



WCN Opto Group Co., Limited

# WCN-8819SD-DA01

## SPECIFICATION

WCN			CUSTOMER Confirmed
Prepared by	Checked by	Approved by	
Fei 2016-7-26	Athena		
REVISION RECORD			



REVISION: A0

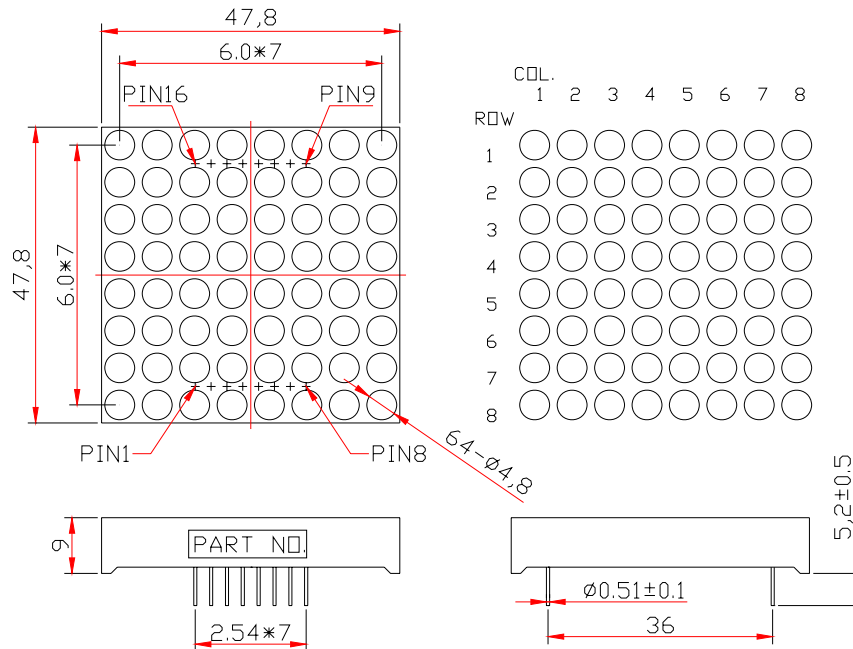
## ■ Features:

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

## ■ Description:

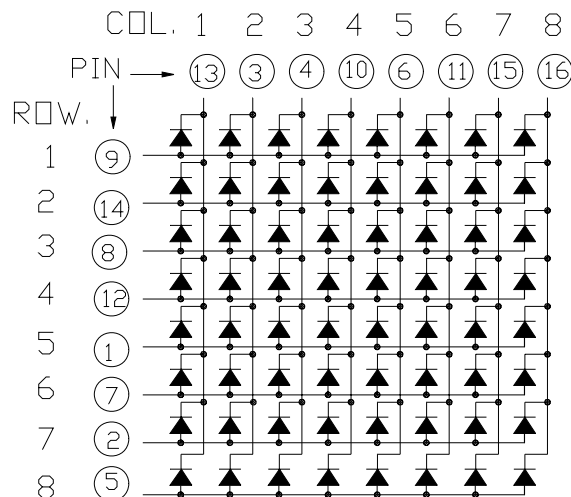
- 8X8 LED Dot Matrix
- $\phi 4.8\text{mm}$  Dot and Pitch 6.5 mm
- Black Face and Milky Dots

## ■ Outer Dimension:



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

## ■ Circuit Diagram



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

Parameter	Symbol	Condition	Color	Rating	Units
Maximal Power Dissipation (When completely Lighting) Per Dot	$P_d$	—	Red	65	mW
Maximal Forward Current (When completely Lighting) Per Dot	$I_F$	—	Red	25	mA
Derating Of If Per Dot	$I_{FP}$	1/8Duty 10khz	Red	100	mA
Peak Forward Current Per Dot	$V_R$	—	Red	5	V
Reverse Voltage Per Dot	$T_{opr}$	—	—	-40~+85	°C
Operating Temperature Range	$T_{stg}$	—	—	-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 Dot	1.80	2.0	2.60	V
Reverse Current	$I_R$	$V_R=5V$	Per Dot	—	—	100	$\mu A$
Luminous Intensity	$I_V$	$I_F=10mA$	Per Dot	8.501	13.5	21.5	mcd
Wave Length	$\lambda_P$	$I_F=20mA$	Per Dot	—	660	—	nm
	$\lambda_d$				640		
Spectral Line Half Width	$\Delta \lambda$	$I_F=20mA$		—	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

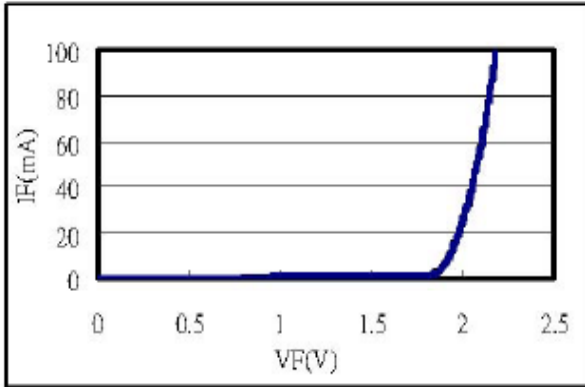
■ **Soldering Conditions: Soldering Temp.  $\leq +260^\circ C$**

Soldering Time.  $\leq 3sec.$

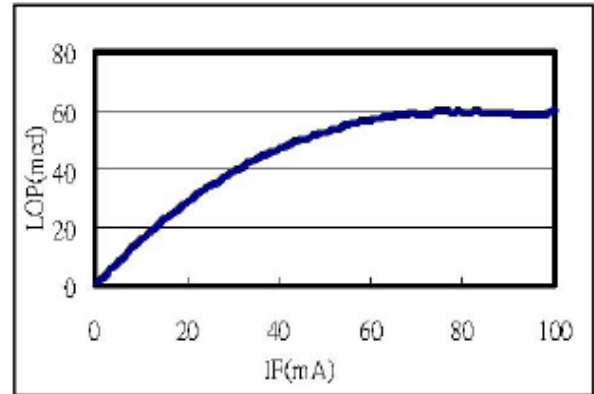
( at 2mm Distance from The Case of Reflector Edge)

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

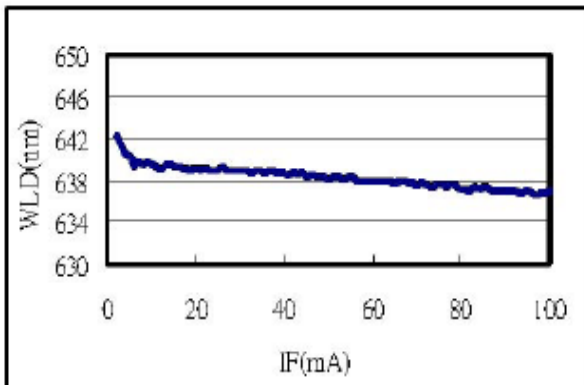
**Fig1. Forward Current vs. Forward Voltage:**



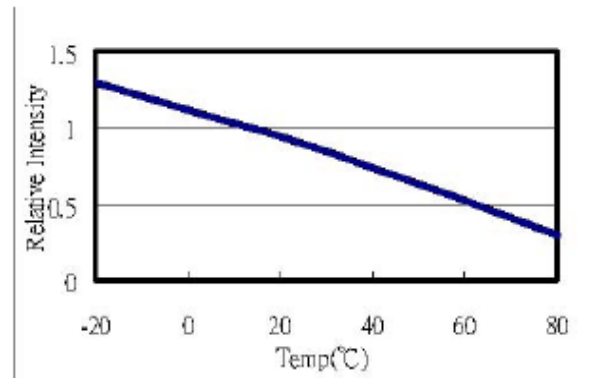
**Fig2. Forward Current vs. Relative Intensity:**



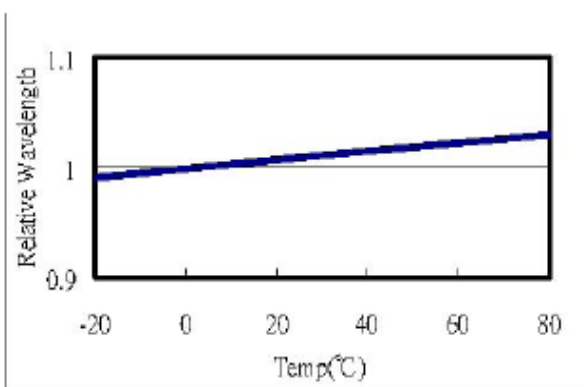
**Fig3. Forward Current vs. Relative Wavelength:**



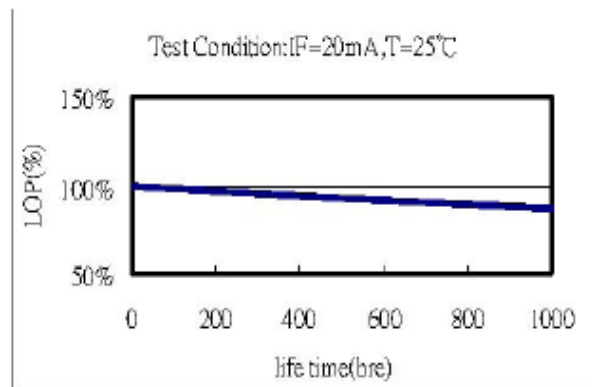
**Fig4. Temperature vs. Relative Intensity:**



**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 $I_f = I_f \text{ max}$
	HIGH TEMPERATURE HIGH HUMIDITY STORAGE	EVALUATES MOISTURE RESISTANCE OF THE DEVICE WHEN STORED FOR A LONG TERM AT HIGH TEMPERATURE AND HUMIDITY $T_a = 65 \pm 5^\circ\text{C}$ RH=90~95%RH TEST TIME=240 $\pm$ 2Hrs
	HIGH TEMPERATURE STORAGE	EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN HIGH TEMPERATURE $T_a = 85 \pm 5^\circ\text{C}$ (COB: $T_a = 65 \pm 5^\circ\text{C}$ ) TEST TIME=1000Hrs(-24Hrs, +72Hrs)
	LOW TEMPERATURE STORAGE	EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN LOW TEMPERATURE $T_a = -35 \pm 5^\circ\text{C}$ TEST TIME=1000Hrs(-24Hrs, +72Hrs)
ENVIRONMENTAL TEST	TEMPERATURE CYCLING	EVALUATES RESISTANCE OF DEVICE AT THERMAL STRESSES OR EXPANSION AND CONTRACTION $85^\circ\text{C} \sim 25^\circ\text{C} \sim -35^\circ\text{C} \sim 25^\circ\text{C}$ 30min 5min 30min 5min 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 $85 \pm 5^\circ\text{C} \sim -35 \pm 5^\circ\text{C}$ 10min 10min 10 CYCLES(COB: $T_{\text{hot}}=65^\circ\text{C}$ , $T_{\text{cold}}=-25^\circ\text{C}$ )
	SOLDERABILITY	EVALUATES SOLDERABILITY ON LEADS OF DEVICE $T_{\text{SOL}}=230 \pm 5^\circ\text{C}$ DWELL TIME=5 $\pm$ 1sec.
	SOLDER RESISTANCE	EVALUATES RESISTANCE TO THERMAL STRESS CAUSED BY SOLDERING $T_{\text{SOL}}=260 \pm 5^\circ\text{C}$ DWELL TIME=10 $\pm$ 1sec.

### Packing method A:

35pcs / Expandable Polyethylene.

380 pcs / Box(360\*260\*255mm).

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