OptoSupply
Light It Up

4.8mm Straw Cool White LED

OSW5DK56A1A

Ver.3

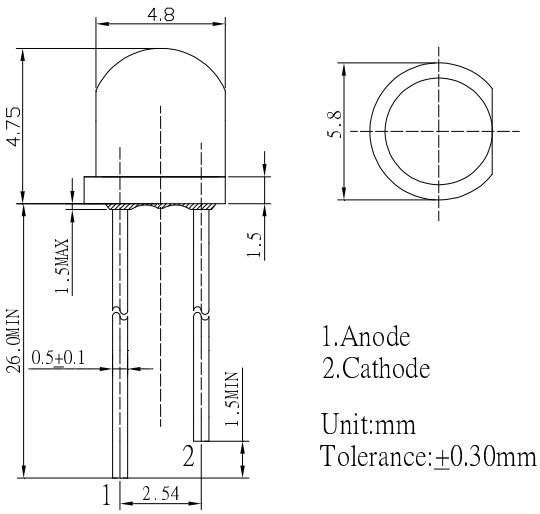
■Features

- High Luminous LEDs
- 4.8mm Straw Standard Directivity
- Long Lifetime Operation
- Superior Weather-resistance
- UV Resistant Epoxy
- Water Clear Type

■Applications

- Electronic Signs And Signals
- Small Area Illuminations
- Back Lighting
- Other Lighting

■Outline Dimension



1.Anode
2.Cathode

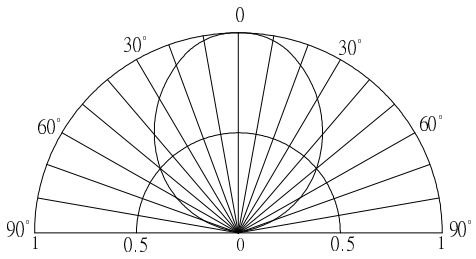
Unit:mm
Tolerance:±0.30mm

■Absolute Maximum Rating (Ta=25℃)

Item	Symbol	Value	Unit
DC Forward Current	I_F	30	mA
Pulse Forward Current*	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	108	mW
Operating Temperature	Topr	-30 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +100	℃
Lead Soldering Temperature	Tsol	260℃/5sec	-

*Pulse width Max 10ms , Duty ratio max 1/10

■Directivity



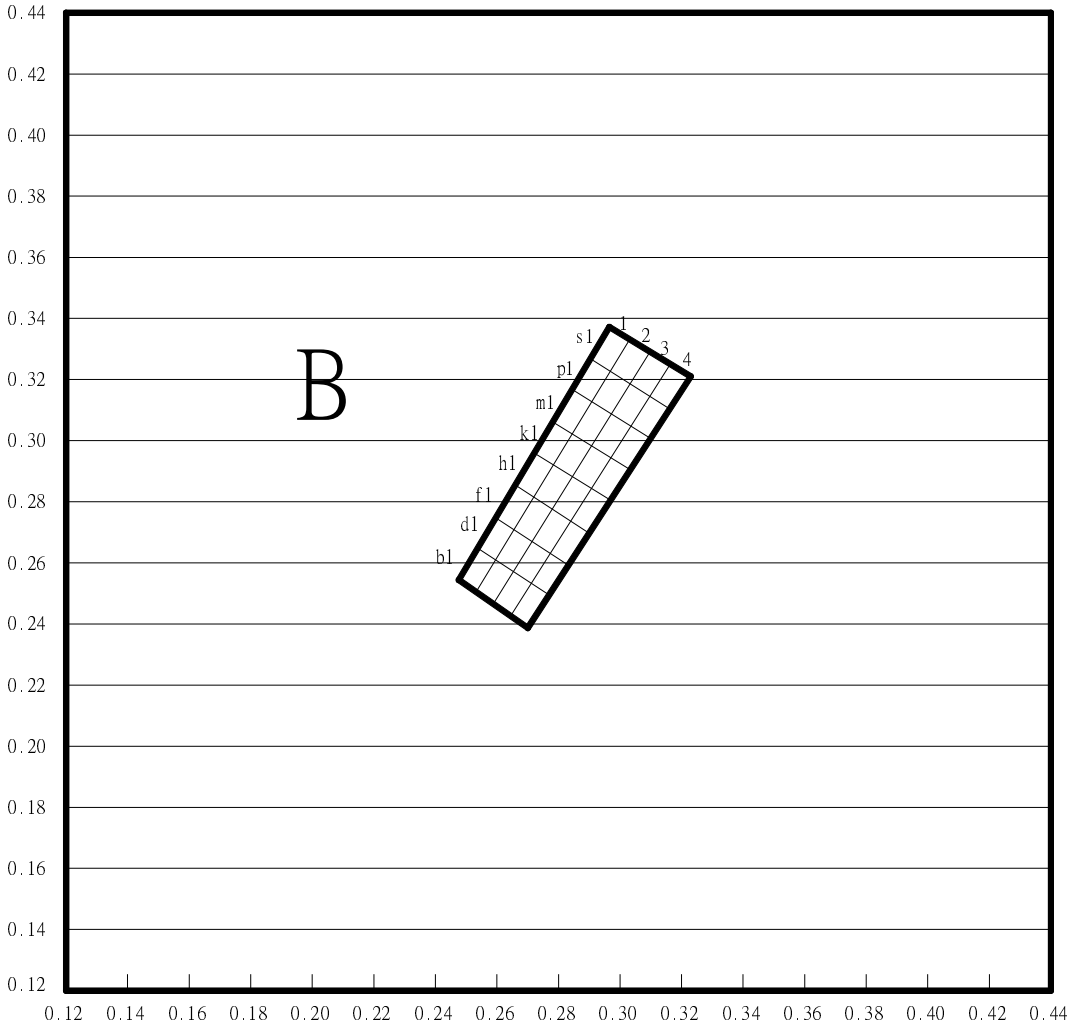
■Electrical -Optical Characteristics (Ta=25℃)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
DC Forward Voltage	V_F	I_F=20mA	2.9	3.1	3.6	V
DC Reverse Current	I_R	V_R=5V	-	-	10	μA
Luminous Intensity*	Iv	I_F=20mA	2180	3000	-	mcd
Chromaticity Coordinates*	x	I_F=20mA	-	0.27	-	
	y	I_F=20mA	-	0.28	-	
50% Power Angle	$2\theta_{1/2}$	I_F=20mA	-	100	-	deg

*1 Tolerance of chromaticity coordinates is ±10%
*2 Tolerance of luminous intensity is ±15%

LED & Application Technologies

■Color Rank For Pure White LED

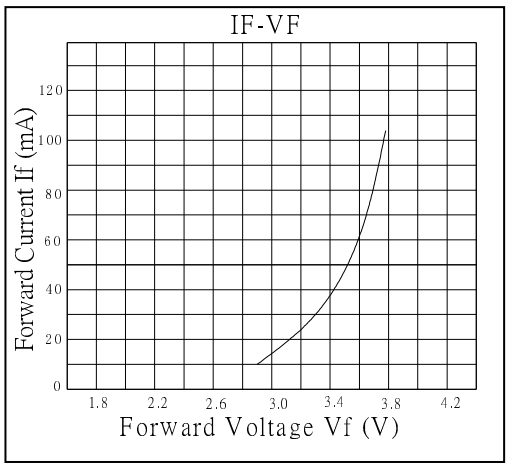


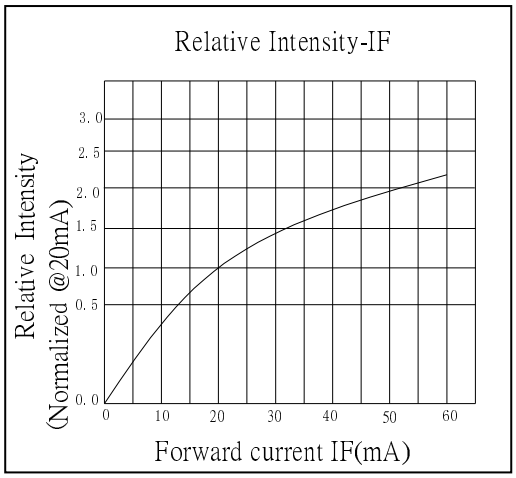
■Detail Color Bins Of The Type White LEDs

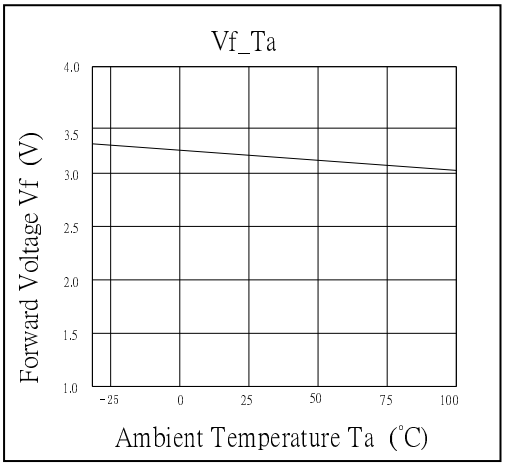
Bin	1		2		3		4	
Code	X1	Y1	X2	Y2	X3	Y3	X4	Y4
Bb1	0.247	0.254	0.253	0.264	0.27	0.238	0.276	0.249
Bd1	0.253	0.264	0.26	0.274	0.276	0.249	0.283	0.259
Bf1	0.26	0.274	0.266	0.285	0.283	0.259	0.29	0.269
Bh1	0.266	0.285	0.272	0.295	0.29	0.269	0.296	0.28
Bk1	0.272	0.295	0.278	0.305	0.296	0.28	0.303	0.29
Bm1	0.278	0.305	0.285	0.316	0.303	0.29	0.309	0.3
Bp1	0.285	0.316	0.291	0.326	0.309	0.3	0.316	0.31
Bs1	0.291	0.326	0.297	0.336	0.316	0.31	0.322	0.321

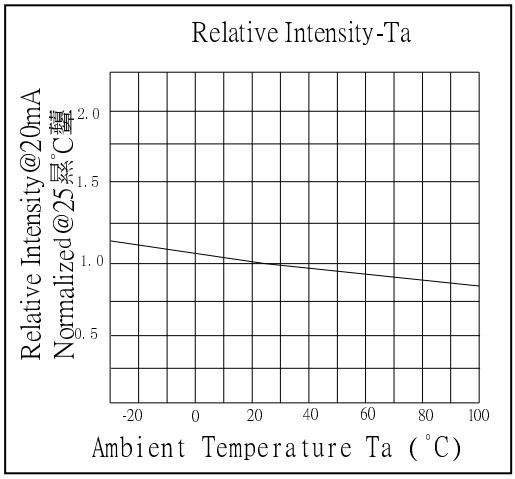
InGaN LED

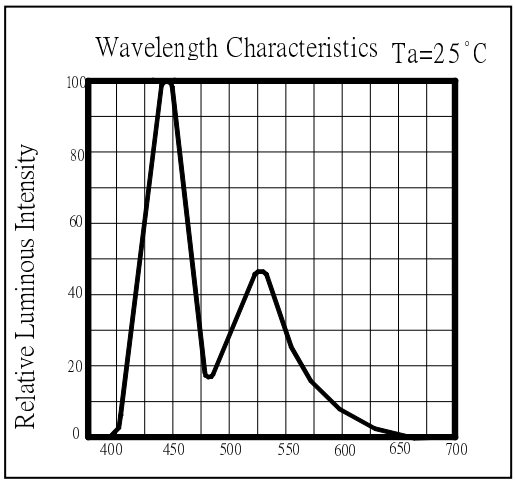
TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

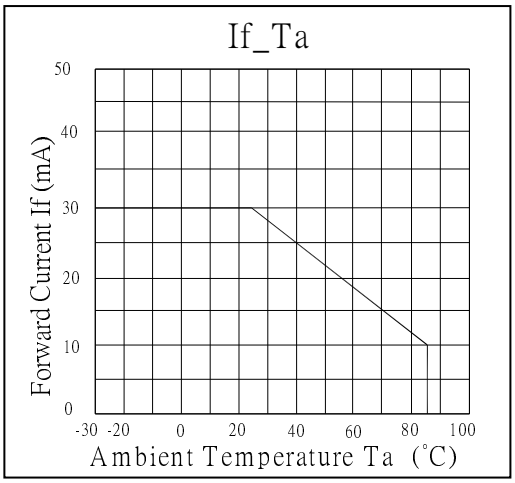












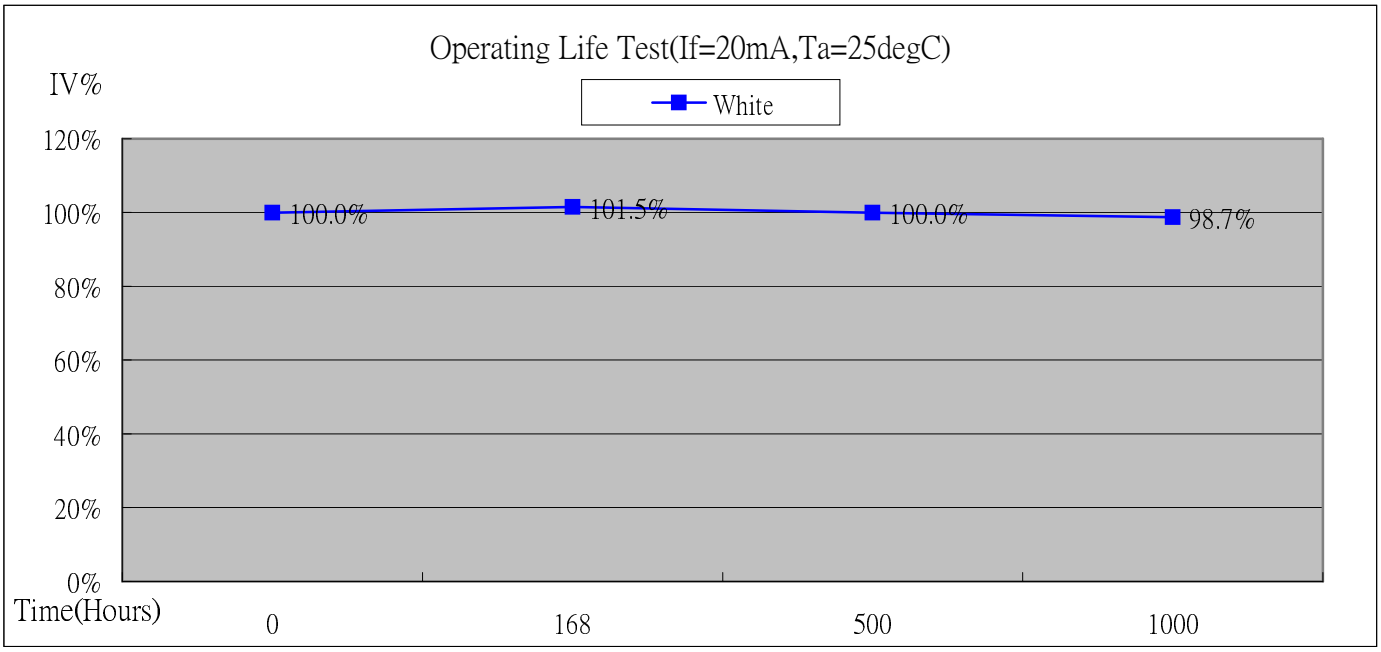
RELIABILITY TEST REPORT

CLASSIFICATION	TEST ITEM	TEST CONDTION
ENDURANCE TEST	OPERATION LIFE	If:20mA Ta:25+5 TEST TIME=1000HRS(-24HRS,+72HRS)
	HIGH TEMPERTURE HIGH HUMIDITY STORAGE	R.H:90~95% Ta:65+5℃ TEST TIME=240HRS(+2HRS)
	HIGH TEMPERTURE STORAGE	Ta:105±5℃ TEST TIME=500HRS(-24HRS,+48HRS)
	LOW TEMPERTURE STORAGE	Ta:-55±5℃ TEST TIME=500HRS(-24HRS,+48HRS)
ENVIRONMENTAL TEST	TEMPERTURE CYCLING	105℃~25℃~-55℃~25℃ 60min 10min 60min 10min 20cycles
	THERMAL SHOCK	105℃~-55℃ 10min 10min 10cycles
	SOLDER RESISTANCE	Ta:260±5℃ TEST TIME=10±1sec
	SOLDERABILITY	Ta:230±5℃ TEST TIME=5±1sec

JUDGMENT CRITERIA OF FALURE FOR THE RELIABILITY

MEASURING ITME	SYMBOL	CONDITIONS	FAILUER
LUMINOUS INTENSITY	IV	IF=20mA	IV<0.5*INITIAL VALUE
FORWARD VOLTAGE	VF	IF=20mA	VF>1.2*INITIAL VALUE
REVERSE CURRENT	IR	Vr=5V	IR>2*SPEC

OPERATION LIFE TEST LUMINANCE RATE CURVE



*Burn-in condition: 20mA

*Projection of Statistical Average Light Output Degradation Performance for LED Technology Extrapolated from OptoSupply QA Dept. Test Data.

*According to OptoSupply outgoing Packaged Products Specification

*MTBF:50,000hrs, 90% Confidence (A Failure is Any LED Which is Open, shorted or fails to Emit Light)

*The Projected Data is Base on The Feature of LED Itself Under Normal Operation Conditions.

*Any Improper Circuit Design or External Factors Might Cause a Different Result.

LAMP APPLICATION (PB FREE SOLDERJING)

Apply to LAMP (DIP) SERIES.

Description:

(1) Manual soldering (Solder Iron)

(1.1) Temperature at tip of the iron:300℃ Max.

(1.2) It's banned to load any stress on the resin during soldering.

(1.3) Soldering time: 3sec.Max.(one time only.)

(1.4) Leave 3mm of minimum distance from the base of the epoxy.

(2) Dip Soldering (Wave Soldering-Solder Bath)

(2.1) Leave 3mm of minimum distance from the base of the epoxy.
Soldering beyond the base of the tie bar (stand off) is recommended.

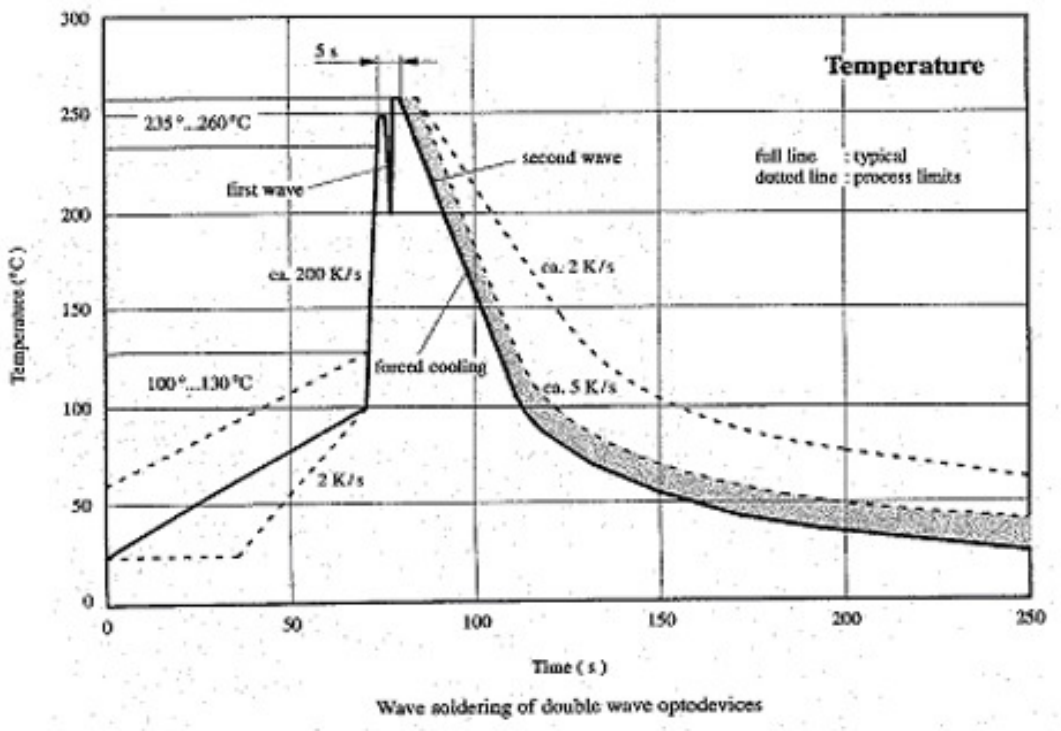
(2.2) When soldering, do not put stress on the LEDs during heating.

(2.3) Cutting the lead frames at high temperatures may cause LED failure.

(2.4) Never take next process until the component is cooled down to room temperature after reflow.

(2.5) After soldering, do not warp the circuit board.

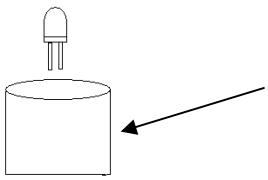
(2.6) The recommended dip soldering profile is the following.



Wave soldering of double wave optodevices

LAMP PACKING

500pcs/Bag



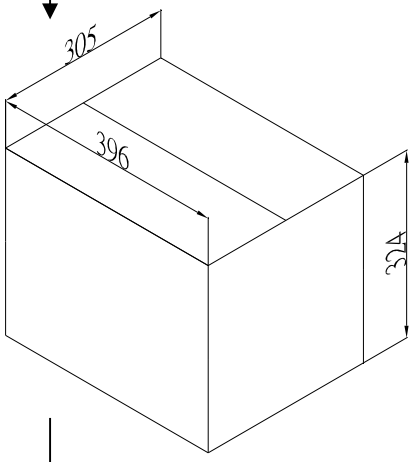
LED LAMPS
PART NO:_____
LOT NO:_____
IV: _____
VF: _____
COLOR: _____
QTY: _____
QC: _____

BOX

Dimension（mm）

396*305*324

40Bags/Box

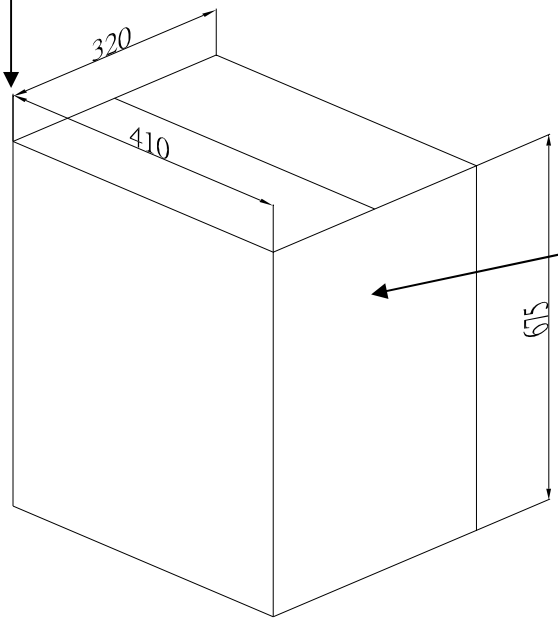


Carton

Dimension（mm）

675*410*320

2Boxes/Carton



LED LAMPS
PART NO:_____
LOT NO:_____
IV: _____
VF: _____
COLOR: _____
QTY: _____
QC: _____