

WCN1-1052SD-A31

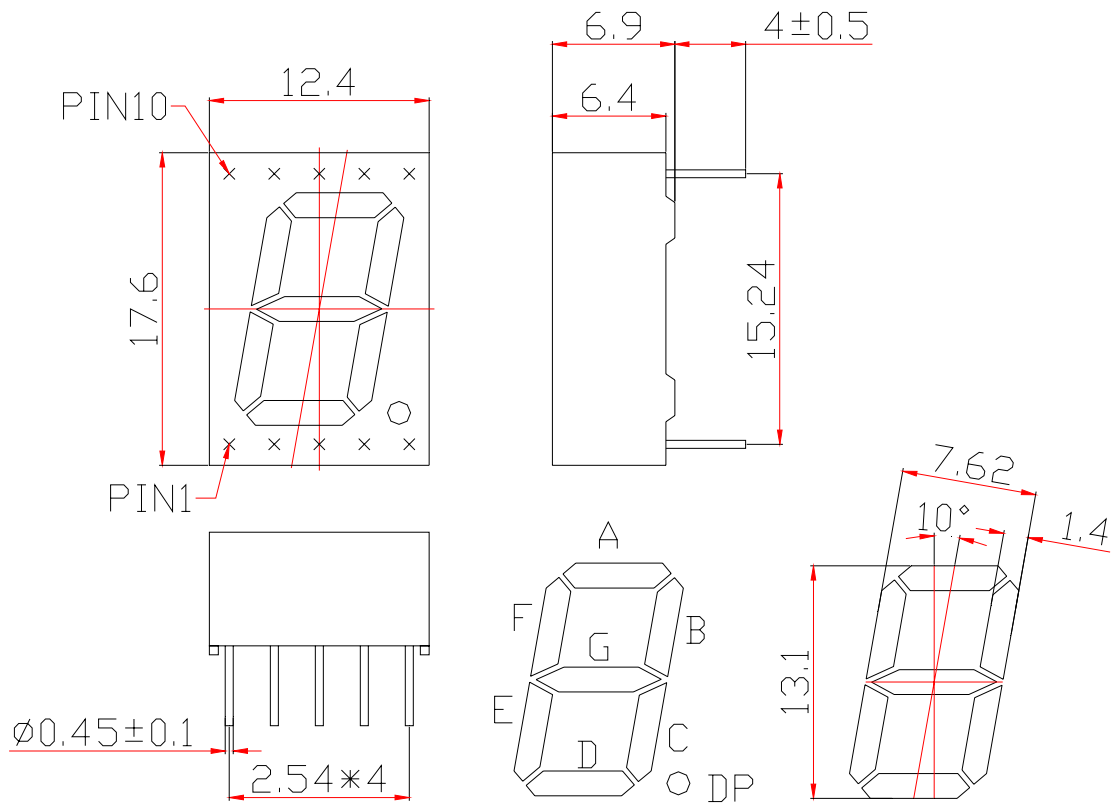
SPECIFICATION

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



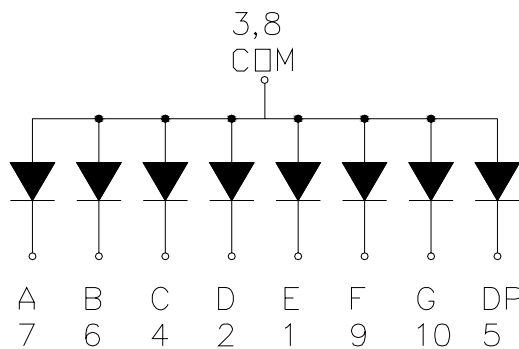
REVISION: A0

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: 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	ΔI _F	Ta ≥ 25°C	Red	0.30	mA/°C
Peak Forward Current	I _{FM}	1/10 Duty 10KHz	Red	100	mA
Reverse Voltage	V _R	—	Red	5	V
Operating Temperature Range	Topr	—	—	-35~+85	°C
Storage Temperature Range	Tstg	—	—	-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	—	2.00	2.60	V
Reverse Current	I _R	V _R =5V	Per Dice	—	—	100	μA
Luminous Intensity	I _V	I _F =10mA	Per Dice	8501	14000	—	μcd
Wave Length	λ _p	I _F =20mA	Per Dice	—	660	—	nm
	λ _b				640		
Spectral Line Half Width	Δλ	I _F =20mA	Per Dice	—	20	—	nm
Luminous Intensity Matching Ratio	I _{v-m}	I _F =10mA				2:1	

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

Rank	Symbol	Condition	Min	Max	Unit
P	P	I _F =10mA	8501	10500	μcd
Q	Q	I _F =10mA	10501	12800	μcd
R	R	I _F =10mA	12801	15250	μcd
S	S	I _F =10mA	15251	18000	μcd
T	T	I _F =10mA	18001	21500	μcd

■ **Hue Grade: I_F =10mA (Hue:+/-1nm)**

Rank	Symbol	Hue Range	Units
69	69	636.1-639.0	nm
70	70	639.1-642.0	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:

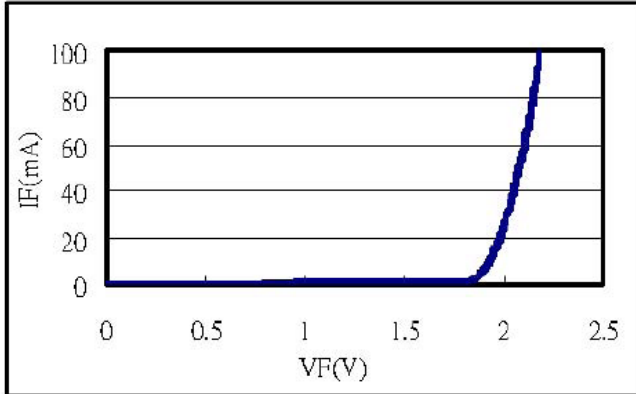


Fig2. Forward Current vs. Relative Intensity:

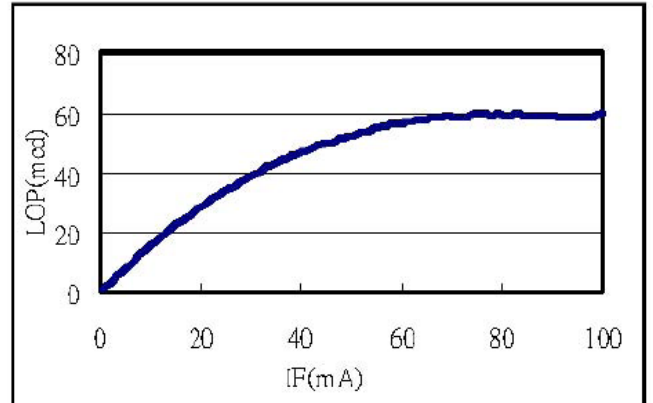


Fig3. Forward Current vs. Relative Wavelength:

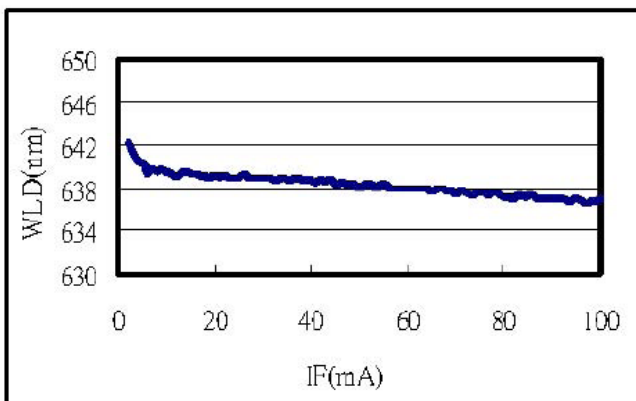


Fig4. Temperature vs. Relative Intensity:

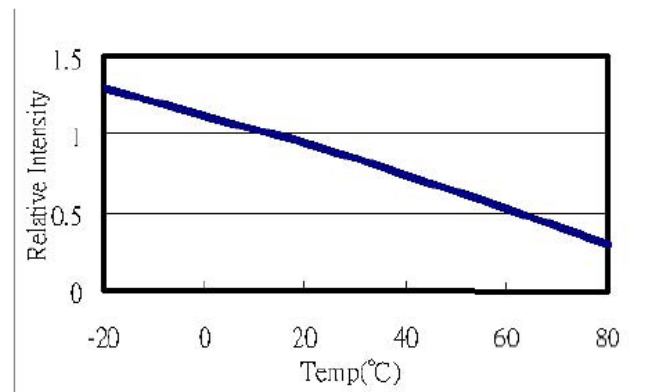


Fig5. Temperature vs. Relative Wavelength:

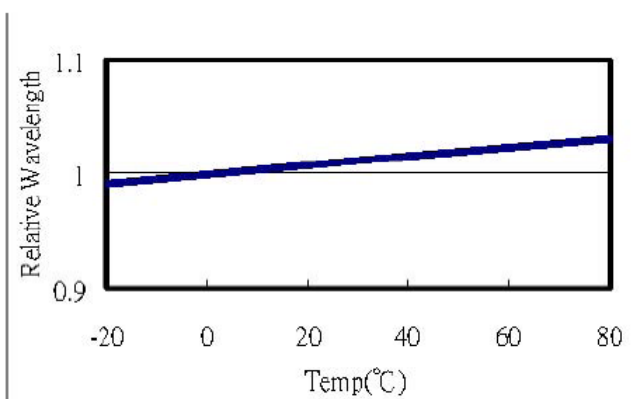
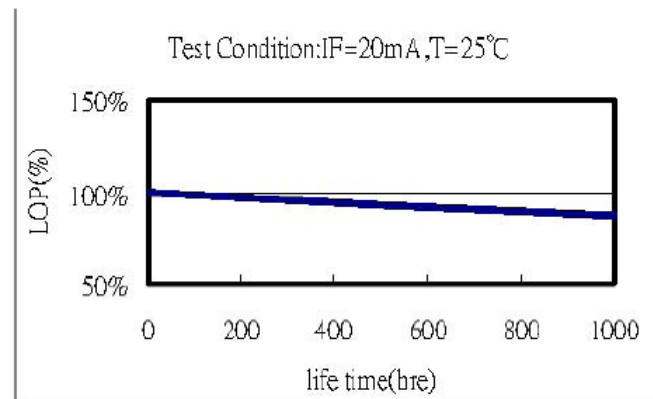


Fig6. Life Test at 20mA R.T. 1000hrs:



■ 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 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±5°C RH=90~95%RH TEST TIME=240± 2Hrs
	HIGH TEMPERATURE STORAGE	EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN HIGH TEMPERATURE T _a = 85±5°C(COB: T _a =65±5°C) TEST TIME=1000Hrs(-24Hrs, +72Hrs)
	LOW TEMPERATURE STORAGE	EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN LOW TEMPERATURE T _a = -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 _{hot} =65°C, T _{cold} =-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 _{hot} =65°C, T _{cold} =-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.

■ 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).