

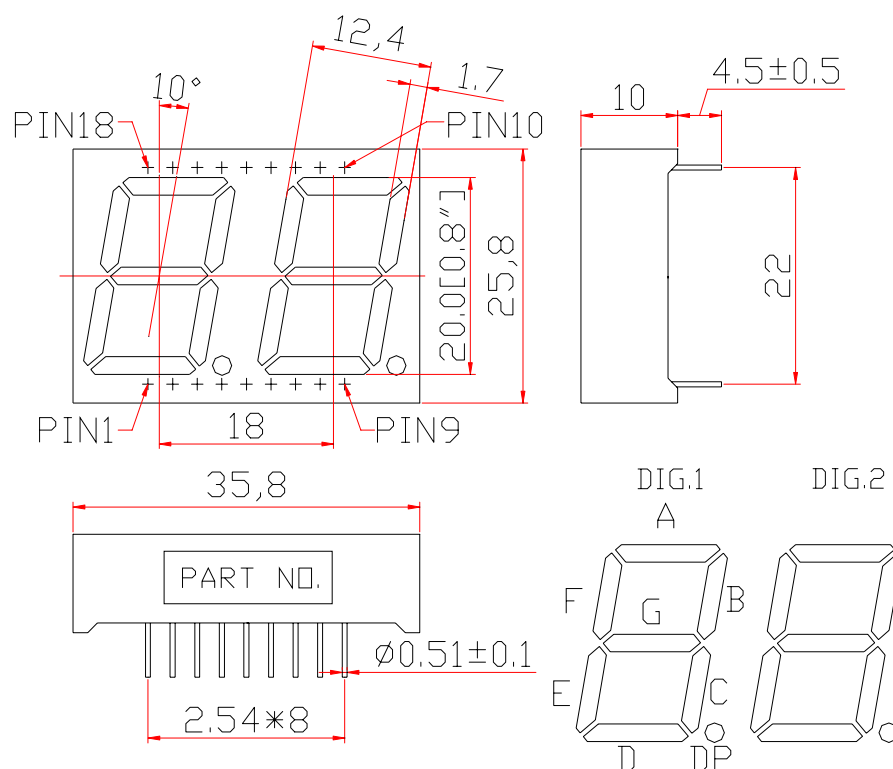
# **WCN2-0080B7-A11**

## **SPECIFICATION**

| <b>WCN</b>                    |                   |                    | <b>CUSTOMER<br/>Confirmed</b> |
|-------------------------------|-------------------|--------------------|-------------------------------|
| <b>Prepared by</b>            | <b>Checked by</b> | <b>Approved by</b> |                               |
| <b>Fei</b><br><b>2016-6-2</b> | <b>Athena</b>     |                    |                               |
| <b>REVISION RECORD</b>        |                   |                    |                               |

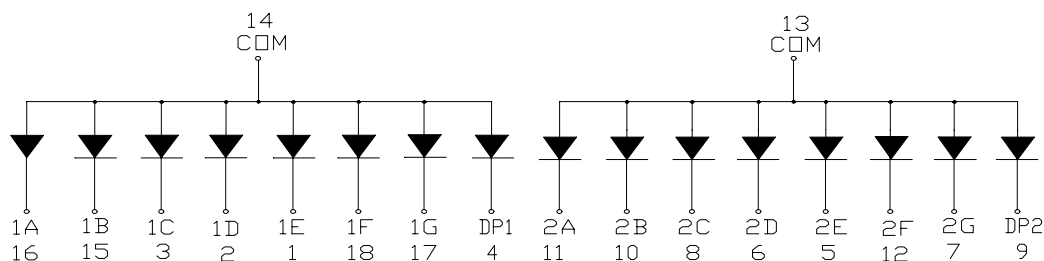
**REVISION: A0**

### Outer Dimension:



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

### Circuit Diagram:



### Pin Connection:

| PIN NO. | CONNECTION  | PIN NO. | CONNECTION         |
|---------|-------------|---------|--------------------|
| 1       | Cathode 1E  | 10      | Cathode 2B         |
| 2       | Cathode 1D  | 11      | Cathode 2A         |
| 3       | Cathode 1C  | 12      | Cathode 2F         |
| 4       | Cathode DP1 | 13      | Common Anode Dig.2 |
| 5       | Cathode 2E  | 14      | Common Anode Dig.1 |
| 6       | Cathode 2D  | 15      | Cathode 1B         |
| 7       | Cathode 2G  | 16      | Cathode 1A         |
| 8       | Cathode 2C  | 17      | Cathode 1G         |
| 9       | Cathode DP2 | 18      | Cathode 1F         |

## ■ Features:

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

## ■ Description:

- Dual Digit LED Display
- Digit Height:20.0mm(0.80" )
- 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 | —      | 3.2   | 3.6   | 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 | 12801  | 19500 | 31000 | μcd   |
| Peak Emission Wave Length                              | λ <sub>p</sub>   | I <sub>F</sub> =20mA | Per Segment | —      | —     | —     | nm    |
|                                                        | λ <sub>d</sub>   |                      |             | 465    | 470   | 475   |       |
| 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> =20mA | —           | —      | —     | 1.2:1 |       |

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

| Rank | Symbol | Condition            | Min   | Max   | Unit |
|------|--------|----------------------|-------|-------|------|
| R    | R      | I <sub>F</sub> =10mA | 12801 | 15250 | μcd  |
| S    | S      | I <sub>F</sub> =10mA | 15251 | 18000 | μcd  |
| T    | T      | I <sub>F</sub> =10mA | 18001 | 21500 | μcd  |
| U    | U      | I <sub>F</sub> =10mA | 21501 | 26000 | μcd  |
| V    | V      | I <sub>F</sub> =10mA | 26001 | 31000 | 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:

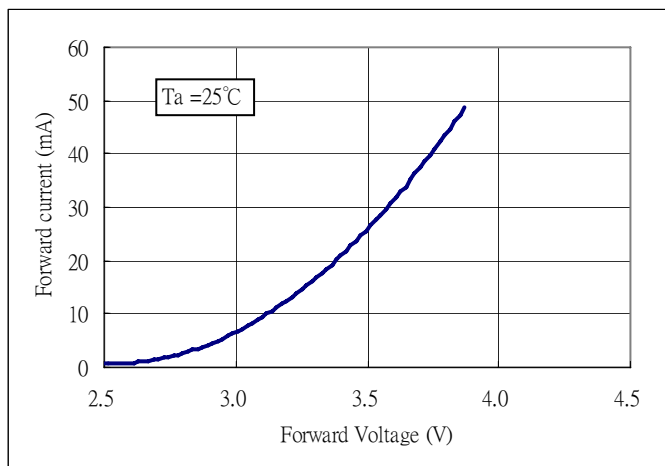


Fig2. Forward Current vs. Relative Intensity:

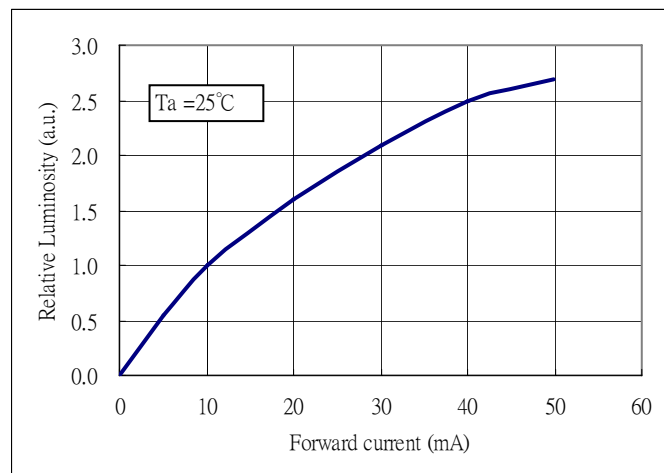


Fig3. Forward Current vs. Relative wavelength:

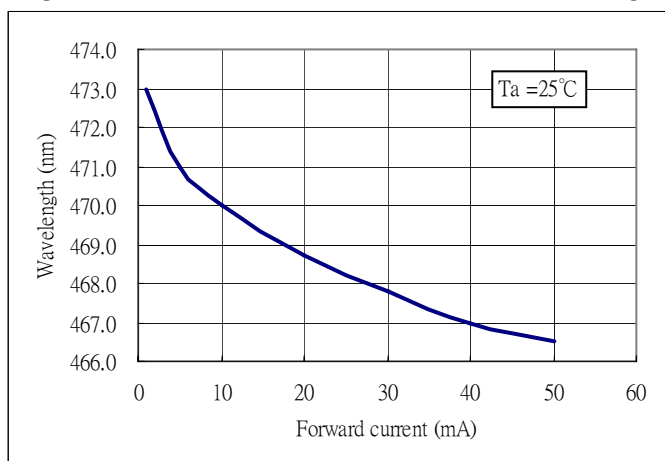
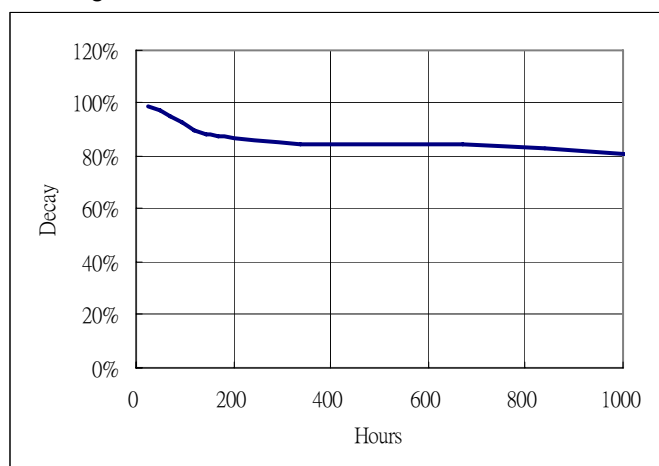


Fig4. Life Test at 20mA R.T. 1000hrs:



## 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: Thot=65°C, Tcold=-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: Thot=65°C, Tcold=-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:

48 pcs / Red Expandable Polyethylene.

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

1680 pcs / Carton(550\*380\*280mm).

## Packing method B:

13 pcs / IC Tube(520\*28\*21).

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

1560 pcs / Carton(550\*380\*280mm)