



WCN Opto Group Co., Limited

WCN-7B18SO-DC12

SPECIFICATION

WCN			CUSTOMER Confirmed
Prepared by	Checked by	Approved by	
Fei 2018-2-28	Athena		
REVISION RECORD			



REVISION: A0

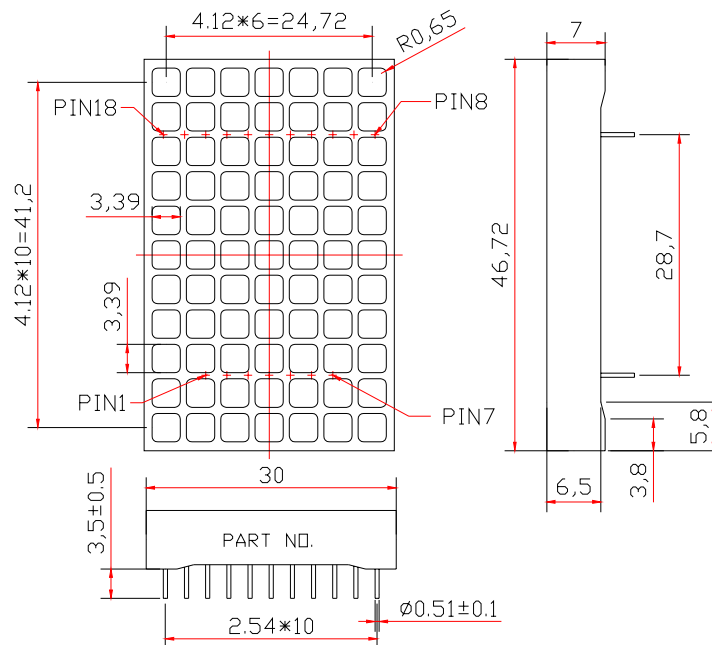
■ Features:

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

■ Description:

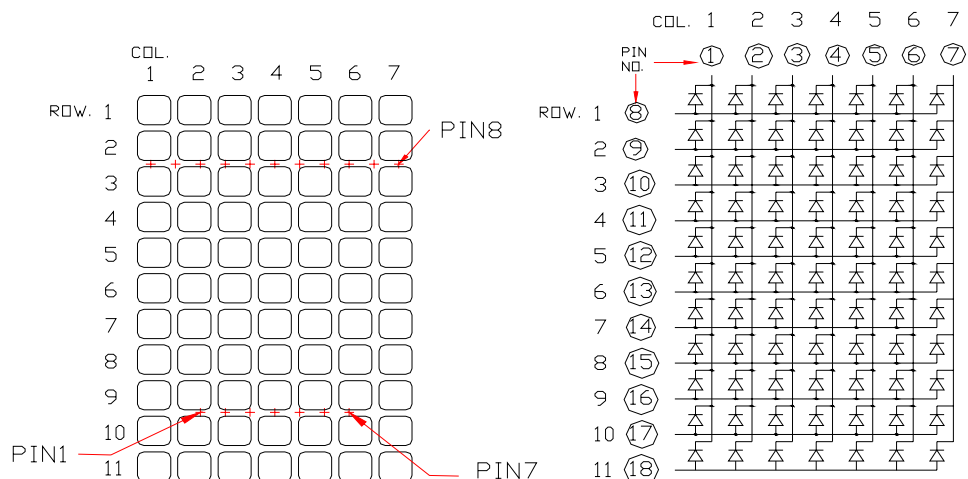
- 7*11LED Dot Matrix
- 3.39*3.39mm Block and Pitch 4.12mm
- Gray Face and Milky Dots

■ Outer Dimension:



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

■ Circuit Diagram





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

Parameter	Symbol	Condition	Color	Rating	Units
Maximal Power Dissipation (When completely Lighting)	P_d	—	Orange	65	mW
Maximal Forward Current (When completely Lighting)	I_F	—	Orange	25	mA
Peak Forward Current	I_{FP}	1/8Duty 10khz	Orange	100	mA
Reverse Voltage	V_R	—	Orange	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	7.201	11.5	18.0	mcd
Wave Length	λ_P	$I_F=20mA$	Per Dice	—	—	—	nm
	λ_d			600	—	607	
Spectral Line Half Width	$\Delta \lambda$	$I_F=20mA$	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	O	P	Q	R	S
Red (mcd)	7.201-8.500	8.501-10.500	10.501-12.8	12.801-15.25	15.251-18.0

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

Soldering Time. $\leq 3sec.$

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

■ Typical Electro-Optical Characteristics Curve:

Fig 1. Forward Current vs. Forward Voltage

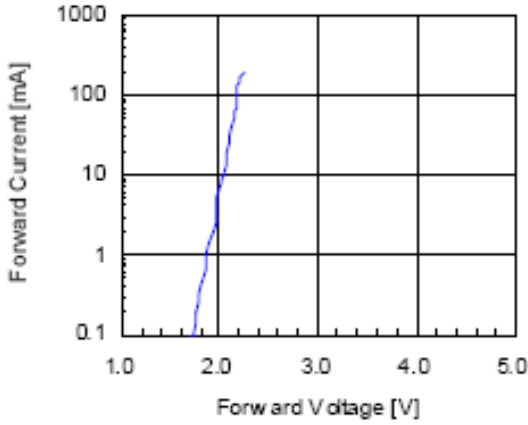


Fig 2. Relative Intensity vs. Forward Current

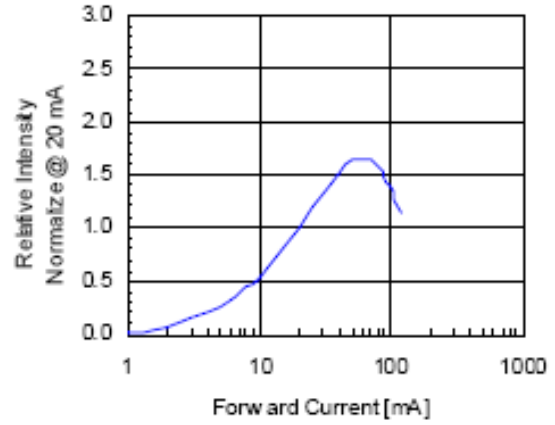


Fig 3. Forward Voltage vs. Temperature

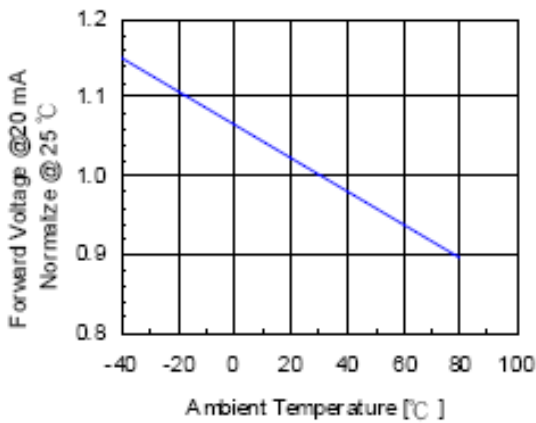


Fig 4. Relative Intensity vs. Temperature

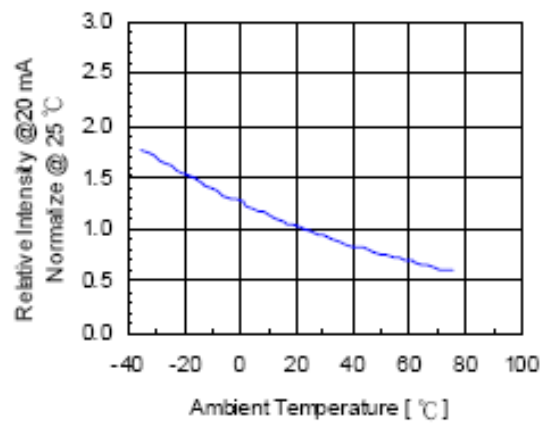
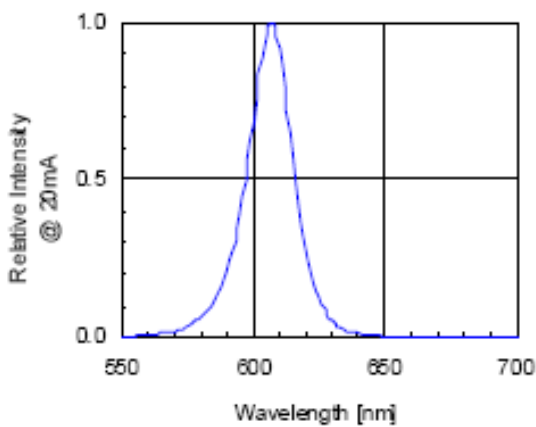


Fig 5. Relative Intensity vs. Wavelength



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.