIME=10±1sec.   |

## Packing method A :

350pcs / Red Expandable Polyethylene.

2100 pcs / Box(360\*175\*130mm).

12600 pcs / Catton(550\*380\*280mm).

## Packing method B:

40 pcs / IC Tube.(530\*14.5\*15.5)

3080 pcs / Box(537\*175\*125mm).

12320pcs / Catton(550\*380\*280mm).