



## WCN Opto Group Co., Limited

Customer Name:

Date:

2023-5-29

Part No:

WCN1S-1056PG-A1R

Product Group  
Description:

LED Display

Customer Part No:

Approval Date:

Customer  
Confirmation

Approved by

William  
2023-5-29

Checked by

Athena  
2023-5-29

Prepared By

Zhang  
2023-5-29

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RoHS



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# WCN Opto Group Co., Limited

## REVISION RECORD

| MARKER | Matter for revision | SHEET      | DTAE      | MAKER | APPOVED SIGN |         |
|--------|---------------------|------------|-----------|-------|--------------|---------|
|        | Reason for revision |            |           |       |              |         |
| A0     | P# WCN1S-1056PG-A1R | Whole Spec | 2023-5-29 | Zhang | Athena       | William |
|        | New Version issued  |            |           |       |              |         |
|        |                     |            |           |       |              |         |
|        |                     |            |           |       |              |         |
|        |                     |            |           |       |              |         |
|        |                     |            |           |       |              |         |
|        |                     |            |           |       |              |         |
|        |                     |            |           |       |              |         |
|        |                     |            |           |       |              |         |
|        |                     |            |           |       |              |         |

**1. Type No./Manufacture's Name**

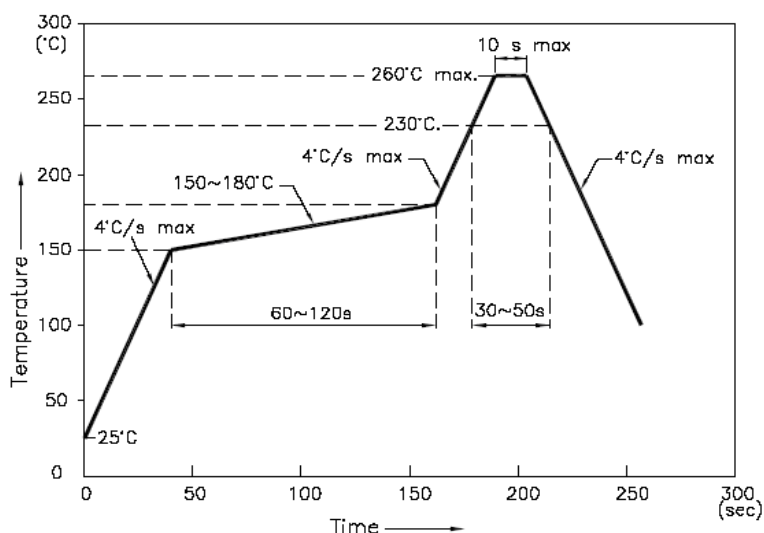
WCN1S-1056PG-A1R / WCN Opto Group Co., Limited.

**2. Features:**

- High Reliability
- Low Power Requirement
- Easy Assembly

**3. Faction: Display Digit Characteristic****4. Soldering Conditions: Soldering Temp.  $260 \pm 5$  °C, Soldering Time. 3~5 sec.**

Soldering Power <30 W.

**5. Re-flow Temp/Time****NOTES:**

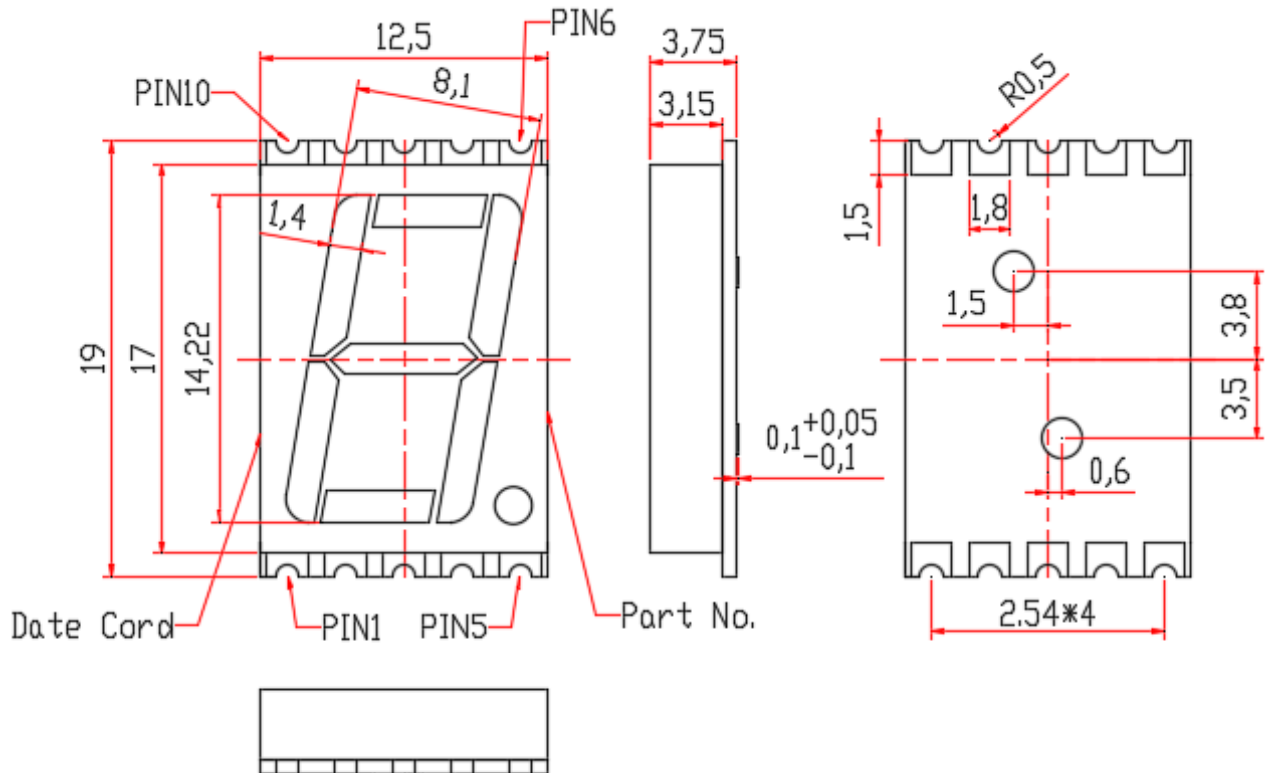
5.1. We recommend the re-flow temperature  $245^{\circ}\text{C} (\pm 5^{\circ}\text{C})$ . the maximum soldering temperature should be limited to  $260^{\circ}\text{C}$ .

5.2. Don't cause stress to the epoxy resin while it is exposed to high temperature. Number of re-flow process shall be 2 times or less.

**6. Description:**

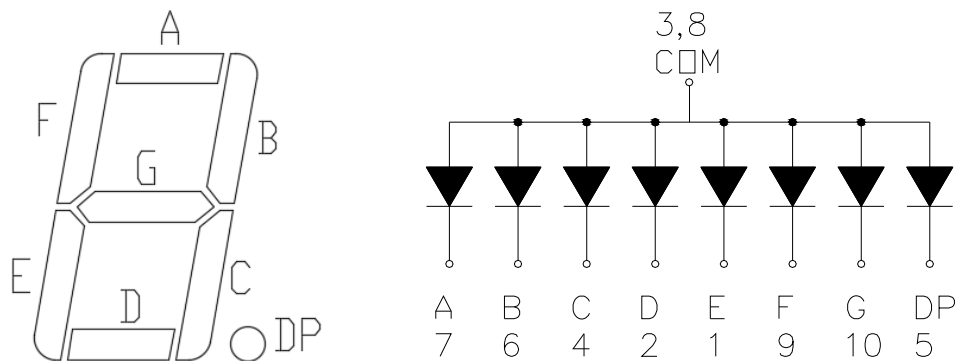
- Single Digit LED Display
- Digit Height: 14.2mm (0.56" )
- Gray Face and Milky Segment
- Color: Pure Green

## 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 E    | 6       | Cathode B    |
| 2       | Cathode D    | 7       | Cathode A    |
| 3       | Common Anode | 8       | Common Anode |
| 4       | Cathode C    | 9       | Cathode F    |
| 5       | Cathode DP   | 10      | Cathode G    |

## ■ ABSOLUTE MAXIMUM RATINGS AT TA=25°C

| Parameter                        | Symbol           | Condition         | Color      | Rating   | Units |
|----------------------------------|------------------|-------------------|------------|----------|-------|
| Power Dissipation Per Segment    | P <sub>d</sub>   | —                 | Pure Green | 92.5     | mW    |
| Forward Current Per Segment      | I <sub>F</sub>   | —                 | Pure Green | 25       | mA    |
| Peak Forward Current Per Segment | I <sub>FP</sub>  | 1/10 Duty<br>1KHz | Pure Green | 100      | mA    |
| Reverse Voltage Per Segment      | V <sub>R</sub>   | —                 | Pure Green | 5        | V     |
| Operating Temperature Range      | T <sub>opr</sub> | —                 | —          | -40~+105 | °C    |
| Storage Temperature Range        | T <sub>stg</sub> | —                 | —          | -40~+105 | °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 Chip | 2.60   | 3.2  | 3.7   | V     |
| Reverse Current                                           | I <sub>R</sub>   | V <sub>R</sub> =5V   | Per Chip | —      | —    | 100   | μA    |
| Luminous Intensity                                        | I <sub>V</sub>   | I <sub>F</sub> =10mA | Per Chip | 300    | 450  | 600   | mcd   |
| Wave Length                                               | λ <sub>P</sub>   | I <sub>F</sub> =20mA | Per Chip | —      | —    | —     | nm    |
|                                                           | λ <sub>D</sub>   |                      |          | —      | 525  | —     |       |
| Spectral Line Half Width                                  | △λ               | I <sub>F</sub> =20mA | Per Chip | —      | —    | 20    | nm    |
| Luminous Intensity Matching Ratio<br>(Segment To Segment) | I <sub>v-m</sub> | I <sub>F</sub> =10mA |          |        |      | 1.2:1 |       |

## Typical Optical-Electronic Characteristic Curves

Fig.1-Relative Luminous Intensity vs. Forward Current

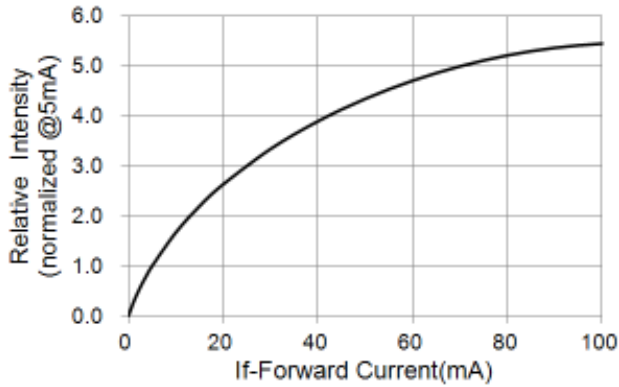


Fig.2-Forward Current vs. Forward Voltage

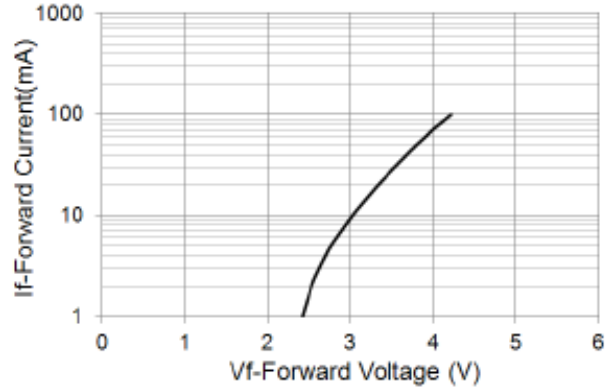


Fig.3-Relative Intensity(@5mA) vs. Ambient Temperature

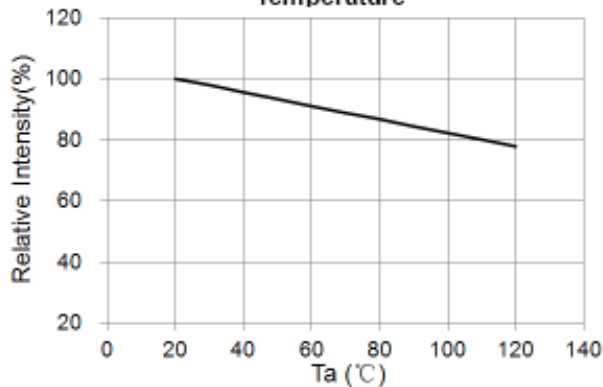


Fig.4- Forward Voltage (@5mA) vs. Ambient Temperature

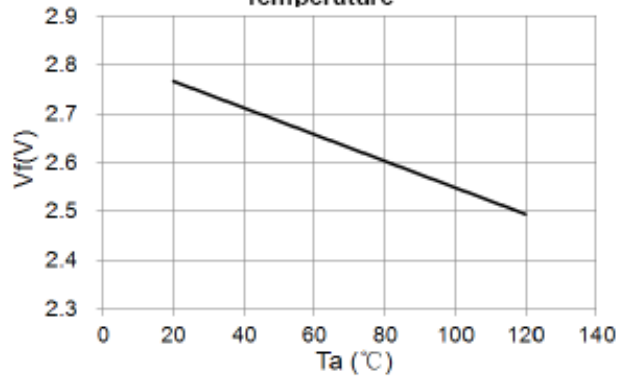


Fig.5- Dominant Wavelength (@5mA) vs. Ambient Temperature

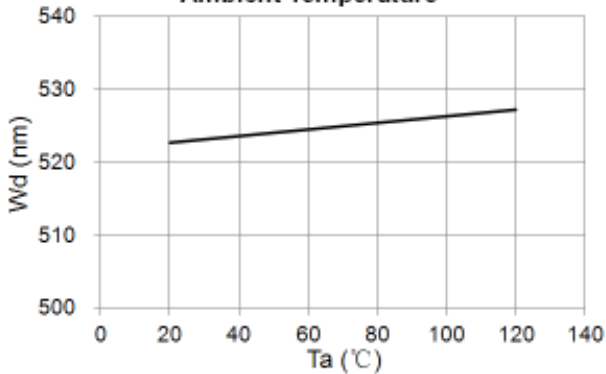
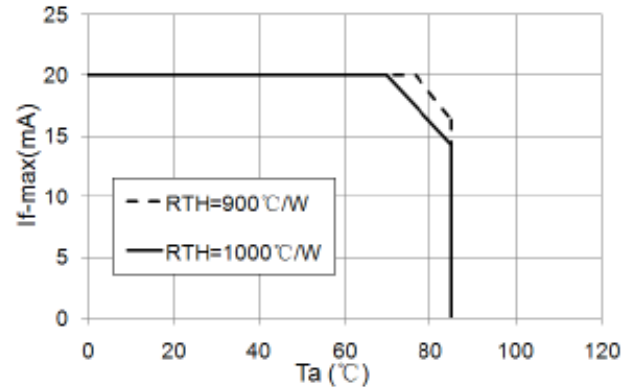
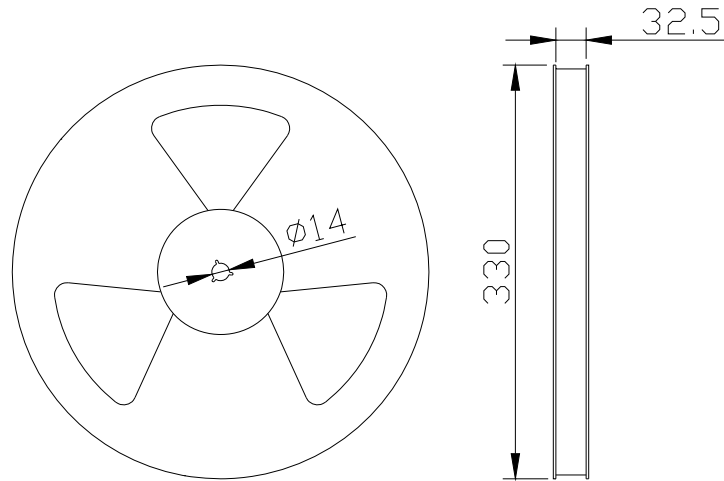


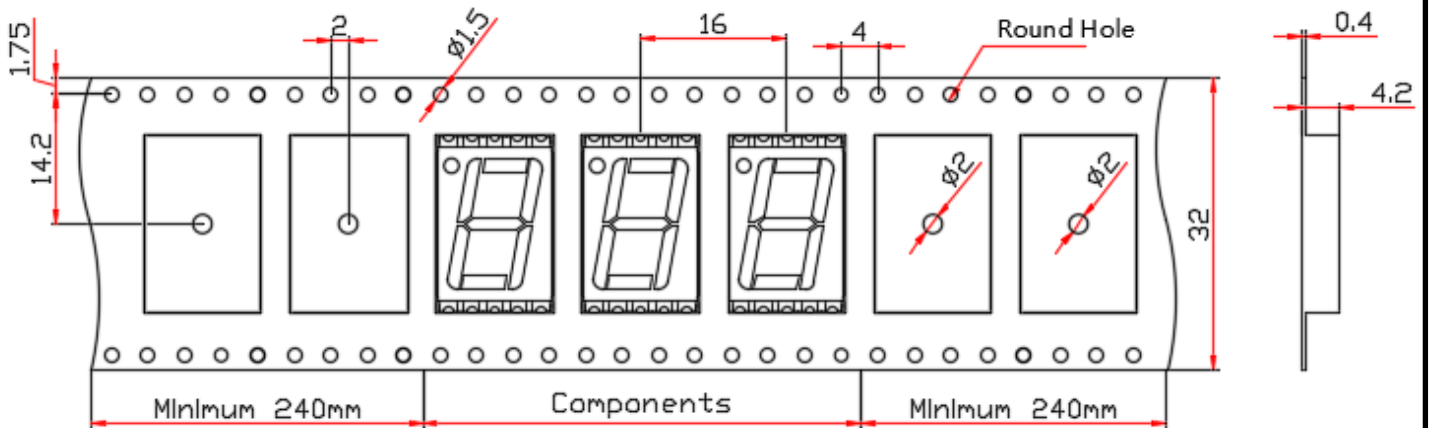
Fig.6-Maximum Driving Forward DC Current vs. Ambient Temperature ( Derating based on Ti max=125°C)



■ **Packing Reel Dimensions(mm):**

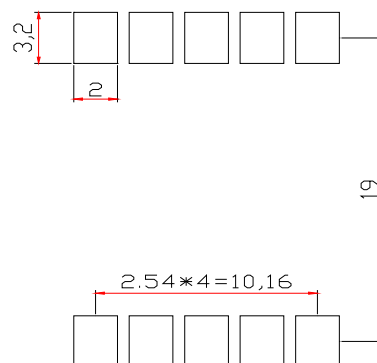


■ **Dimensions of Tape (Unit: mm)**



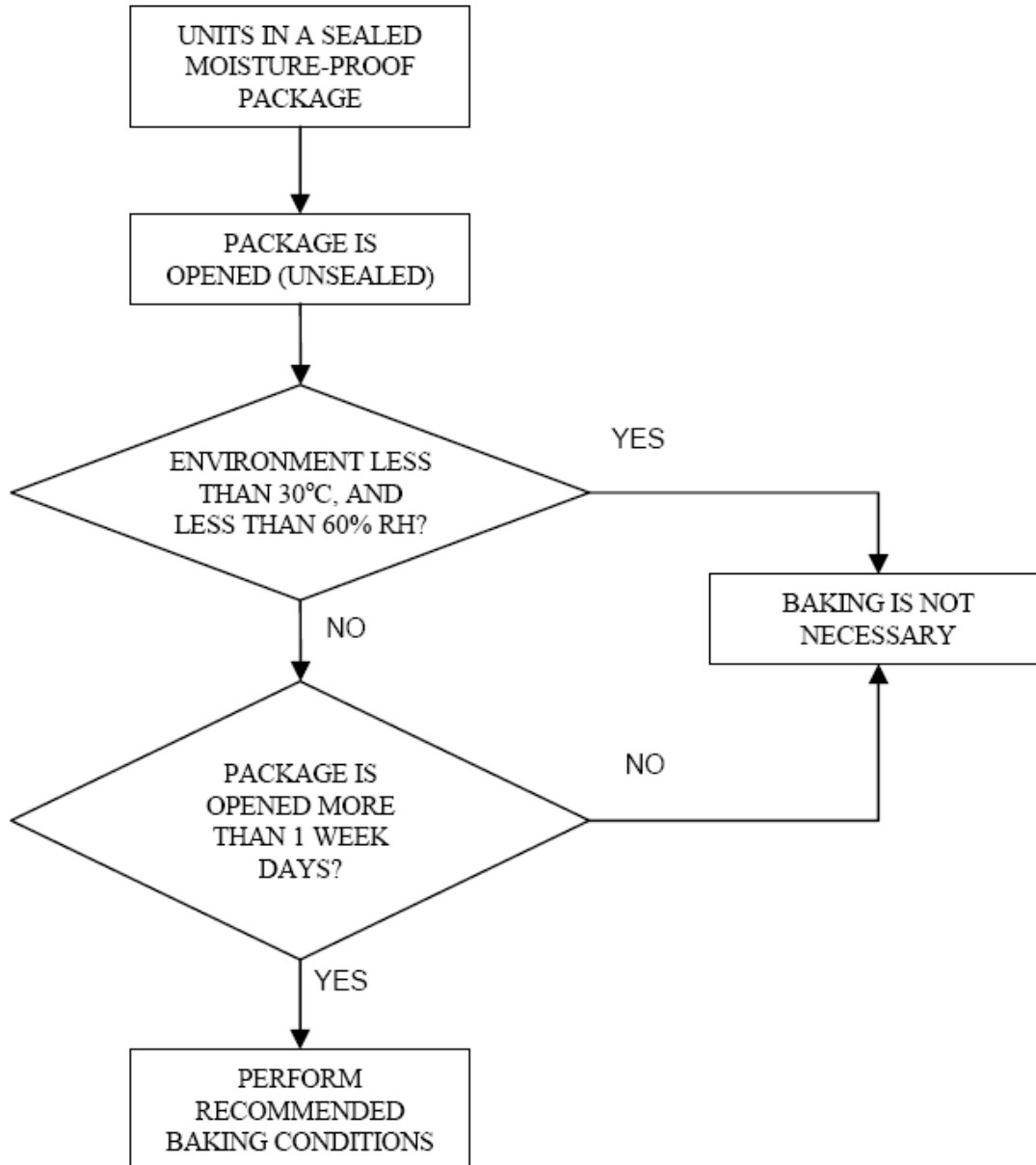
■ **One Reel contained 1000 PCS products:**

■ **Recommended Soldering Pattern:**



**Moisture Proof Packaging:**

All N/D SMD displays are shipped in moisture proof package. The displays should be stored at 30°C or less and 60% RH or less. Once the package opened, moisture absorption begins.

**Baking Conditions:**

If the parts not stored in dry conditions, they must be baked before re-flow to prevent damage to the parts.

| Package | Temperature | Time     |
|---------|-------------|----------|
| In Reel | 60 °C       | ≥48hours |
| In Bulk | 100 °C      | ≥4hours  |
|         | 125 °C      | ≥2hours  |

**Baking should only be done once.**