



WCN Opto Group Co., Limited

WCN-7B18R7-DA02-T

SPECIFICATION

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



REVISION: A1

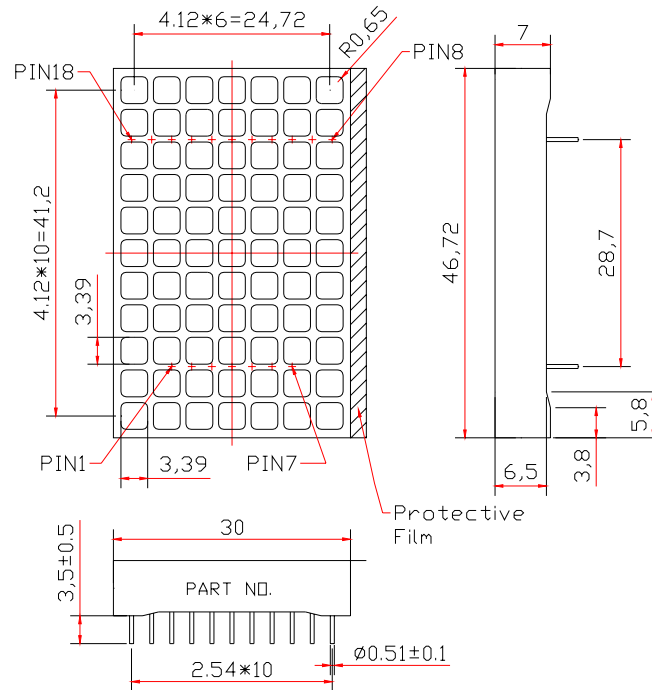
■ Features:

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

■ Description:

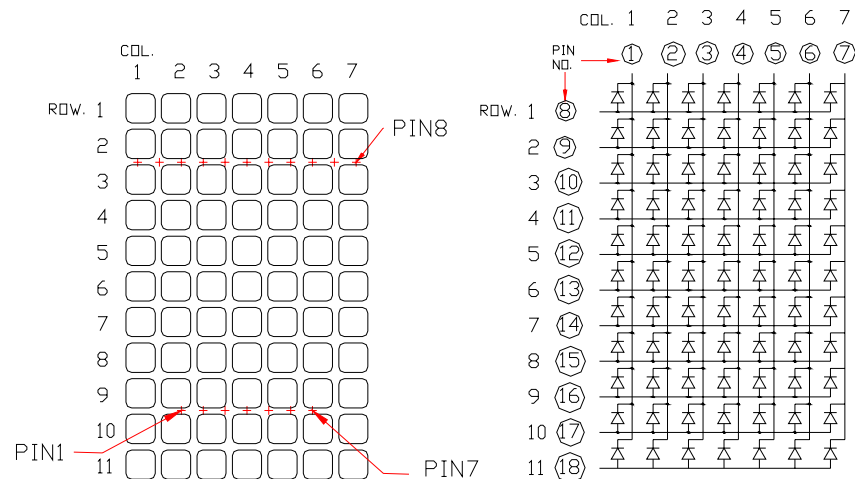
- 7*11 LED Dot Matrix
- 3.39*3.39mm Block and Pitch 4.12 mm
- Black Face and Milky Dots

■ Outer Dimensions



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) 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	Topr	—	—	-40~+85	°C
Operating 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 Dot	1.80	2.0	2.60	V
Reverse Current	I_R	$V_R=5V$	Per Dot	—	—	100	μA
Luminous Intensity	I_V	$I_F=10mA$	Per Dot	12.801	19.5	31.0	mcd
Wave Length	λ_P	$I_F=20mA$	Per Dot	—	630	—	nm
	λ_d				622		
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	R	S	T	U	V
Red (mcd)	12.801-15.250	15.251-18.0	18.001-21.5	21.501-26.0	26.001-31.0

■ **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:**

Fig 1. Forward Current vs. Forward Voltage

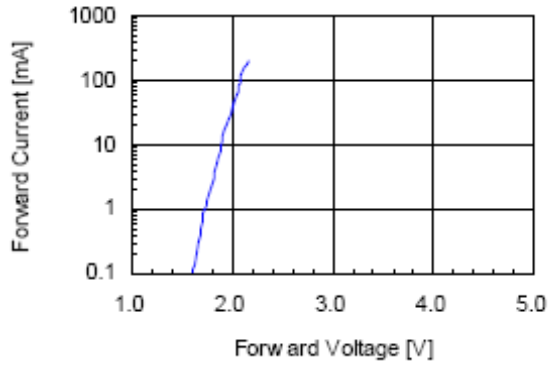


Fig 2. Relative Intensity vs. Forward Current

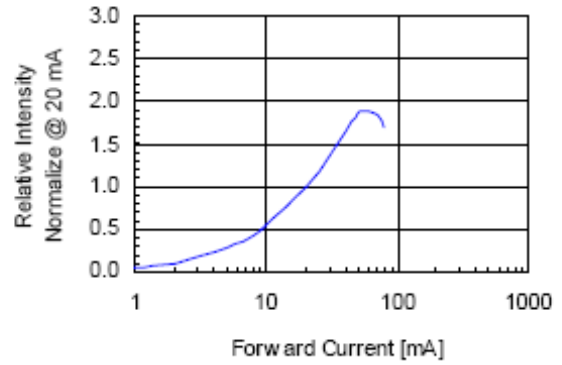


Fig 3. Forward Voltage vs. Temperature

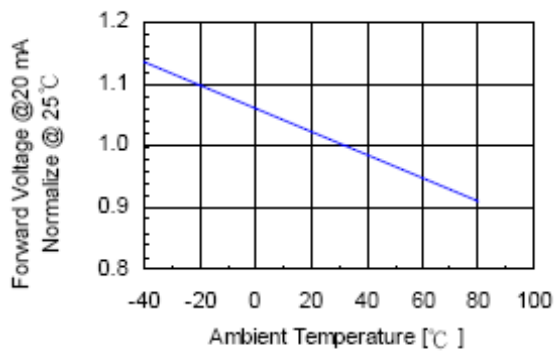


Fig 4. Relative Intensity vs. Temperature

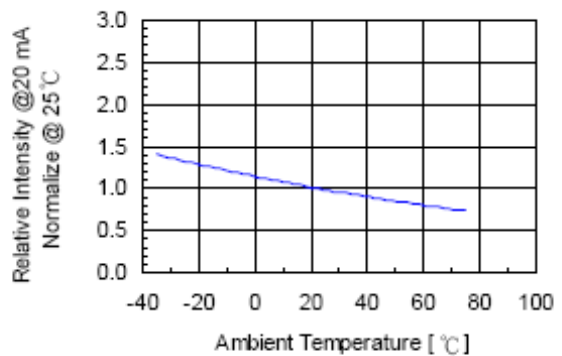
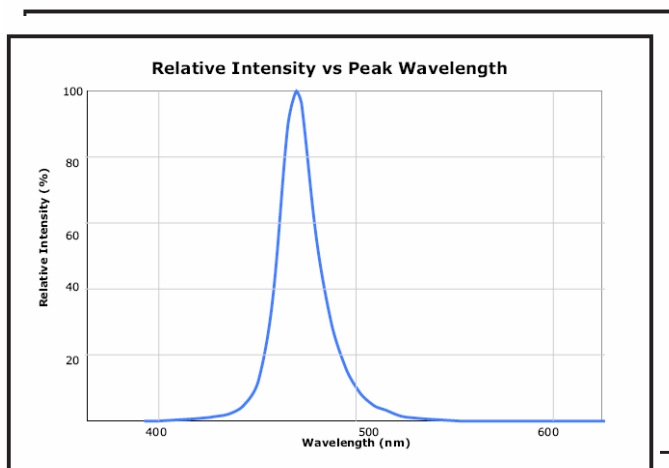


Fig 5. Relative Intensity vs. Wavelength



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:

42pcs / Expandable Polyethylene.

546pcs / Box(360*260*255mm).

1092 pcs / Catton(550*380*280mm).