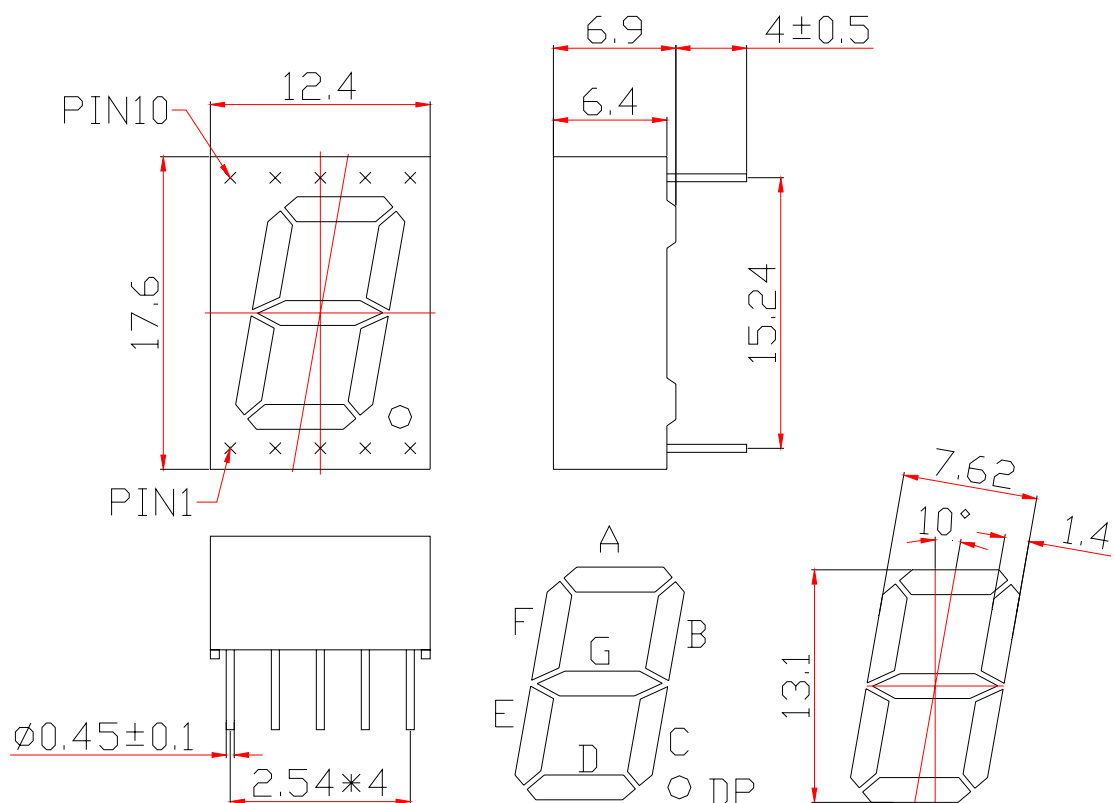


WCN1-1052R7-A31**SPECIFICATION**

WCN			CUSTOMER Confirmed
Prepared by	Checked by	Approved by	
Fei	Athena	William	
REVISION RECORD			

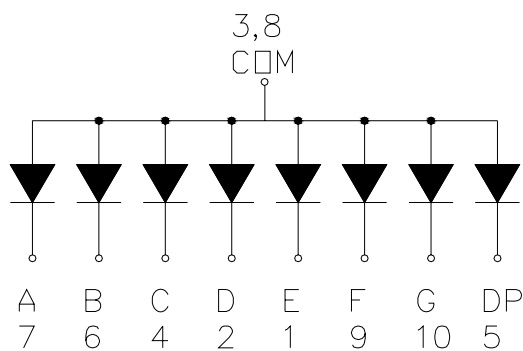
**REVISION: A0**

Outer Dimension:



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

Circuit Diagram



Pin Connection:

PIN NO.	CONNECTION	PIN NO.	CONNECTION
1	Anode E	6	Anode B
2	Anode D	7	Anode A
3	Common Cathode	8	Common Cathode
4	Anode C	9	Anode F
5	Anode DP	10	Anode G

■ Features:

- High Reliability
- Color: Super Bright Red
- Low Power Requirement
- Easy Assembly

■ Description:

- Single Digit LED Display
- Digit Height: 13.1mm(0.52")
- Gray Face and Milky Diffused Segment

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

Parameter	Symbol	Condition	Color	Rating	Units
Power Dissipation	P _d	—	Red	65	mW
Forward Current	I _F	—	Red	25	mA
Derating Of If Per	△I _F	Ta ≥ 25°C	Red	0.30	mA/°C
Peak Forward Current	I _{FP}	1/10 Duty 10KHz	Red	100	mA
Reverse Voltage	V _R	—	Red	5	V
Operating Temperature Range	T _{opr}	—	—	-35~+85	°C
Storage Temperature Range	T _{stg}	—	—	-35~+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	—	1.95	2.60	V
Reverse Current	I _R	V _R =5V	Per Dice	—	—	100	μA
Luminous Intensity	I _V	I _F =10mA	Per Dice	---	23000	—	mcd
Wave Length	λ _p	I _F =20mA	Per Dice	—	635	—	nm
	λ _b				625		
Spectral Line Half Width	△λ	I _F =20mA	Per Dice	—	20	—	nm
Luminous Intensity Matching Ratio	I _{v-m}	I _F =10mA				1.2:1	

■ Luminous Intensity Sorting: (Luminous intensity tolerance : +/-10%)

Rank	Symbol	Condition	Min	Max	Unit
S	S	I _F =10mA	15251	18000	μcd
T	T	I _F =10mA	18000	21500	μcd
U	U	I _F =10mA	21501	26000	μcd
V	V	I _F =10mA	26001	31000	μcd
W	W	I _F =10mA	31001	37000	μcd

■ Hue Grade: I_F =10mA (Hue: +/-1nm)

Rank	Symbol	Hue Range	Units
64	64	621.1~624.0	nm
65	65	624.1~627.0	nm

■ Soldering Conditions: Soldering Temp. ≤ +260°C Soldering Time. ≤ 3sec.
(at 2mm Distance from The Case of Reflector Ed)

■ Typical Electro-Optical Characteristics Curve:

Fig1. Forward Current vs. Forward Voltage:

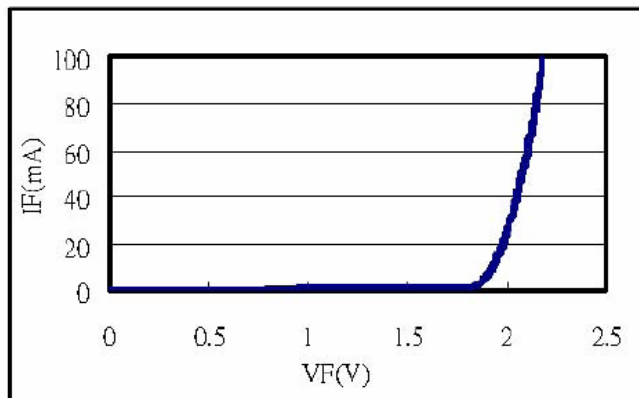


Fig2. Forward Current vs. Relative Intensity:

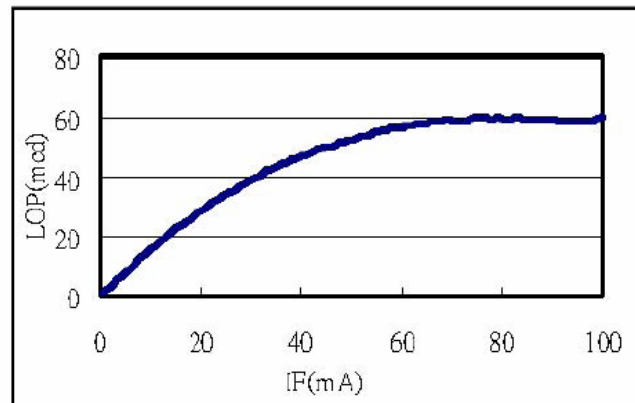


Fig3. Forward Current vs. Relative Wavelength:

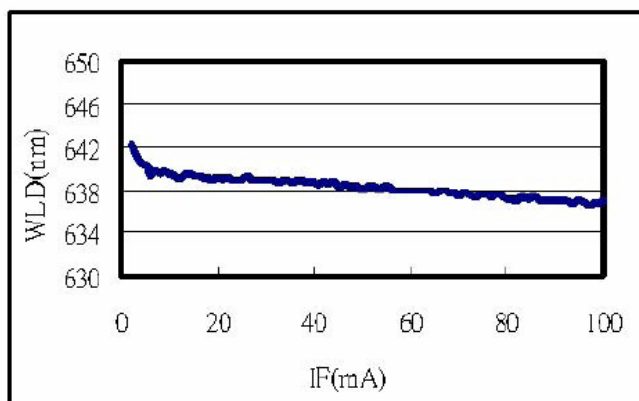


Fig4. Temperature vs. Relative Intensity:

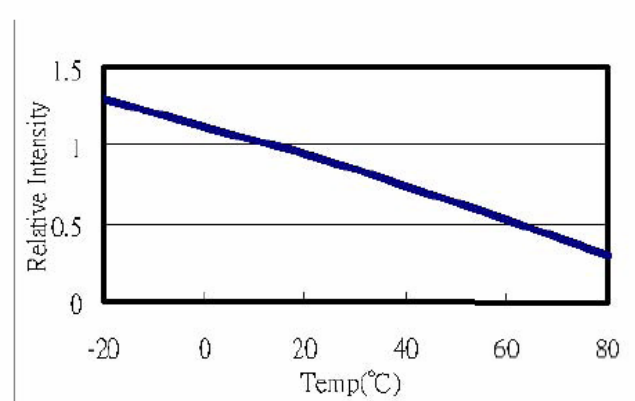


Fig5. Temperature vs. Relative Wavelength:

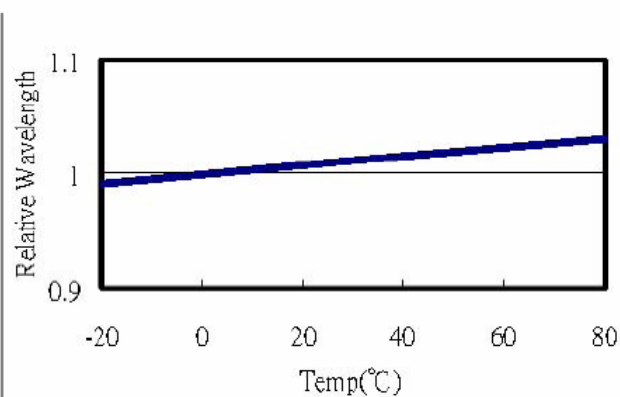
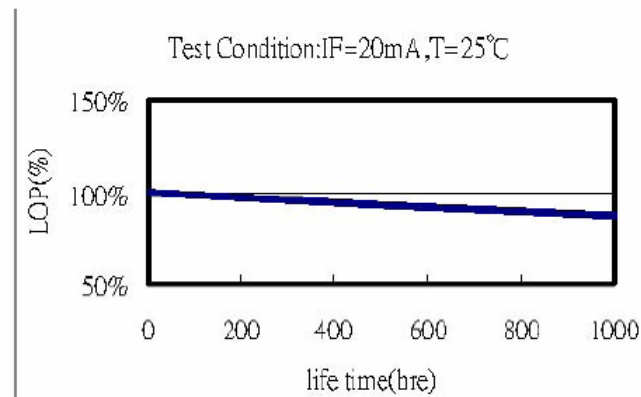


Fig6. Life Test at 20mA R.T. 1000hrs:



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.

Package method 1:

200 pcs / Red Expandable Polyethylene.

1400 pcs / Box(360*175*130mm).

8400 pcs / Carton(550*380*280mm).

Packing method B:

40 pcs / IC Tube.

2160 pcs / Box(537*175*125mm).

8640 pcs / Carton(550*380*280mm).