



**WCN Opto Group Co., Limited**

# **WCN-21616SD-DC02**

## **SPECIFICATION**

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



**REVISION: A0**

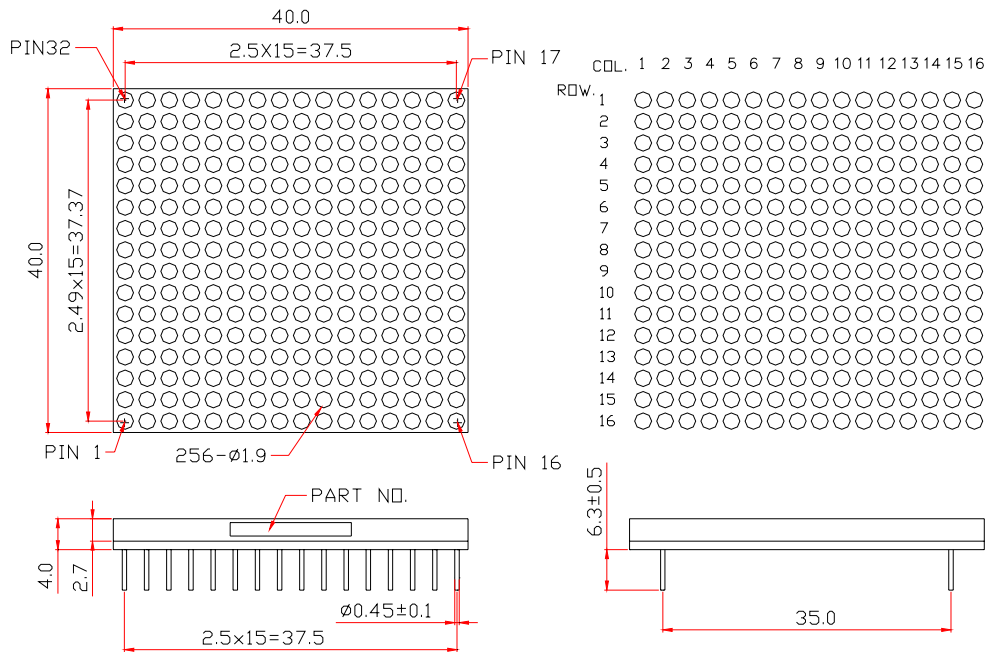
## Features:

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

## Description:

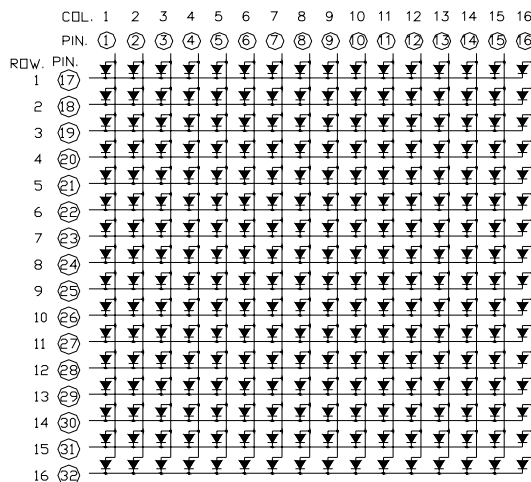
- 16x16 LED Dot Matrix
- $\phi$  1.9 mm Dot and Pitch 2.5 mm
- Black Face and Milky Dots

## Outer Dimension:



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

## Circuit Diagram



■ Absolute Maximum Rating (Ta=25°C) / Per Dice:

Parameter	Symbol	Condition	Color	Rating	Units
Maximal Power Dissipation (When completely Lighting)	P <sub>d</sub>	—	Red	65	mW
Maximal Forward Current (When completely Lighting)	I <sub>F</sub>	—	Red	25	mA
Peak Forward Current	I <sub>FP</sub>	1/8Duty 10khz	Red	100	mA
Reverse Voltage	V <sub>R</sub>	—	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 <sub>F</sub>	I <sub>F</sub> =20mA	Per Dice	1.80	2.0	2.60	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	Per Dice	—	—	100	μA
Luminous Intensity	I <sub>V</sub>	I <sub>F</sub> =10mA	Per Dice	4.001	6.5	10.5	mcd
Wave Length	λ <sub>P</sub>	I <sub>F</sub> =20mA	Per Dice	—	660	—	nm
	λ <sub>d</sub>				640		
Spectral Line Half Width	△λ	I <sub>F</sub> =20mA	Per Dice	—	20	—	nm
Luminous Intensity Matching Ratio (Dot To Dot)	I <sub>V-M</sub>	1/8Duty I <sub>FP</sub> =40mA				1.2:1	

■ Luminous Intensity Sorting (1/8Duty ; I<sub>FP</sub> =40mA ;The Tolerance is +/-10%)

BIN Color	L	M	N	O	P
Red ( mcd )	4.001-5.000	5.001-6.100	6.101-7.20	7.201-8.500	8.501-10.500

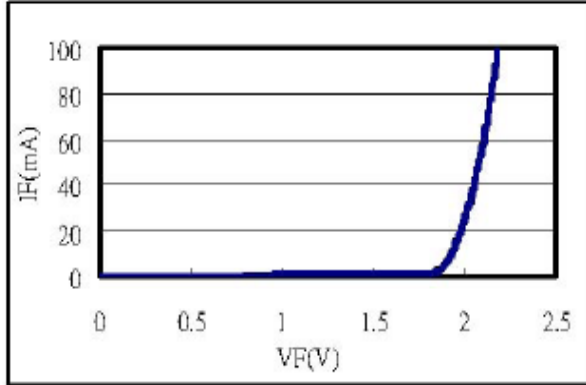
■ Soldering Conditions: Soldering Temp. ≤+260°C

Soldering Time. ≤3sec.

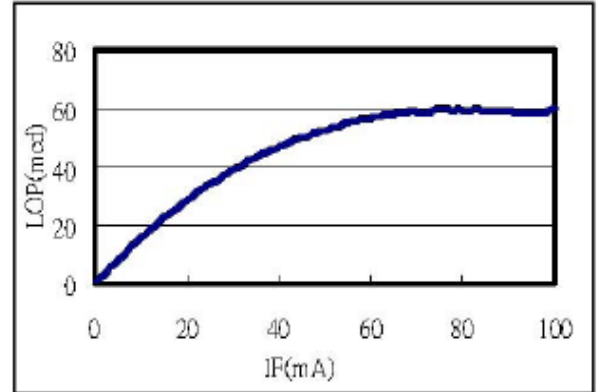
( at 2mm Distance from The Case of Reflector Edge)

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

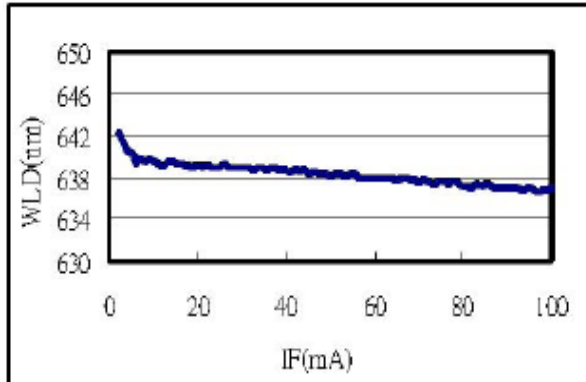
**Fig1. Forward Current vs. Forward Voltage:**



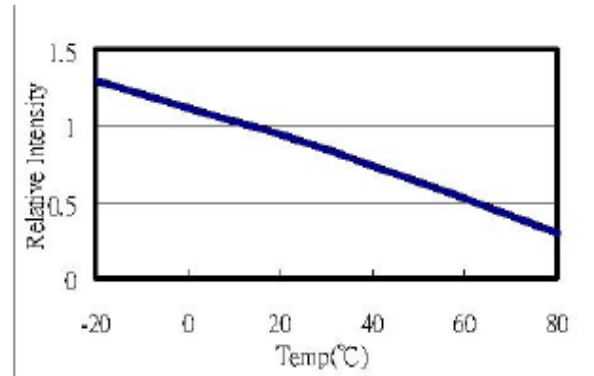
**Fig2. Forward Current vs. Relative Intensity:**



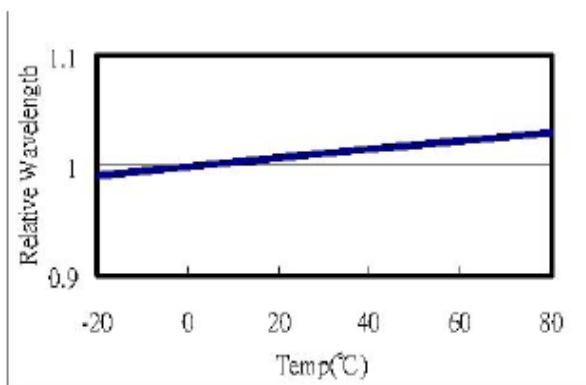
**Fig3. Forward Current vs. Relative Wavelength:**



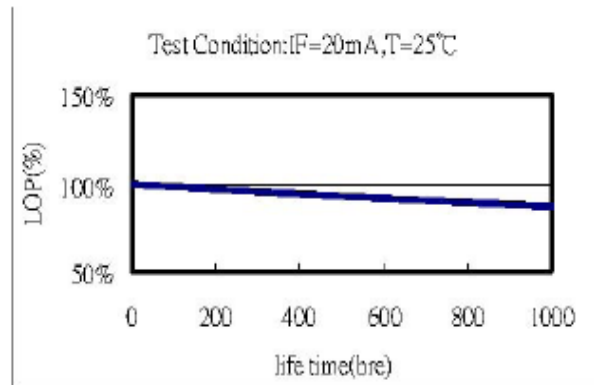
**Fig4. Temperature vs. Relative Intensity:**



**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 <sub>a</sub> = UNDER ROOM TEMPERATURE 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 T <sub>a</sub> = 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 <sub>a</sub> = 85±5°C(COB: T <sub>a</sub> =65±5°C) TEST TIME=1000Hrs(-24Hrs, +72Hrs)
	LOW TEMPERATURE STORAGE	EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN LOW TEMPERATURE T <sub>a</sub> = -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 <sub>hot</sub> =65°C, T <sub>cold</sub> =-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 <sub>hot</sub> =65°C, T <sub>cold</sub> =-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.

## Packing method A:

32 pcs / Expandable Polyethylene.

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

1320 pcs / Catton(550\*380\*280mm).