



WCN Opto Group Co., Limited

WCN-21616R5-CC01-F

SPECIFICATION

| WCN | | | CUSTOMER Confirmed |
|------------------|------------|-------------|-----------------------|
| Prepared by | Checked by | Approved by | |
| Fei 2016-4-16 | Athena | | |
| REVISION RECORD | | | |



REVISION: A0

WCN Opto Group Co., Limited

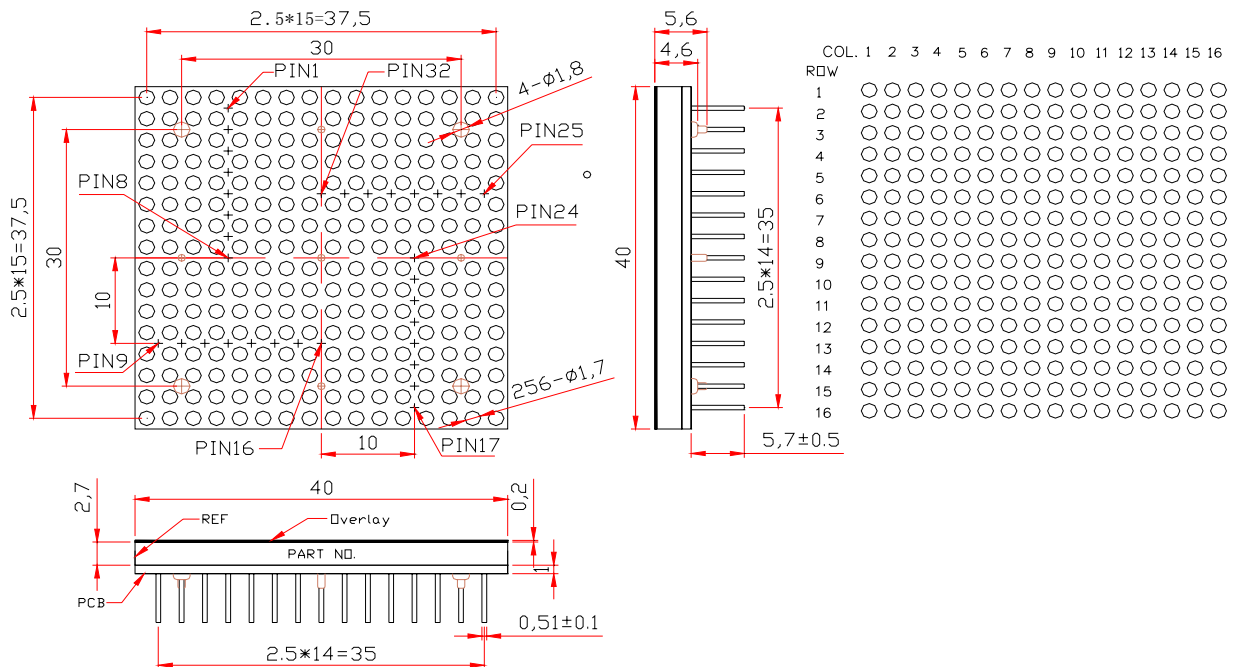
Features:

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

Description:

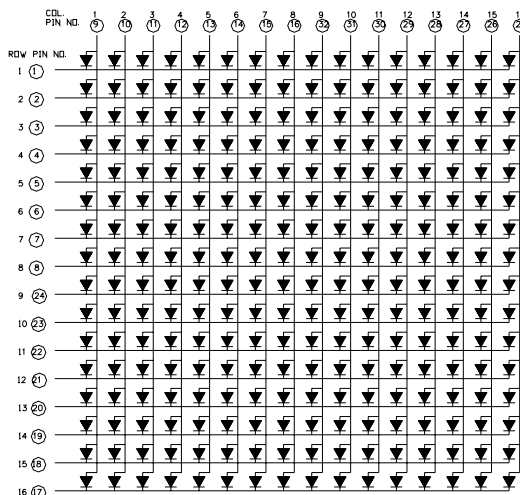
- 16x16 LED Dot Matrix
- ϕ 1.7 mm Dot and Pitch 2.5 mm
- Black Face and Air Dots and Spread Overlay

Outer Dimension:



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

Circuit Diagram



■ Absolute Maximum Rating (Ta=25°C) / 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 | °C |
| Storage Temperature Range | Tstg | — | — | -40~+85 | °C |

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

| 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 | 3.501 | 5.5 | 8.5 | mcd |
| Wave Length | λ _p | I _F =20mA | Per Dice | — | 650 | — | nm |
| | λ _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 | K | L | M | N | O |
|--------------|-----------|-----------|-----------|-----------|-----------|
| Red (mcd) | 3.501-4.0 | 4.001-5.0 | 5.001-6.1 | 6.101-7.2 | 7.201-8.5 |

■ Soldering Conditions: Soldering Temp. ≤+260°C

Soldering Time. ≤3sec.

(at 2mm Distance from The Case of Reflector Edge)

■ **Typical Elector-Optical Characteristics Curve:**

Fig1. Forward Current vs. Forward Voltage:

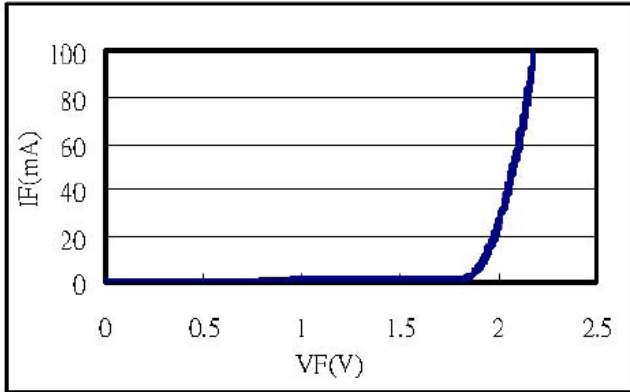


Fig2. Forward Current vs. Relative Intensity:

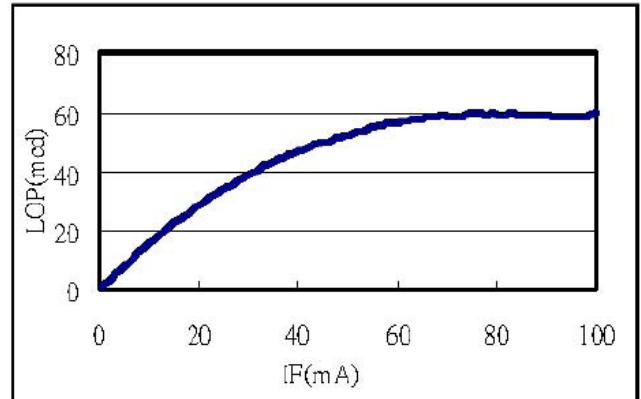


Fig3. Forward Current vs. Relative Wavelength:

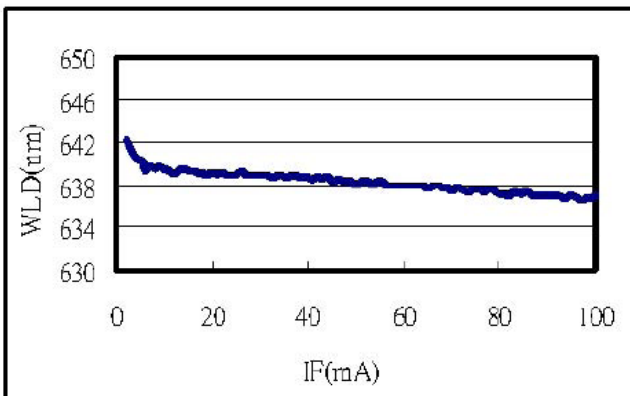


Fig4. Temperature vs. Relative Intensity:

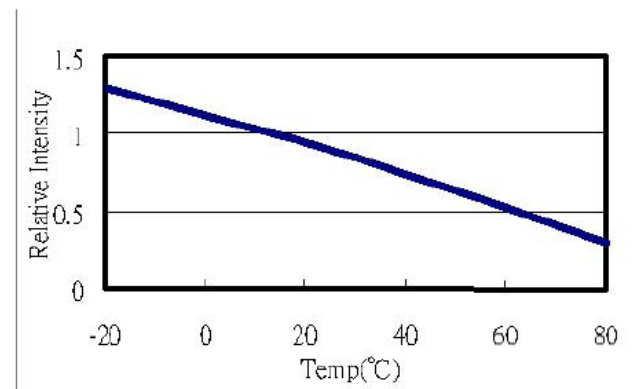


Fig5. Temperature vs. Relative Wavelength:

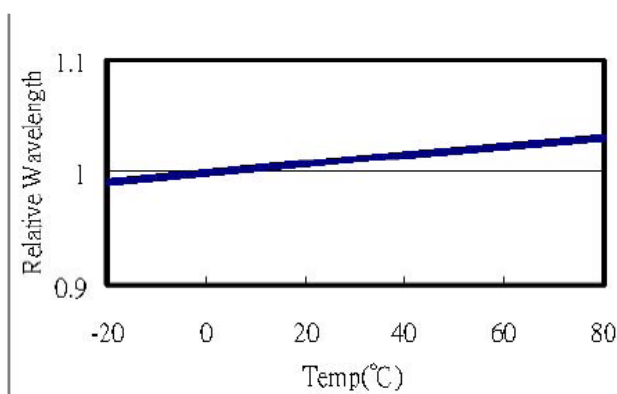
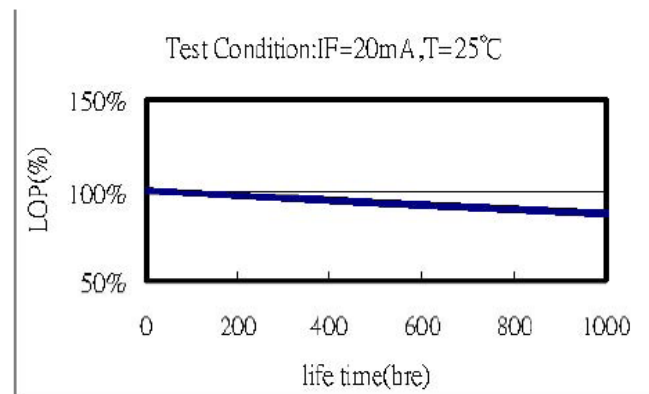


Fig6. Life Test at 20mA R.T. 1000hrs:



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

Package Pattern 1:

32 pcs / Expandable Polyethylene.

220 pcs / Box(360*175*130mm).

1320 pcs / Carton(550*380*280mm).