

WCN4-0028R6-AB1

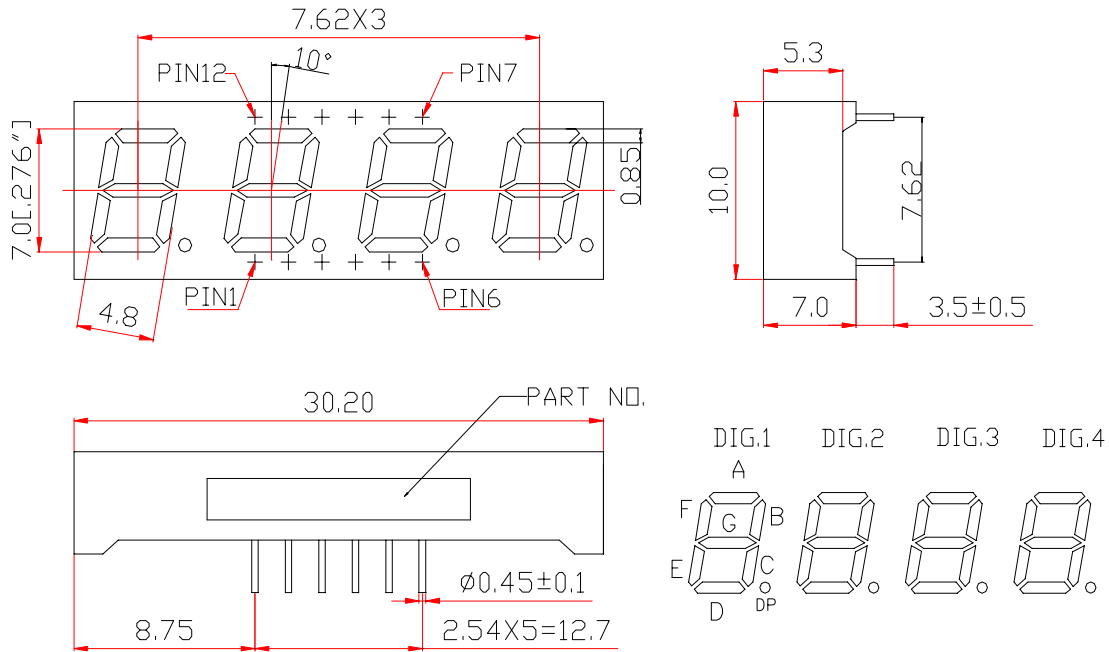
SPECIFICATION

WCN			CUSTOMER Confirmed
Prepared by	Checked by	Approved by	
Fei 2016-5-17	Athena		
Note	A1:Change Outer Dimension(2015-12-14) A2:Cancel Luminous Intensity Sorting (2016-4-15) A3:Increase Packaging Picture(2016-5-17)		



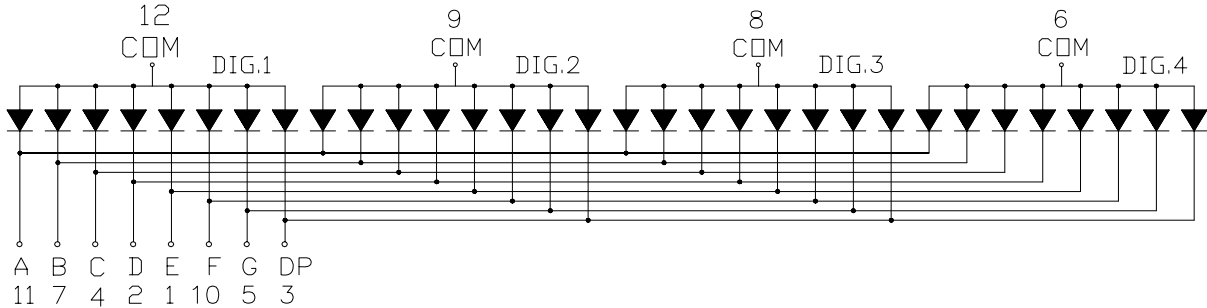
REVISION: A3

Outer Dimension:



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

Circuit Diagram:



Pin Connection:

PIN NO.	CONNECTION	PIN NO.	CONNECTION
1	Cathode E	7	Cathode B
2	Cathode D	8	Common Anode Dig3
3	Cathode DP	9	Common Anode Dig2
4	Cathode C	10	Cathode F
5	Cathode G	11	Cathode A
6	Common Anode Dig4	12	Common Anode Dig1

■ **Features:**

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

■ **Description:**

- Four Digit LED Display
- Digit Height:7.0mm(0.28")
- Black Face and Milky Segment

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

Parameter	Symbol	Condition	Color	Rating	Units
Power Dissipation Per Segment	P _d	—	Red	62.5	mW
Forward Current Per Segment	I _F	—	Red	25	mA
Peak Forward Current Per Segment	I _{FP}	1/10 Duty	Red	100	mA
Reverse Voltage Per Segment	V _R	—	Red	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 Segment	1.80	2.0	2.50	V
Reverse Current	I _R	V _R =5V	Per Segment	—	—	100	μA
Luminous Intensity	I _V	I _F =10mA	Per Segment	5001	7800	12800	μcd
Wave Length	λ _P	I _F =20mA	Per Segment	—	640	—	nm
	λ _D			627	630	633	
Spectral Line Half Width	Δλ	I _F =20mA	Per Segment	—	20	—	nm
Luminous Intensity Matching	I _{v-m}	I _F =10mA				1.2:1	

■ **Wave-Soldering Conditions: Soldering Temp. ≤+260°C, Soldering Time. ≤3sec.**

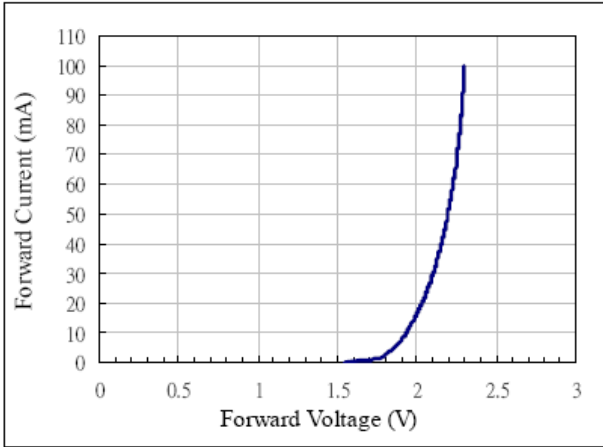
Handmade Conditions: Soldering Temp. ≤+320°C, Soldering Time. ≤3sec.

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

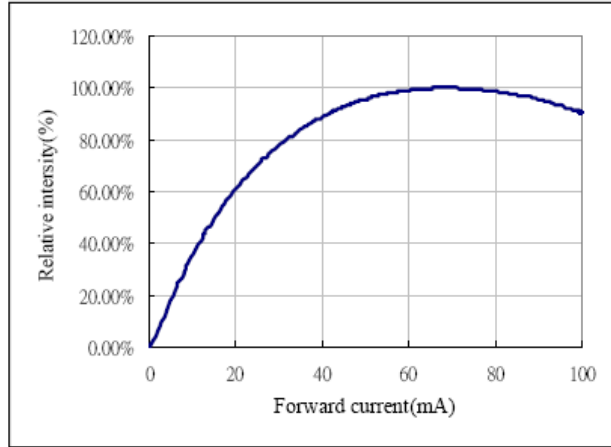
■ **Electrostatic Discharge Threshold: HBM 1500V**

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

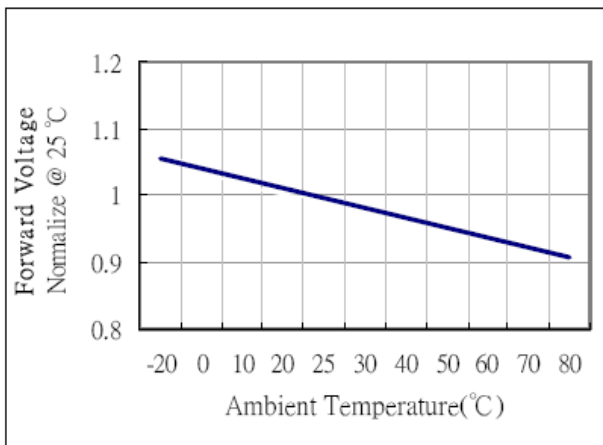
Forward current vs. Forward voltage



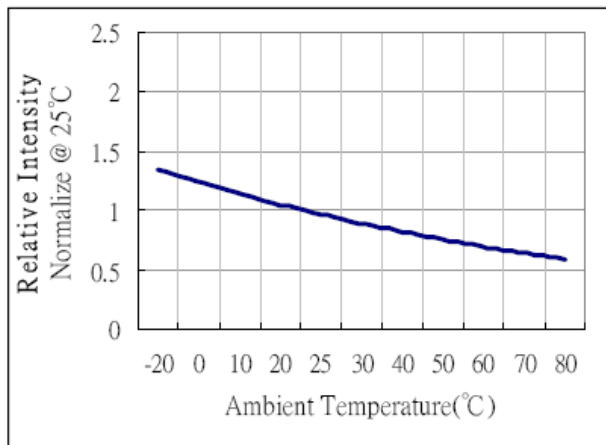
Relative intensity vs. Forward current



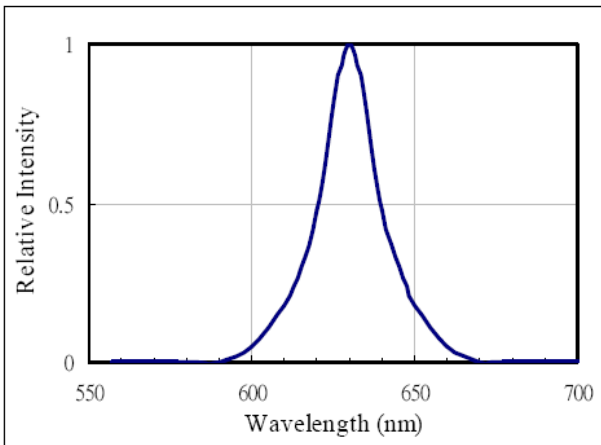
Forward voltage vs. Temperature



Relative intensity vs. Temperature



Relative intensity vs. Wavelength



WCN Opto Group Co., Limited

■ LED Displays Reliability Test:

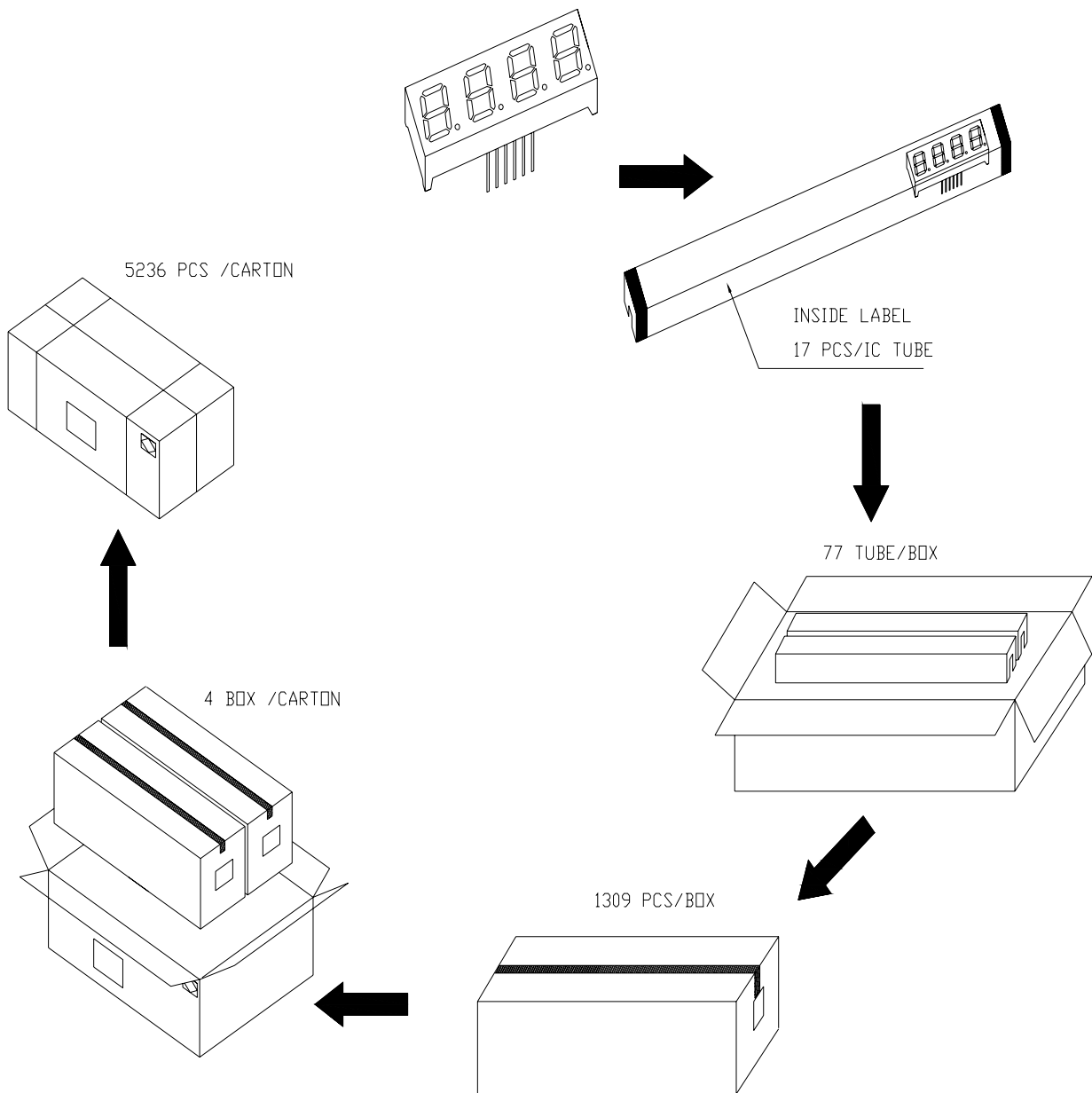
CLASSIFICATION	TEST ITEM	DESCRIPTION AND TEST CONDITION
ENDURANCE TEST	OPERATION LIFE	EVALUATES RESISTANCE OF THE DEVICE WHEN OPERATED AT ELECTRICAL STRESS T_a = UNDER ROOM TEMPERATURE $I_f = I_f \text{ max}$
	HIGH TEMPERATURE HIGH HUMIDITY STORAGE	EVALUATES MOISTURE RESISTANCE OF THE DEVICE WHEN STORED FOR A LONG TERM AT HIGH TEMPERATURE AND HUMIDITY $T_a = 65 \pm 5^\circ\text{C}$ RH=90~95%RH TEST TIME=240± 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±1sec.
	SOLDER RESISTANCE	EVALUATES RESISTANCE TO THERMAL STRESS CAUSED BY SOLDERING $T_{\text{SOL}}=260 \pm 5^\circ\text{C}$ DWELL TIME=10±1sec.

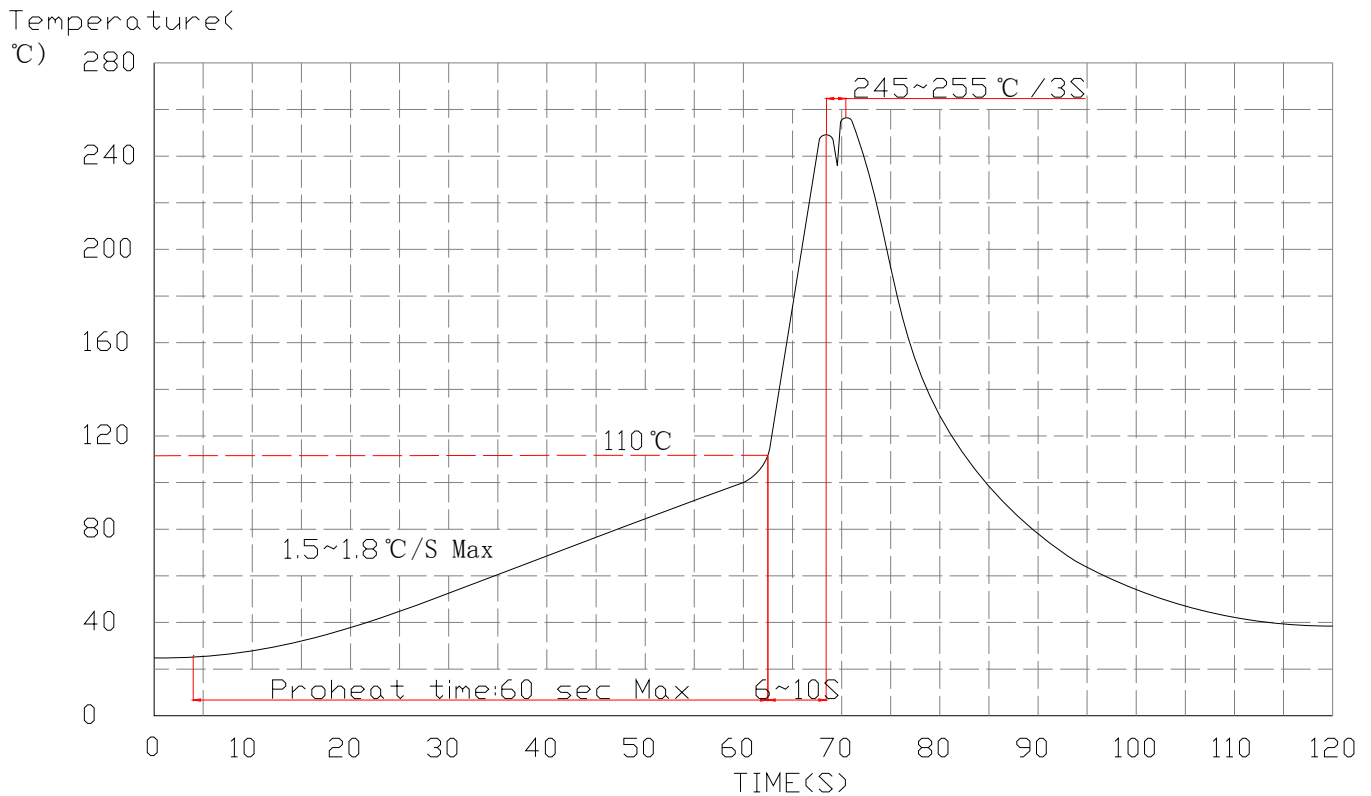
■ **Package Pattern :**

17 pcs / IC Tube.

1309 pcs / Box (537*175*125mm).

5236 pcs / Carton (550*380*280mm).



Recommended Wave Soldering Profiles:**Notes:**

- 1.Recommend pre-heat temperature of 110°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C.
- 2.Peak wave soldering temperature between 245°C~255°C for 3 sec .
- 3.Do not apply stress to the epoxy resin while the temperature is above 85°C.
- 4.Fixtures should not incur stress on the component when mounting and during soldering process.
- 5.SAC 305 solder alloy is recommended.
- 6.No more than one wave soldering pass.

Recommended Soldering Pad :