



LIGITEK ELECTRONICS CO.,LTD.  
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ROUND TYPE LED LAMPS



Lead-Free Parts

LWK3333/H28/A-CW-A02

# DATA SHEET

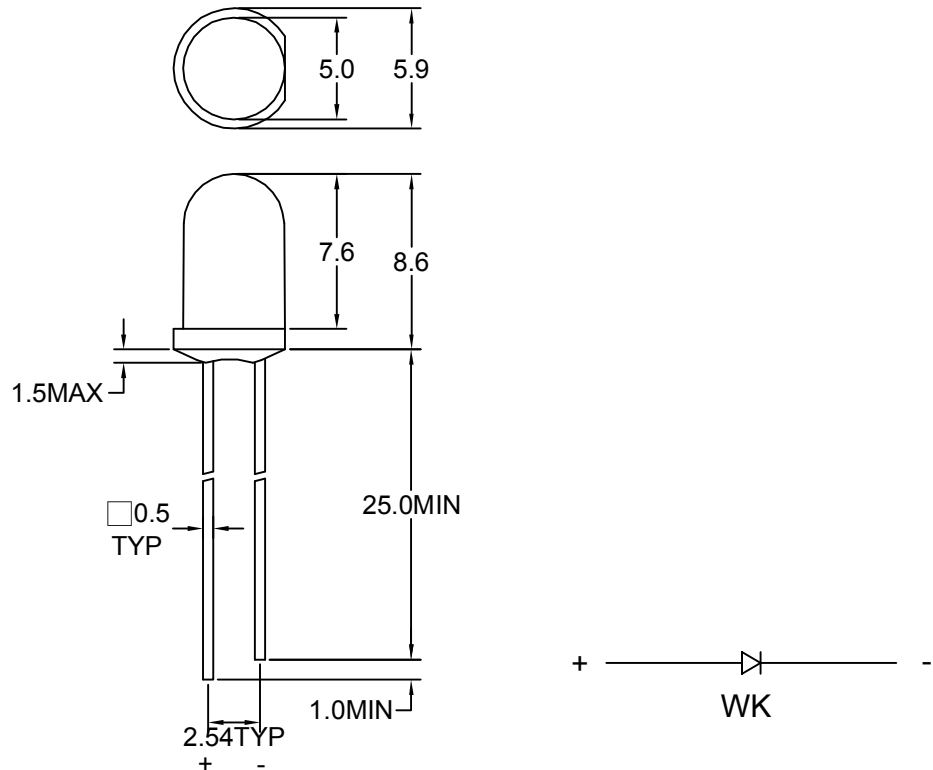
DOC. NO : QW0905-LWK3333/H28/A-CW-A02

REV. : C

DATE : 11 - Oct. - 2016

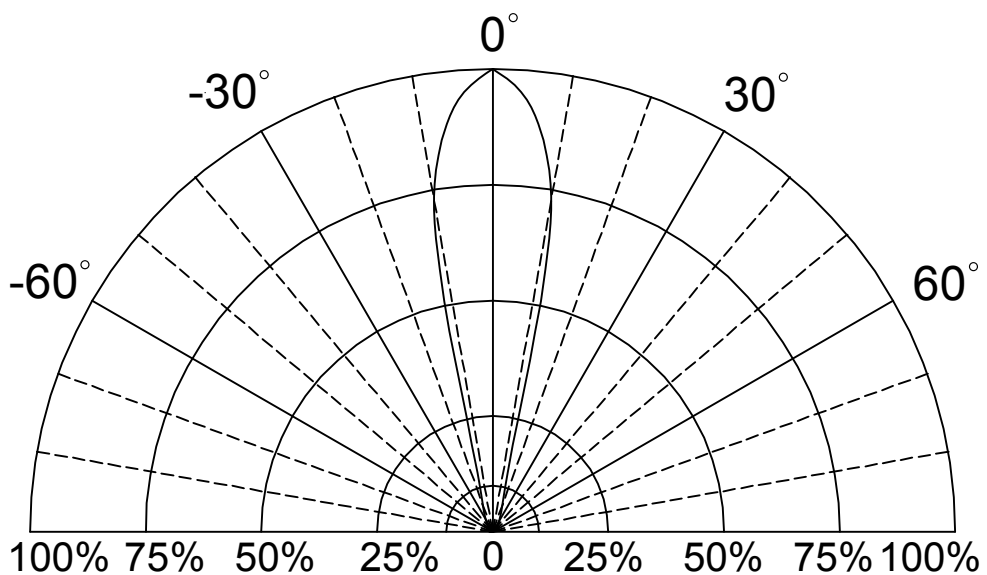


**Package Dimensions**



Note : 1.All dimension are in millimeter tolerance is  $\pm 0.25\text{mm}$  unless otherwise noted.  
2.Specifications are subject to change without notice.

**Directivity Radiation**



Absolute Maximum Ratings at Ta=25 °C

Parameter	Symbol	Ratings	UNIT
		WK	
Forward Current	IF	30	mA
Peak Forward Current Duty 1/10@10KHz	IFP	100	mA
Power Dissipation	PD	120	mW
Reverse Current @5V	Ir	50	μA
Electrostatic Discharge( * )	ESD	500	V
Operating Temperature	Topr	-20~ +80	°C
Storage Temperature	Tstg	-30~ +100	°C

\* Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrosatic glove is recommended when handing these LED. All devices, equipment and machinery must be properly grounded.

Typical Electrical & Optical Characteristics (Ta=25 °C)

PART NO	MATERIAL	COLOR		Chromaticity Coordinates (Typ.)		Forward voltage @20mA(V)		Luminous intensity @20mA(mcd)		Viewing angle 2θ 1/2 (deg)
		Emitted	Lens	X	Y	Typ.	Max.	Min.	Typ.	
LWK3333/H28/A-CW-A02	InGaN	White	Water Clear	0.33	0.34	3.5	4.0	9500	14000	22

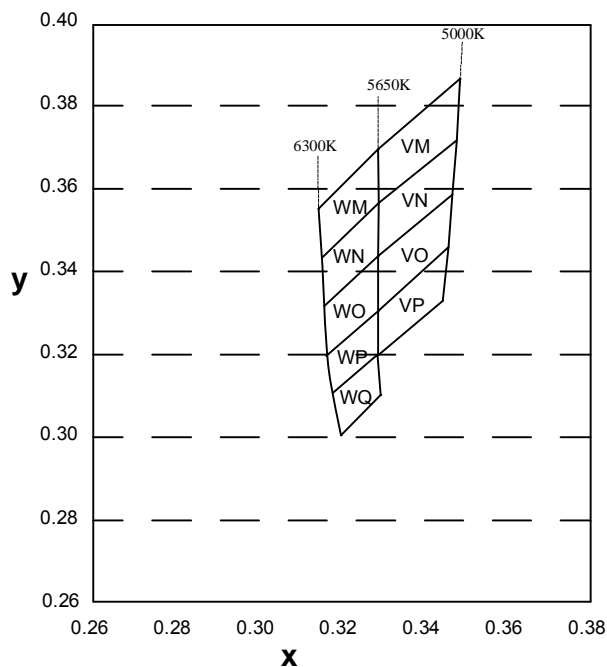
Note : 1.The forward voltage data did not including ±0.1V testing tolerance.  
2. The luminous intensity data did not including ±15% testing tolerance.

.Bin Code

Group	Luminous Intensity(mcd) at 20mA	
	Min.	Max.
A32	9500	11500
A33	11500	14000
A34	14000	17000
A35	17000	21000
A36	21000	26000

Group	Forward Voltage(V)@20mA	
	Min.	Max.
V1	2.8	3.0
V2	3.0	3.2
V3	3.2	3.4
V4	3.4	3.6
V5	3.6	3.8
V6	3.8	4.0

CIE Chromaticity Diagram



Color Bins  
White Bin Structure  
13 Color bins, CCT Range 7000K to 5000K

Bin Code	x	y	
VO	0.329	0.331	5000-5650K
	0.329	0.345	
	0.346	0.359	
	0.344	0.344	
VN	0.329	0.345	
	0.329	0.357	
	0.347	0.372	
	0.346	0.359	
VP	0.329	0.331	
	0.344	0.344	
	0.343	0.332	
	0.329	0.320	
VM	0.329	0.357	
	0.329	0.369	
	0.348	0.386	
	0.347	0.372	
WO	0.329	0.345	5650-6300K
	0.329	0.331	
	0.317	0.320	
	0.316	0.333	
WN	0.329	0.345	
	0.316	0.333	
	0.315	0.344	
	0.329	0.357	
WP	0.329	0.331	
	0.329	0.320	
	0.318	0.310	
	0.317	0.320	
WQ	0.329	0.320	
	0.330	0.310	
	0.320	0.301	
	0.319	0.310	
WM	0.329	0.369	
	0.329	0.357	
	0.315	0.344	
	0.314	0.355	

NOTE: Tolerance on each color bin(x,y)is  $\pm 0.01$

## Typical Electro-Optical Characteristics Curve

WK CHIP

Fig.1 Forward current vs. Forward Voltage

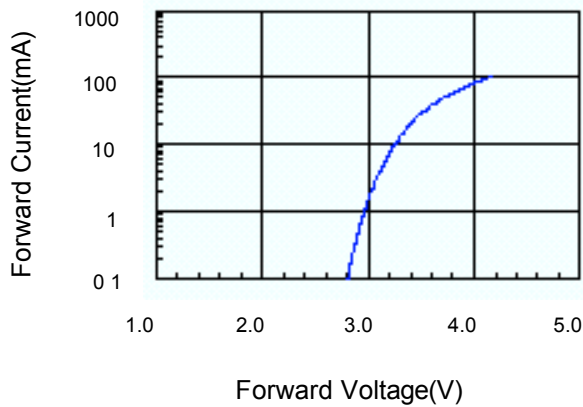


Fig.2 Relative Intensity vs. Forward Current

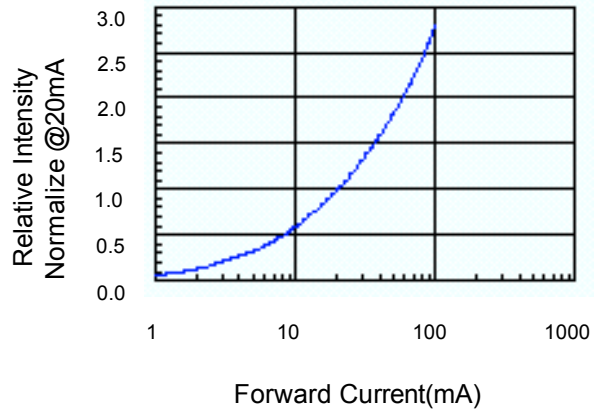


Fig.3 Forward Voltage vs. Temperature

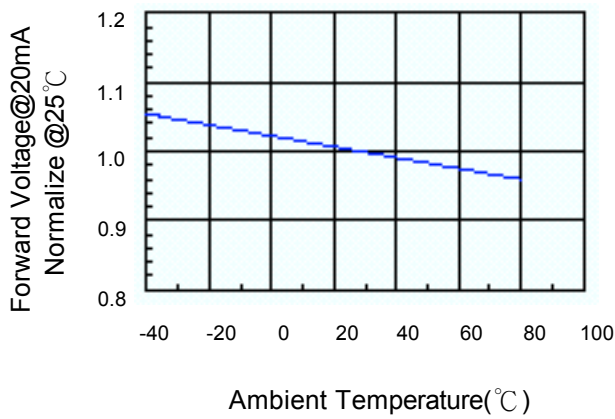


Fig.4 Relative Intensity vs. Temperature

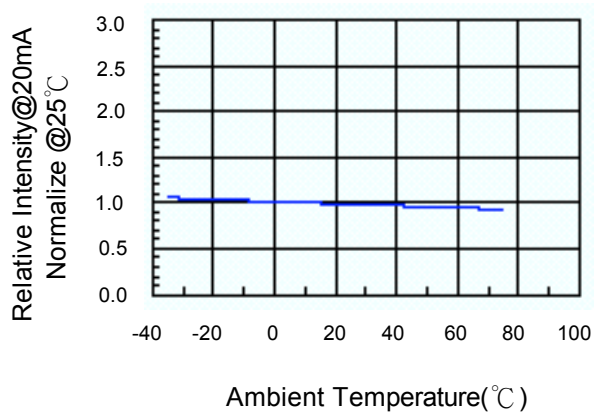


Fig.5 Luminous Spectrum (Ta=25°C)

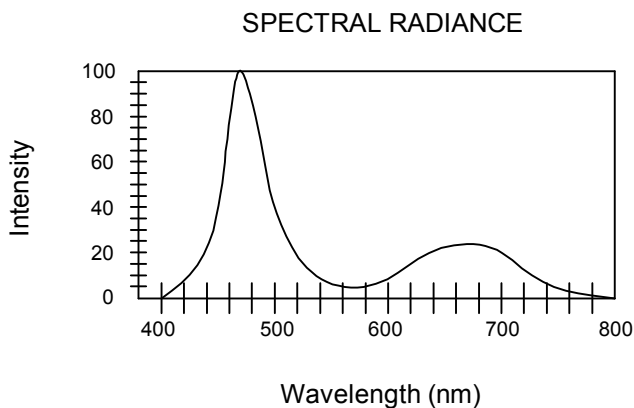
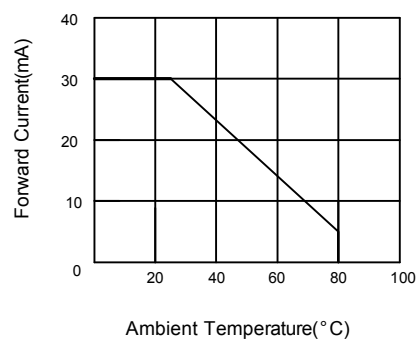


Fig.6 Forward current vs. Ambient Temp.



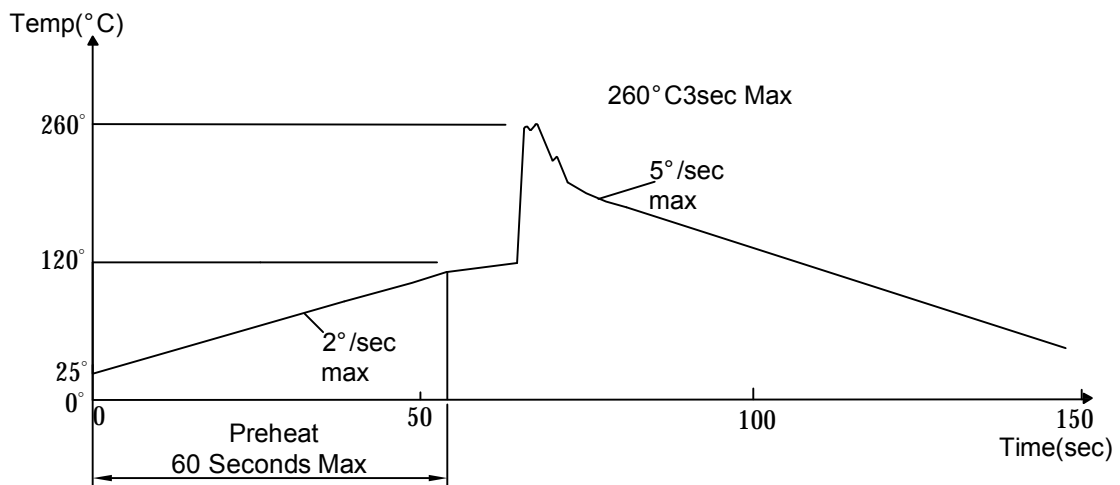
**Soldering Condition(Pb-Free)**

## 1. Iron:

Soldering Iron:30W Max  
Temperature 350° C Max  
Soldering Time:3 Seconds Max(One Time)  
Distance:2mm Min(From solder joint to body)

## 2. Wave Soldering Profile

Dip Soldering  
Preheat: 120° C Max  
Preheat time: 60seconds Max  
Ramp-up  
2° C/sec(max)  
Ramp-Down:-5° C/sec(max)  
Solder Bath:260° C Max  
Dipping Time:3 seconds Max  
Distance:2mm Min(From solder joint to body)

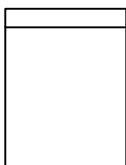


Reliability Test:

Test Item	Test Condition	Description	Reference Standard
Operating Life Test	1.Under Room Temperature 2.If=20mA 3.t=1000 hrs (-24hrs, +72hrs)	This test intended to check the maintenance of the Led's luminous intensity.	MIL-STD-750: 1026 MIL-STD-883: 1005 JIS C 7021: B-1
High Temperature Storage Test	1.Ta=105 °C±5°C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of high temperature for hours.	MIL-STD-883:1008 JIS C 7021: B-10
Low Temperature Storage Test	1.Ta=-40 °C±5°C 2.t=1000 hrs (-24hrs, +72hrs)	The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.	JIS C 7021: B-12
High Temperature High Humidity Test	1.Ta=65 °C±5°C 2.RH=90 %~95% 3.t=240hrs ±2hrs	The purpose of this test is the resistance of the device under tropical for hours.	MIL-STD-202:103B JIS C 7021: B-11
Thermal Shock Test	1.Ta=105 °C±5°C & -40 °C±5°C (10min) (10min) 2.total 10 cycles	The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1011
Solder Resistance Test	1.T.Sol=260 °C±5°C 2.Dwell time= 10 ±1sec.	This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire.	MIL-STD-202: 210A MIL-STD-750: 2031 JIS C 7021: A-1
Solderability Test	1.T.Sol=245 °C±5°C 2.Dwell time=5 ±1sec	This test intended to see soldering well performed or not.	MIL-STD-202: 208D MIL-STD-750: 2026 MIL-STD-883: 2003 JIS C 7021: A-2

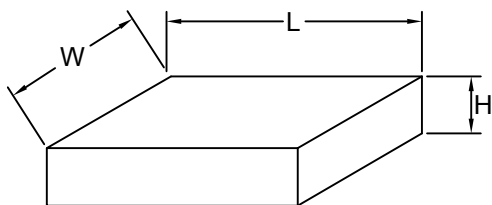


1.500 PCS / BAG



2. 8 BAG / INNER BOX

SIZE : L X W X H 33.5cm X 19cm X 7.5cm



3. 12 INNER BOXES / CARTON

SIZE : L X W X H 58.5cm X 34cm X 34cm

