WCN Opto Group Co., Limited

# WCN-5721SD-DA13

# SPECIFICATION

| WCN | | | CUSTOMER Confirmed |
|---|---|---|---|
| Prepared by | Checked by | Approved by | |
| Fei<br>2016-3-28 | Athena | | |
| REVISION RECORD | | | |

RoHS

恒盛源光电科技(深圳)有限公司 开发部 WCN

REVISION: A0

# WCN Opto Group Co., Limited

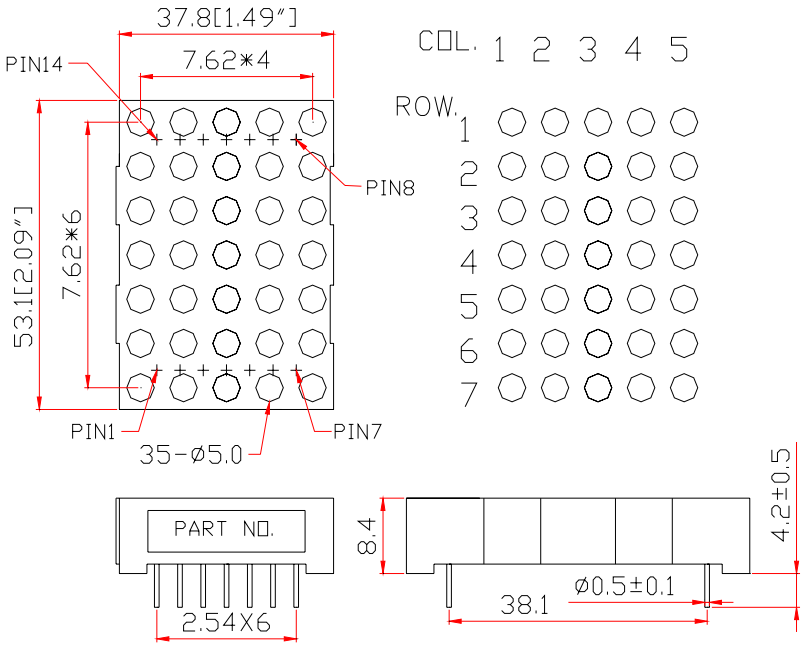
## ■ Features:

- . High Reliability
- . Color : Super Bright Red
- . Low Power Requirement
- . Flat Package and Light Weight
- . Easy Assembly

## ■ Description:

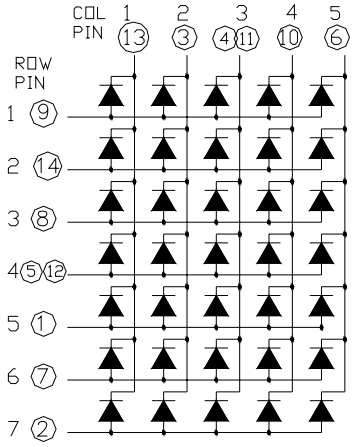
- . 5X7 LED Dot Matrix
- . $\phi$ 5 mm Dot and Pitch 7.62 mm
- . Gray Face and Milky Dots

## ■ Outer Dimension:




**Notes : Unless otherwise stated, The tolerance is ±0.25mm.**

## ■ Circuit Diagram



■ **Absolute Maximum Rating (Ta=25℃) / Per Dice:**

| Parameter | Symbol | Condition | Color | Rating | Units |
|---|---|---|---|---|---|
| Maximal Power Dissipation (When completely Lighting) | $P_d$ | — | Red | 65 | mW |
| Maximal Forward Current (When completely Lighting) | $I_F$ | — | Red | 25 | mA |
| Peak Forward Current | $I_{FP}$ | 1/8Duty 10khz | Red | 100 | mA |
| Reverse Voltage | $V_R$ | — | Red | 5 | V |
| Operating Temperature Range | Topr | — | — | -40～+85 | ℃ |
| Storage Temperature Range | Tstg | — | — | -40～+85 | ℃ |

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

| Item | Symbol | Test conditions | Location | Rating | | | Units |
|---|---|---|---|---|---|---|---|
| | | | | Min. | Typ. | Max. | |
| Forward Voltage | $V_F$ | $I_F$=20mA | Per Dice | 1.80 | 2.0 | 2.60 | V |
| Reverse Current | $I_R$ | $V_R$=5V | Per Dice | — | — | 100 | μA |
| Luminous Intensity | $I_V$ | $I_F$=10mA | Per Dice | 8.501 | 13.5 | 21.5 | mcd |
| Wave Length | $\lambda_P$ | $I_F$=20mA | Per Dice | — | 660 | — | nm |
| | $\lambda_d$ | | | | 640 | | |
| Spectral Line Half Width | △λ | $I_F$=20mA | Per Dice | — | 20 | — | nm |
| Luminous Intensity Matching Ratio (Dot To Dot) | $I_{V-M}$ | 1/8Duty $I_{FP}$ =40mA | | | | 1.2:1 | |

■ **Luminous Intensity Sorting (1/8Duty ; $I_{FP}$ =40mA ;The Tolerance is +/-10%)**

| BIN / Color | P | Q | R | S | T |
|---|---|---|---|---|---|
| Red ( mcd ) | 8.501-10.500 | 10.501-12.8 | 12.801-15.25 | 15.251-18.0 | 18.001-21.5 |

■**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:

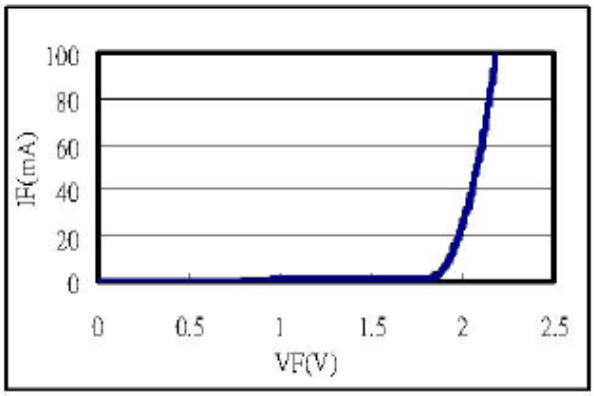



Fig2. Forward Current vs. Relative Intensity:

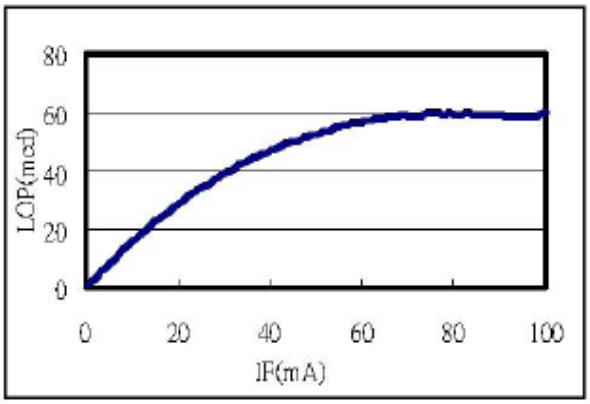



Fig3. Forward Current vs. Relative Wavelength:

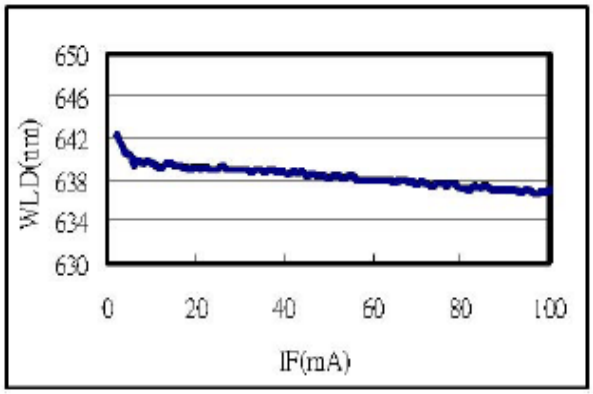



Fig4. Temperature vs. Relative Intensity:

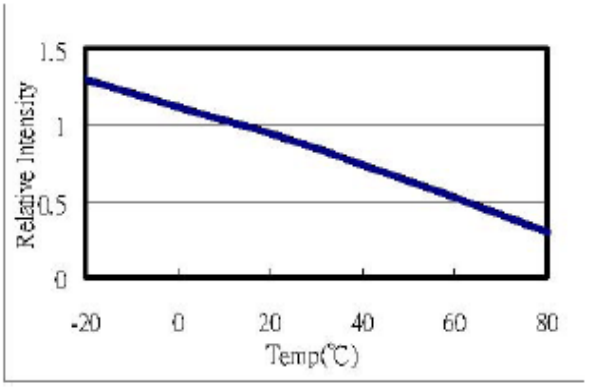



Fig5. Temperature vs. Relative Wavelength:

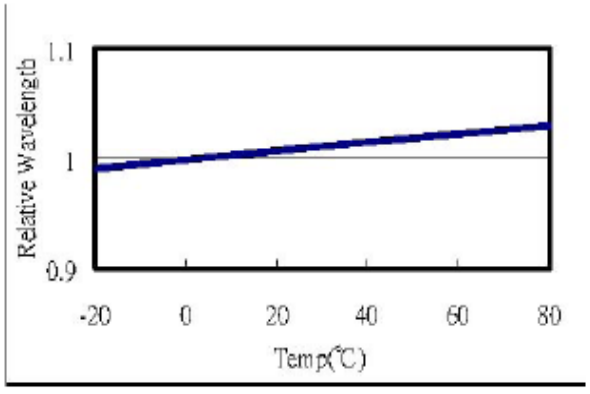
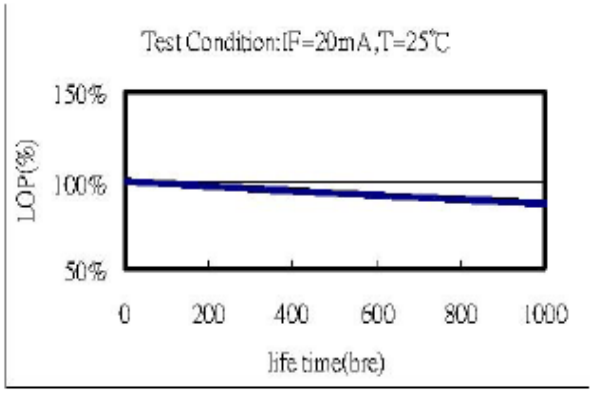



Fig6. Life Test at 20mA R.T. 1000hrs:



## 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>$T_a$ = UNDER ROOM TEMPERATURE<br>$I_F = I_F$ max |
| | HIGH TEMPERATURE HIGH HUMIDITY STORAGE | EVALUATES MOISTURE RESISTANCE OF THE DEVICE WHEN STORED FOR A LONG TERM AT HIGH TEMPERATURE AND HUMIDITY<br>$T_a$ =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>$T_a$ =85±5°C(COB: Ta=65±5°C)<br>TEST TIME=1000Hrs(-24Hrs, +72Hrs) |
| | IOW TEMPERATURE STORAGE | EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN LOW TEMPERATURE<br>$T_a$ =-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:

**36 pcs / Expandable Polyethylene.**
**468 pcs / Box(360*260*255mm).**
**936 pcs / Catton(550*380*280mm).**