

# **WCN2-0056GU-A11**

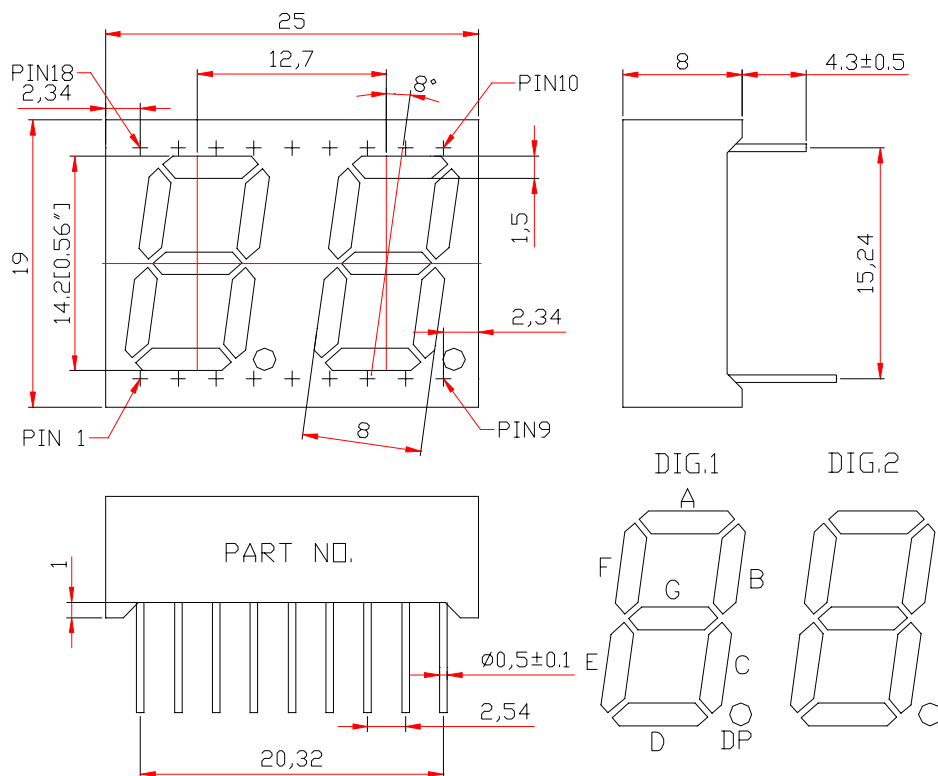
## **SPECIFICATION**

| WCN              |            |             | CUSTOMER<br>Confirmed |
|------------------|------------|-------------|-----------------------|
| Prepared by      | Checked by | Approved by |                       |
| Fei<br>2016-5-16 | Athena     | William     |                       |
| REVISION RECORD  |            |             |                       |



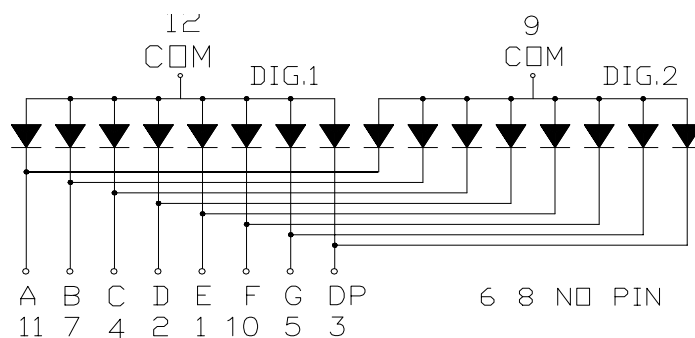
REVISION: A0

■ **Outer Dimension:**



**Notes: Unless otherwise stated, the tolerance is  $\pm 0.25\text{mm}$ .**

### ■ Circuit Diagram



### ■ Pin Connection:

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

# WCN Opto Group Co., Limited

## ■ Features:

- High Reliability
- Color: Yellow Green
- Low Power Requirement
- Easy Assembly

## ■ Description:

- Dual Digit Display
- Digit Height:14.2 mm (0.56" )
- Black Face and Milky Segment

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

| Parameter                        | Symbol           | Condition          | Color        | Rating  | Units |
|----------------------------------|------------------|--------------------|--------------|---------|-------|
| Power Dissipation Per Segment    | P <sub>d</sub>   | —                  | Yellow Green | 65      | mW    |
| Forward Current Per Segment      | I <sub>F</sub>   | —                  | Yellow Green | 25      | mA    |
| Peak Forward Current Per Segment | I <sub>FP</sub>  | 1/10 Duty<br>10KHz | Yellow Green | 100     | mA    |
| Reverse Voltage Per Segment      | V <sub>R</sub>   | —                  | Yellow Green | 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 | —      | 2.00 | 2.60  | 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 | 1751   | 3500 | 6100  | μcd   |
| Peak Emission Wave Length                              | λ <sub>p</sub>   | I <sub>F</sub> =20mA | Per Segment | —      | 568  | —     | nm    |
|                                                        | λ <sub>D</sub>   |                      |             |        | 571  |       |       |
| Spectral Line Half Width                               | △λ               | I <sub>F</sub> =20mA | Per Segment | —      | 20   | —     | 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 |
|------|--------|----------------------|------|------|------|
| I    | I      | I <sub>F</sub> =10mA | 1751 | 2350 | μcd  |
| J    | J      | I <sub>F</sub> =10mA | 2351 | 3050 | μcd  |
| K    | K      | I <sub>F</sub> =10mA | 3051 | 4000 | μcd  |
| L    | L      | I <sub>F</sub> =10mA | 4001 | 5000 | μcd  |
| M    | M      | I <sub>F</sub> =10mA | 5001 | 6100 | μcd  |

## ■ Hue Grade: I<sub>F</sub> =10mA (Hue:+/-1nm)

| Rank | Symbol | Hue Range   | Units |
|------|--------|-------------|-------|
| 3    | 3      | 569.1~571.0 | nm    |
| 4    | 4      | 571.1~573.0 | nm    |

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

## ■ Typical Elector-Optical Characteristics Curve:

Fig 1. Forward Current vs. Forward Voltage

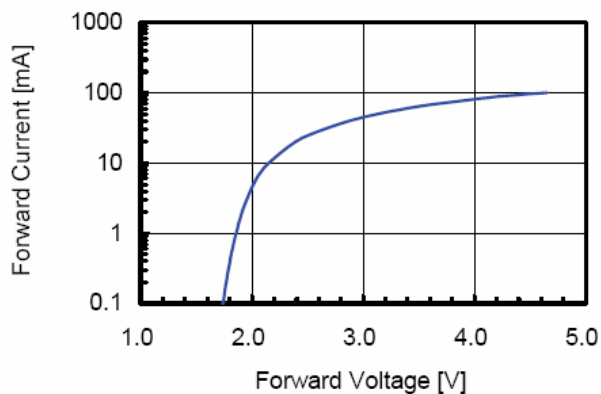


Fig 2. Relative Intensity vs. Forward Current

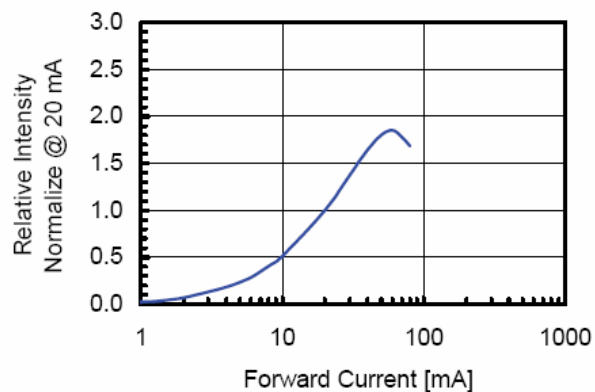


Fig 3. Forward Voltage vs. Temperature

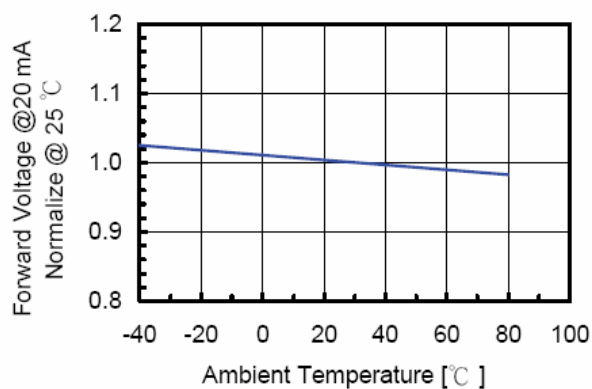


Fig 4. Relative Intensity vs. Temperature

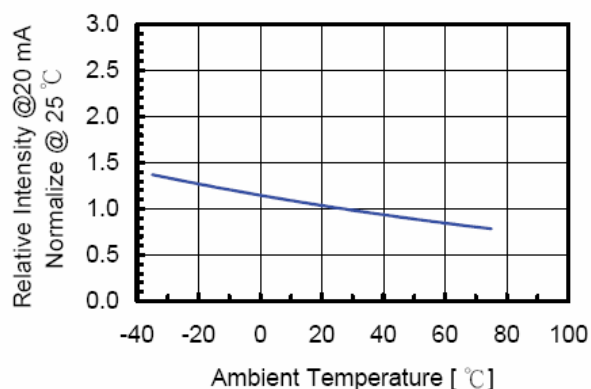
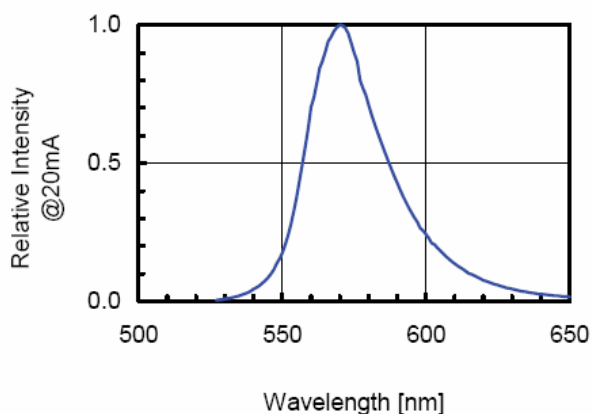


Fig 5. Relative Intensity vs. Wavelength



# WCN Opto Group Co., Limited

## 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:

102 pcs / Red Expandable Polyethylene.

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

3660 pcs / Carton(550\*380\*280mm).

## Packing method B:

20 pcs / IC Tube.(520\*24.2\*19)

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

3360 pcs / Carton(550\*380\*280mm).