



WCN Opto Group Co., Limited

WCNLB12-RYG11

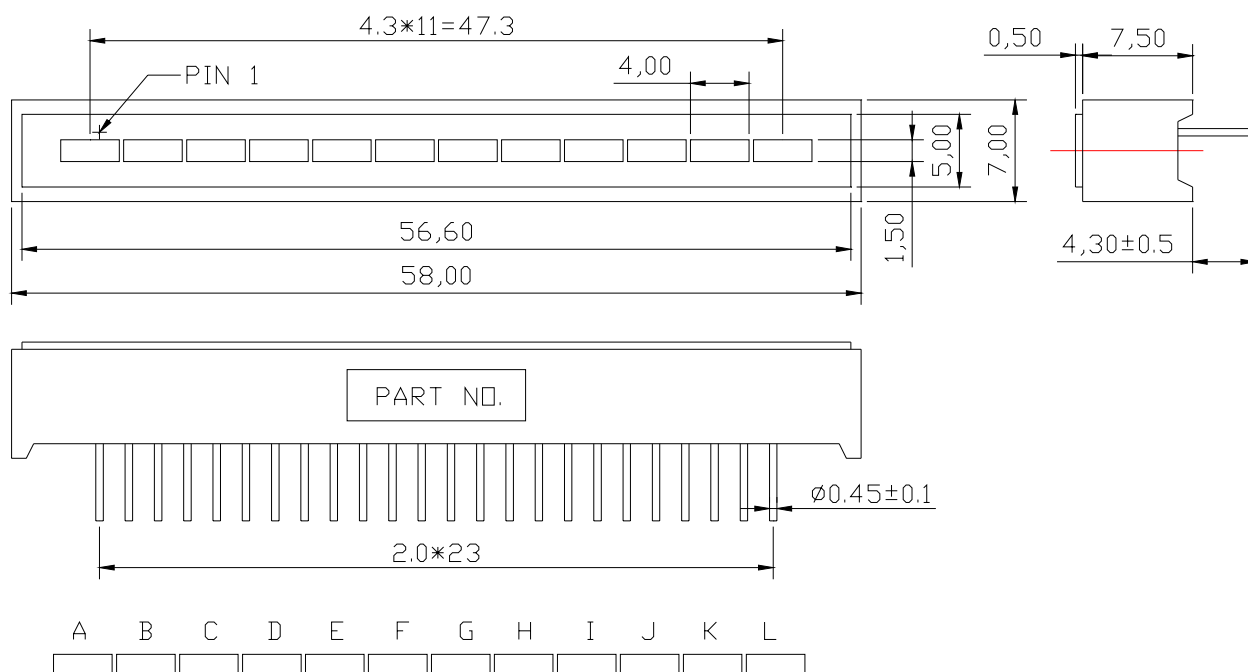
SPECIFICATION

WCN			CUSTOMER Confirmed
Prepared by	Checked by	Approved by	
Fei 2016-8-5	Athena		
REVISION RECORD			



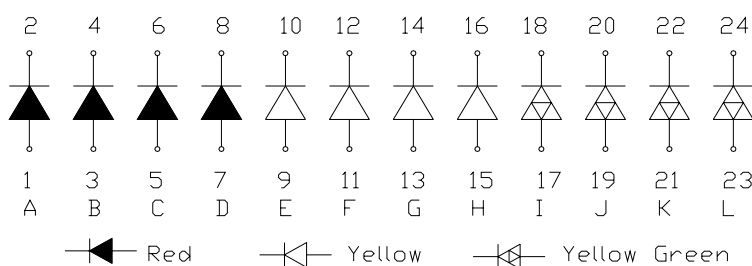
REVISION: A0

■ **Outer Dimension:**



Note: Unless otherwise stated, The tolerance is ± 0.25 mm.

■ **Circuit Diagram:**



■ **Pin Connection:**

PIN NO.	CONNECTION	PIN NO.	CONNECTION	PIN NO.	CONNECTION
1	Anode A	9	Anode E	17	Anode I
2	Cathode A	10	Cathode E	18	Cathode I
3	Anode B	11	Anode F	19	Anode J
4	Cathode B	12	Cathode F	20	Cathode J
5	Anode C	13	Anode G	21	Anode K
6	Cathode C	14	Cathode G	22	Cathode K
7	Anode D	15	Anode H	23	Anode L
8	Cathode D	16	Cathode H	24	Cathode L

■ Features:

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

■ Description:

- Twelve Windows Display
- Digit Height 1.5mm(0.06") And Width 4.0mm(0.16")
- Black Face and Milky Bar

■ Absolute Maximum Rating (Ta=25℃):

Parameter	Symbol	Condition	Color	Rating	Units
Power Dissipation Per Bar	P _d	—	Red/Yellow /YellowGreen	65/65/65	mW
Forward Current Per Bar	I _F	—	Red/Yellow /YellowGreen	25/25/25	mA
Peak Forward Current Per Bar	I _{FP}	1/10 Duty 10KHz	Red/Yellow /YellowGreen	100	mA
Reverse Voltage Per Bar	V _R	—	Red/Yellow /YellowGreen	5	V
Operating Temperature Range	T _{opr}	—	—	-35~+85	℃
Storage Temperature Range	T _{stg}	—	—	-35~+85	℃

■ Electrical/Optical Characteristics Rating(Ta=25℃)

Item	Symbol	Test conditions	Color	Location	Rating			Units
					Min.	Typ.	Max.	
Forward Voltage	V _F	I _F =20mA	Red	Per Bar	—	2.00	2.60	V
			Yellow		—	2.00	2.60	
			Yellow Green		—	2.20	2.60	
Reverse Current	I _R	V _R =5V	—	Per Bar	—	—	100	μA
Luminous Intensity	I _V	I _F =10mA	Red	Per Bar	3051	5500	8500	ucd
			Yellow		4001	6500	10500	
			Yellow Green		1351	2600	5000	
Wave Length	λ _P / λ _D	I _F =20mA	Red	Per Bar	—	633	—	nm
			Yellow		—	588	—	
			Yellow Green		—	571	—	
Luminous Intensity Matching Ratio(Bar to Bar)	I _{v-m}	I _F =10mA	—				1.5:1	

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

■ Typical Elector-Optical Characteristics Curve of Red:

Fig 1. Forward Current vs. Forward Voltage

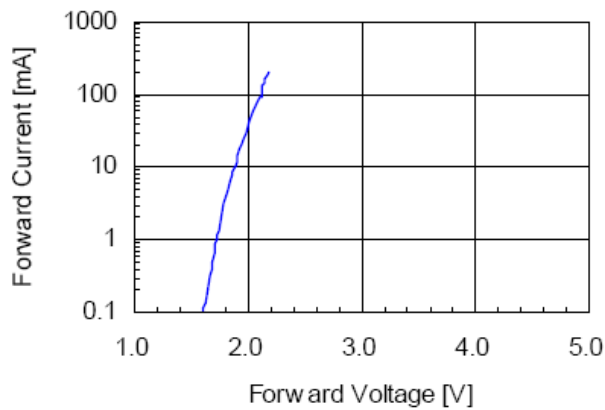


Fig 2. Relative Intensity vs. Forward Current

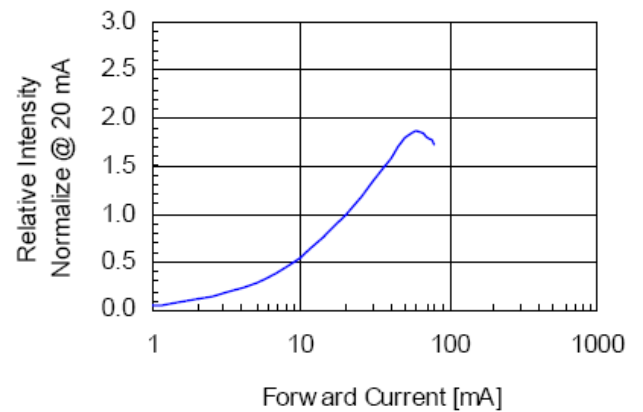


Fig 3. Forward Voltage vs. Temperature

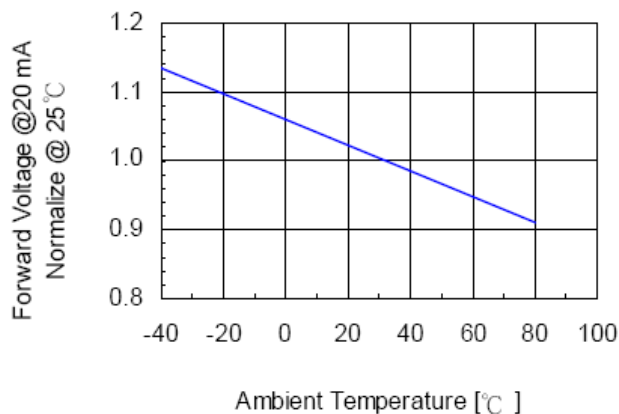


Fig 4. Relative Intensity vs. Temperature

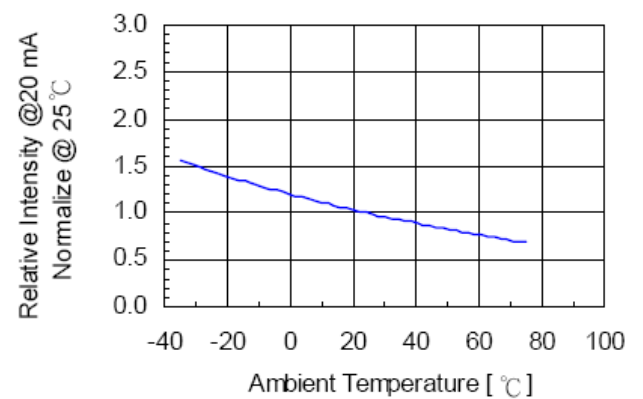
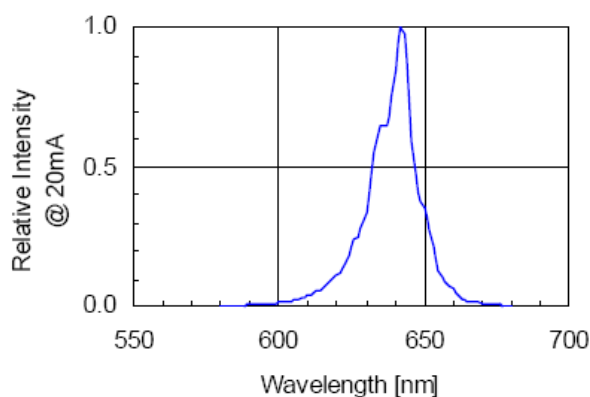


Fig 5. Relative Intensity vs. Wavelength



■ Typical Elector-Optical Characteristics Curve of Yellow :

Fig 1. Forward Current vs. Forward Voltage

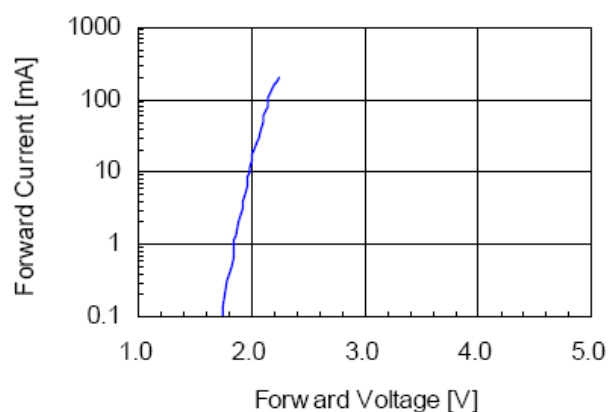


Fig 2. Relative Intensity vs. Forward Current

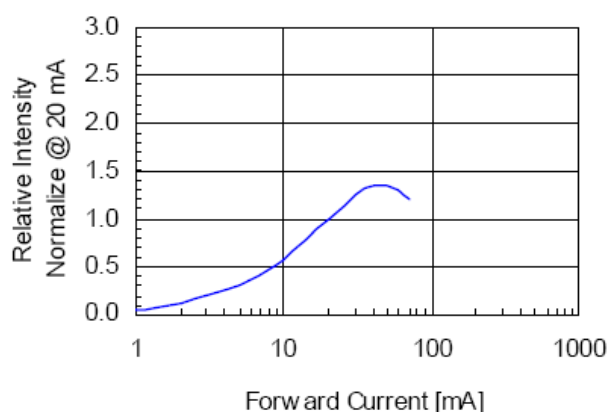


Fig 3. Forward Voltage vs. Temperature

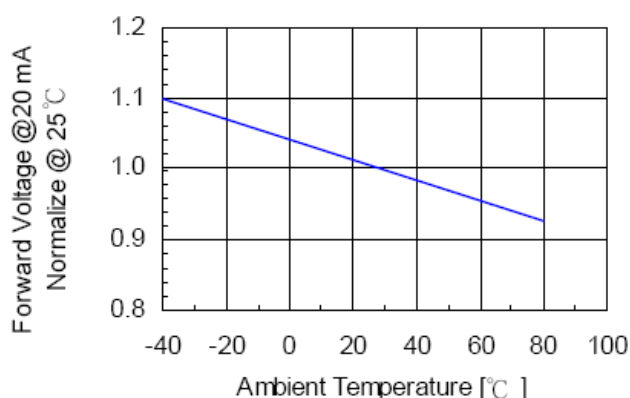


Fig 4. Relative Intensity vs. Temperature

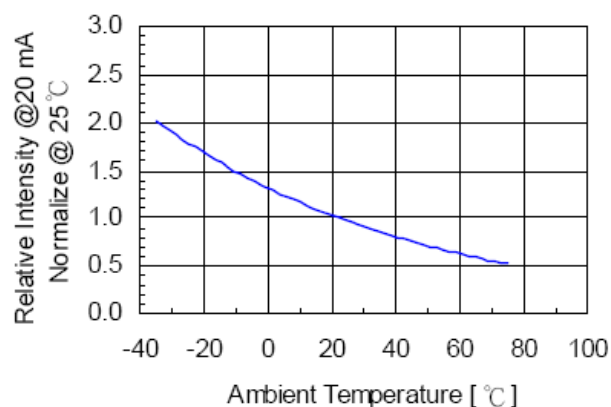
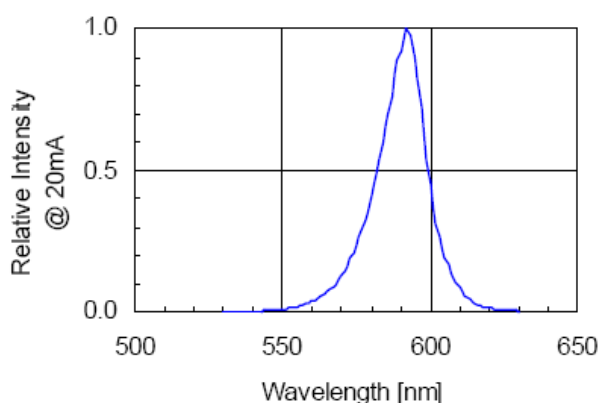


Fig 5. Relative Intensity vs. Wavelength



■ Typical Elector-Optical Characteristics Curve of Yellow Green:

Fig 1. Forward Current vs. Forward Voltage

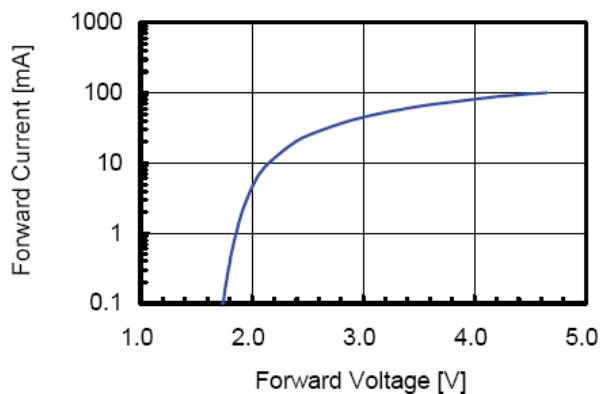


Fig 2. Relative Intensity vs. Forward Current

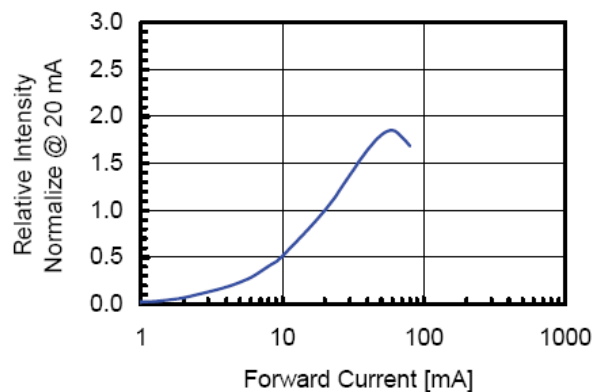


Fig 3. Forward Voltage vs. Temperature

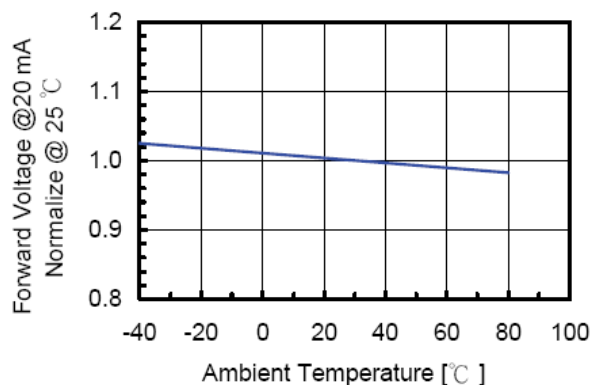


Fig 4. Relative Intensity vs. Temperature

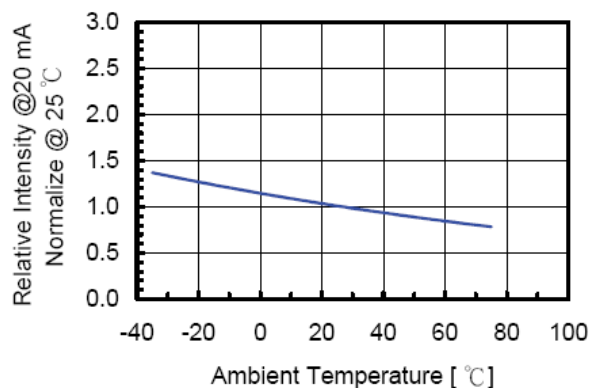
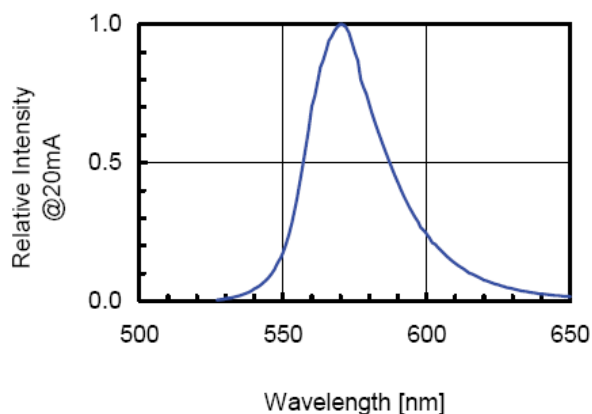


Fig 5. Relative Intensity vs. Wavelength



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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:

90 pcs / Red Expandable Polyethylene.
 540 pcs / Box(360*175*130mm).
 3240 pcs / Carton(550*380*280mm).