

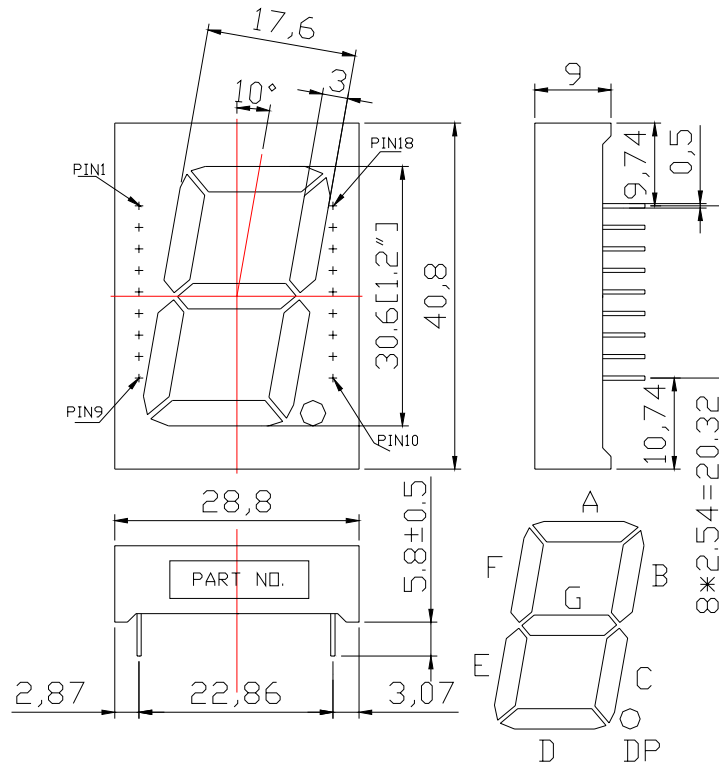
**WCN1-00A2RG-A81S****SPECIFICATION**

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



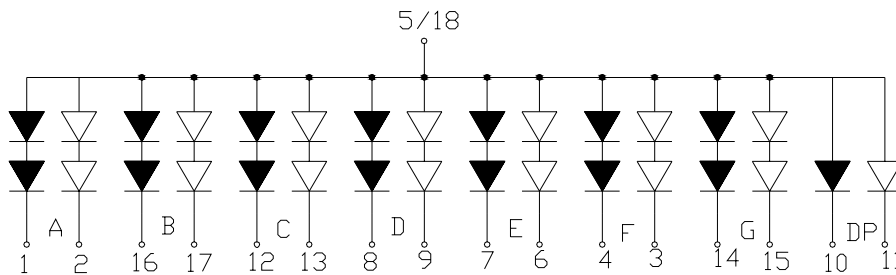
REVISION: A2

■ Outer Dimension:



Note: Unless otherwise stated, The tolerance is  $\pm 0.25$  mm.

■ Circuit Diagram:



the sign "▲" represent Yellow Green chips  
the sign "▲" represent Red chips

■ Pin Connection:

PIN NO.	CONNECTION	PIN NO.	CONNECTION
1	Cathode A	10	Cathode DP
2	Cathode A	11	Cathode DP
3	Cathode F	12	Cathode C
4	Cathode F	13	Cathode C
5	Common	14	Cathode G
6	Cathode E	15	Cathode G
7	Cathode E	16	Cathode B
8	Cathode D	17	Cathode B
9	Cathode D	18	Common

## ■ Features:

- High Reliability
- Color: Red and Yellow Green
- Low Power Requirement
- Easy Assembly

## ■ Description:

- Single Digit LED Display
- Digit Height: 30.6 mm (1.2" )
- Black Face and Milky Segment

## ■ Absolute Maximum Rating (Ta=25°C):

Parameter	Symbol	Condition	Color	Rating	Units
Power Dissipation Per Segment	P <sub>d</sub>	—	Red/Yellow Green	130 / 130	mW
Power Dissipation Per DP				65 / 65	
Forward Current Per Segment/DP	I <sub>F</sub>	—	Red/Yellow Green	25/25	mA
Peak Forward Current Per	I <sub>FP</sub>	1/10 Duty 0.1ms	Red/Yellow Green	100	mA
Reverse Voltage Per Segment/DP	V <sub>R</sub>	—	Red/Yellow Green	10 / 5	V
Operating Temperature Range	T <sub>opr</sub>	—	—	-35~+85	°C
Storage Temperature Range	T <sub>stg</sub>	—	—	-35~+85	°C

## ■ Electrical/Optical Characteristics Rating(Ta=25°C):

Item	Symbol	Test condition	Location	Color	Rating			Units
					Min.	Typ.	Max.	
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> =20mA	Per DP/ Segment	Red	—	2.0/4.0	2.60/5.2	V
				Yellow green	—	2.25/4.5	2.60/5.2	
Reverse Current	I <sub>R</sub>	V <sub>R</sub> =5V	Per DP/ Segment	Red	—	—	100	μA
		V <sub>R</sub> =10V		Yellow green				
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> =10mA	Per DP/ Segment	Red	8501	11500	—	mcd
				Yellow Green	4001	6500		
Wave Length	λ <sub>P</sub>	I <sub>F</sub> =20mA	Per DP/ Segment	Red / Yellow Green	—	638/568	—	nm
	λ <sub>D</sub>					633/572		
Spectral Line Half Width	△λ	I <sub>F</sub> =20mA	Per DP/ Segment	Red	—	20	—	nm
				Yellow green		30		
Luminous Intensity Matching Ratio (Segment To Segment)	I <sub>v-m</sub>	I <sub>F</sub> =20mA					1.2:1	

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

Fig 1. Forward Current vs. Forward Voltage

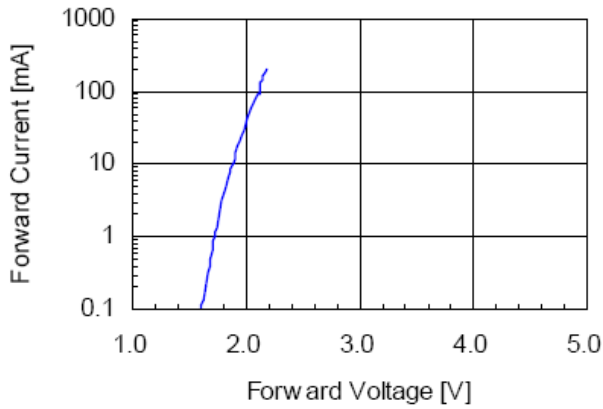


Fig 2. Relative Intensity vs. Forward Current

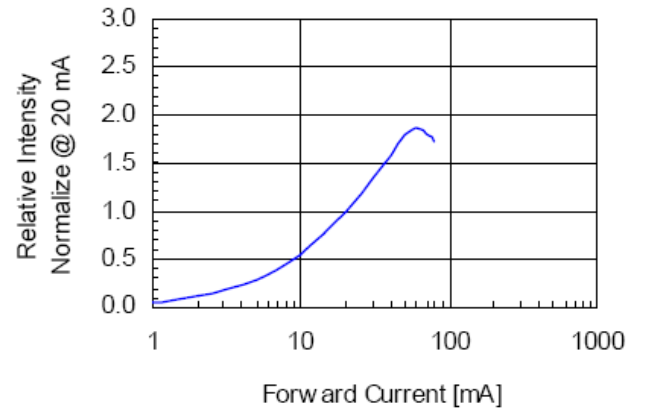


Fig 3. Forward Voltage vs. Temperature

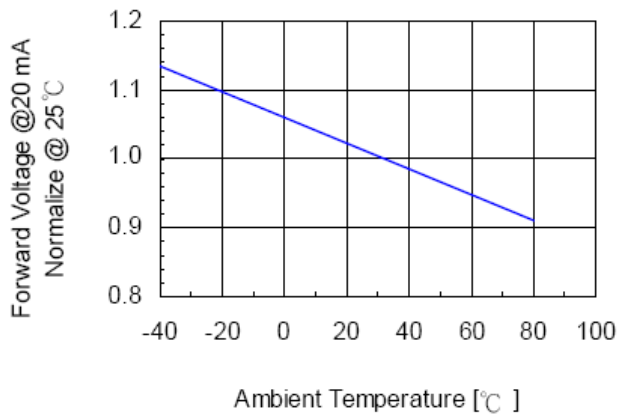


Fig 4. Relative Intensity vs. Temperature

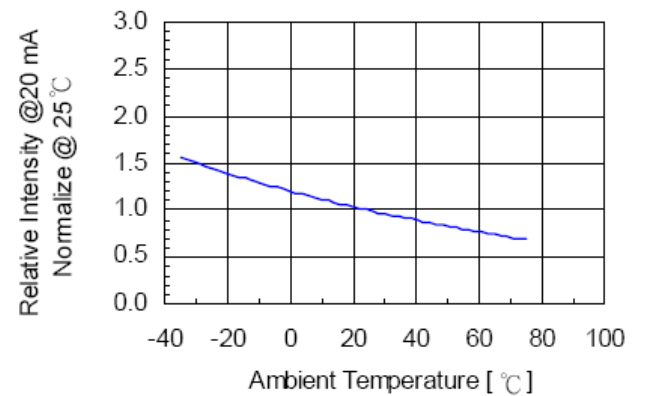
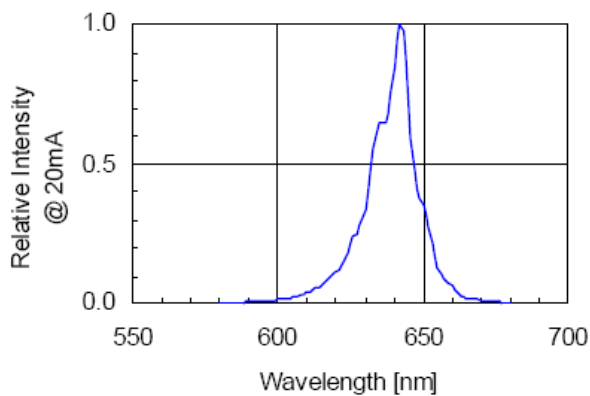


Fig 5. Relative Intensity vs. Wavelength



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

Fig 1. Forward Current vs. Forward Voltage

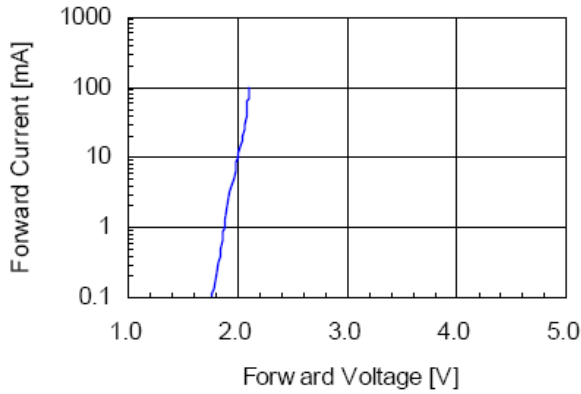


Fig 2. Relative Intensity vs. Forward Current

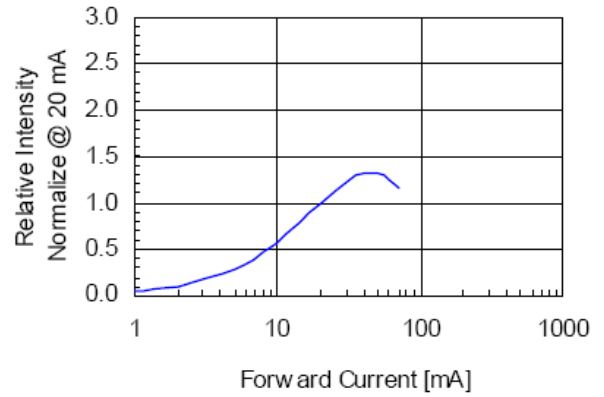


Fig 3. Forward Voltage vs. Temperature

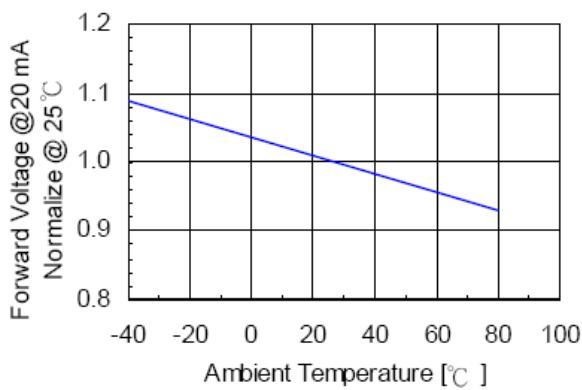


Fig 4. Relative Intensity vs. Temperature

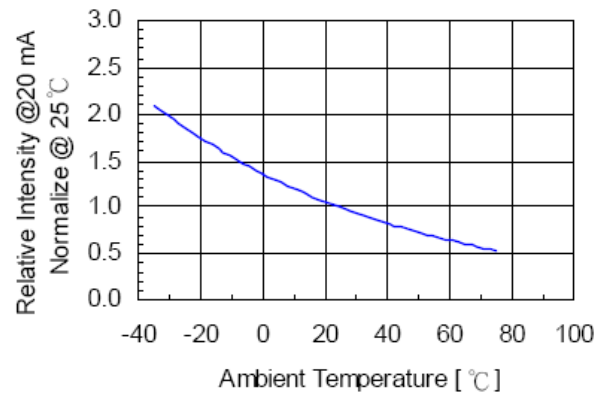
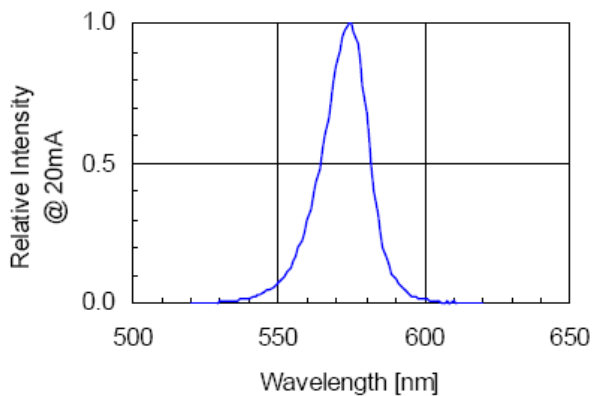


Fig 5. Relative Intensity vs. Wavelength



# WCN Opto Group Co., Limited

## 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 <sub>a</sub> = UNDER ROOM TEMPERATURE I <sub>F</sub> = I <sub>F</sub> max
	HIGH TEMPERATURE HIGH HUMIDITY STORAGE	EVALUATES MOISTURE RESISTANCE OF THE DEVICE WHEN STORED FOR A LONG TERM AT HIGH TEMPERATURE AND HUMIDITY T <sub>a</sub> = 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 <sub>a</sub> = 85±5°C(COB: T <sub>a</sub> =65±5°C) TEST TIME=1000Hrs(-24Hrs, +72Hrs)
	LOW TEMPERATURE STORAGE	EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN LOW TEMPERATURE T <sub>a</sub> = -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 <sub>hot</sub> =65°C, T <sub>cold</sub> =-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 <sub>hot</sub> =65°C, T <sub>cold</sub> =-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:

40 pcs / Red Expandable Polyethylene.

200 pcs / Box(360\*175\*130mm).

1200 pcs / Catton(550\*380\*280mm).