BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED!

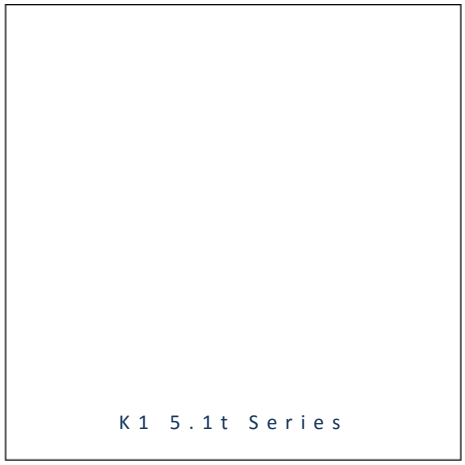
ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

PRODUCT DATASHEET

- ▶ PLCC2 Top View
- ▶ K1 5.1t Series
- ▶ UV (400-410nm)

Release Date: 21 September 2016 Version: A1.0

N0Q06S24 (Tube)
N0Q06S24RL (Reel)



Isaac

RoHS Compliant

FEATURES:

- **Package:** PLCC White SMT Package Top View
- **Forward Current:** 500mA
- **Forward Voltage (typ.):** 3.4V
- **Luminous Flux (typ.):** 420mW@500mA
- **Colour:** Ultraviolet (UV)
- **Wavelength:** 400-410nm
- **Viewing angle:** 135°
- **Materials:**
  - Die: InGaN
  - Resin: Silicon (Water Clear)
- **Operating Temperature:** -40~+105°C
- **Storage Temperature:** -40~+120°C
- **Grouping parameters:**
  - Forward voltage
  - Radiometric Power
  - Wavelength
- **Soldering methods:** Reflow soldering
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 2000pcs/carton (40 tubes); 50pcs/tube or 24mm tape with 1000pcs/reel, ø330mm (13'')

APPLICATIONS:

- Medical Lamp
- Curing
- Defect Detection Lamp
- Counterfeit Detection Lamp

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	500	mA
Peak Forward Current Duty 1/10@10KHz	I_{FP}	700	mA
Operating Temperature	T_{OPR}	-40~+105	°C
Storage Temperature	T_{STG}	-40~+120	°C
Junction Temperature	T_j	120	°C
Electrostatic Discharge (HBM)	ESD	5000	V

1. Not suitable to be driven in reverse bias.

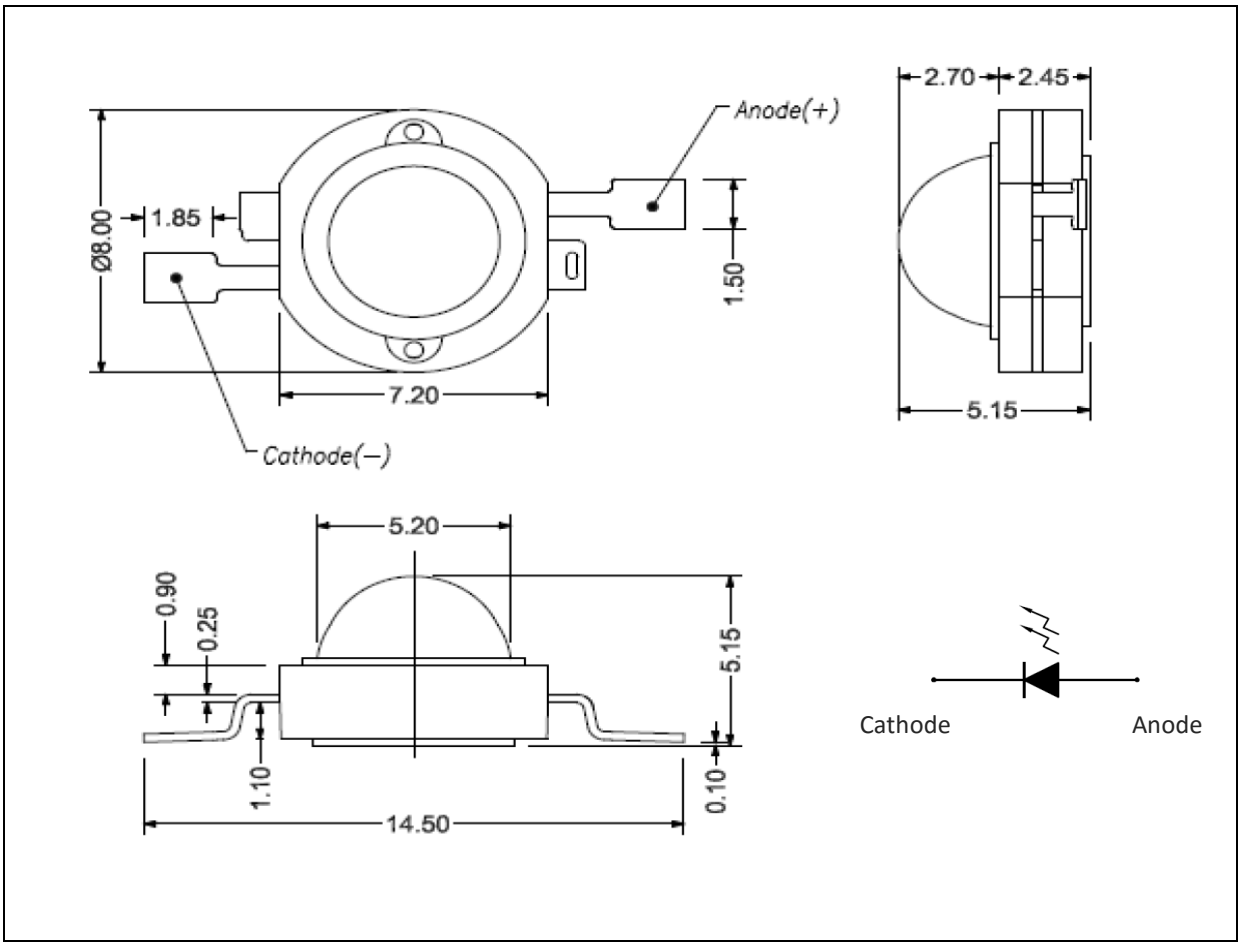
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	3.2	---	3.7	V	I_F=350mA
Radiometric Power	P_O	380	420	---	mW	I_F=350mA
Dominant Wavelength	λ_d	400	---	410	nm	I_F=350mA
Viewing Angle	$2\theta_{1/2}$	---	135	---	deg	I_F=350mA

2. Luminous intensity (I_V) ±15%, Forward Voltage (V_F) ±0.1V, Viewing angle($2\theta_{1/2}$) ±5%

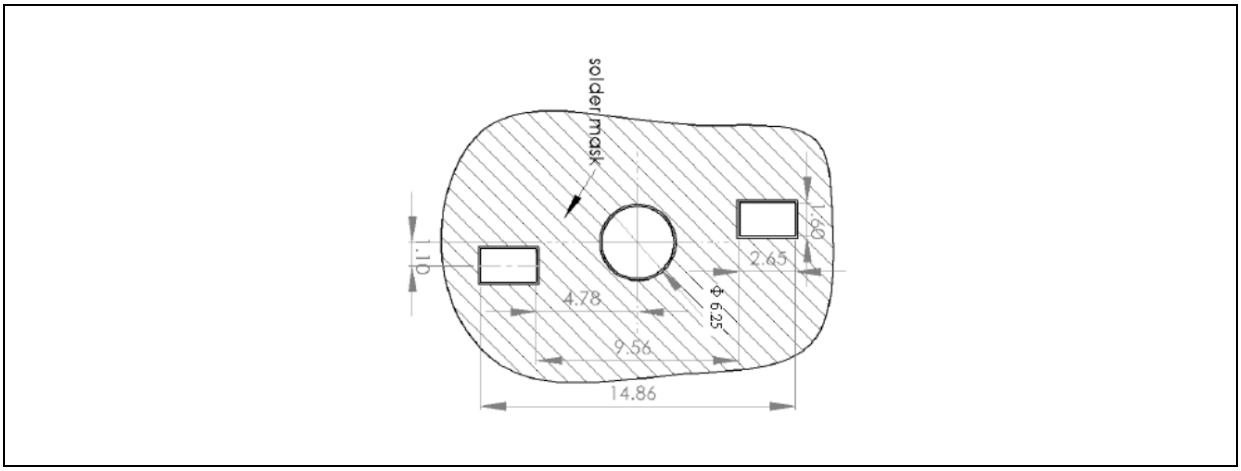
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance ±0.2mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance ±0.1mm with angle tolerance ±0.5°.

BINNING GROUPS:

Forward Voltage Classifications (I_F = 350mA):

Code	Min.	Max.	Unit
1	3.2	3.7	V

Radiometric Power Classifications (I_F = 350mA):

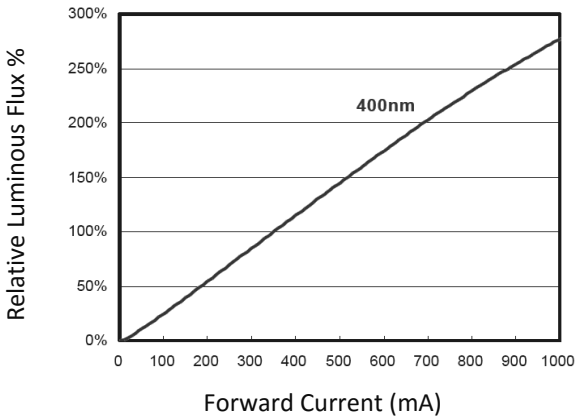
Code	Min.	Max.	Unit
U1	380	420	mW
U2	420	460	

Wavelength Classifications (I_F = 350mA):

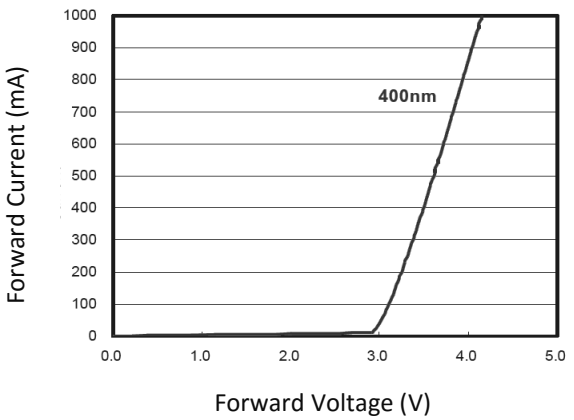
Code	Min.	Max.	Unit
V3	400	405	nm
V4	405	410	

ELECTRO-OPTICAL CHARACTERISTICS:

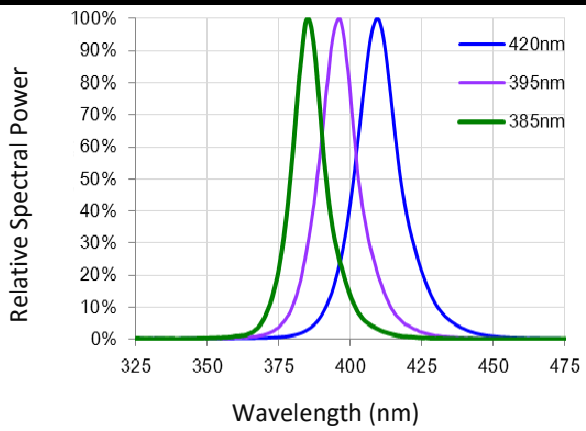
Relative Luminous Flux v.s. Forward Current



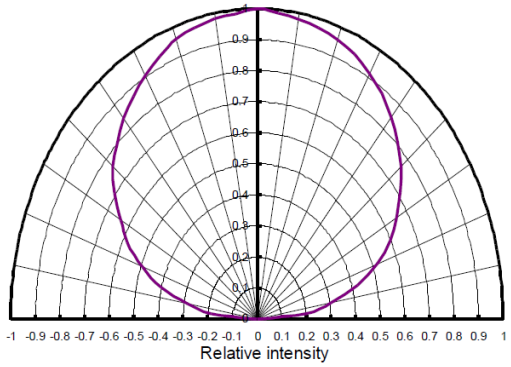
Forward Current v.s. Forward Voltage



Relative Spectral Power v.s. Wavelength

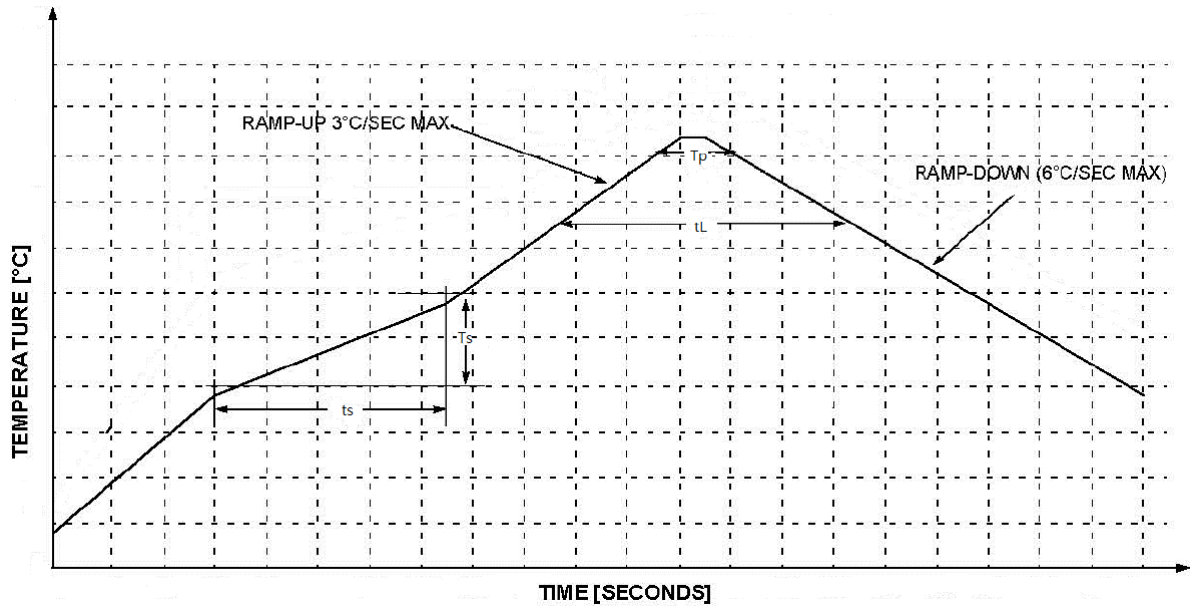


Directive Radiation



RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:



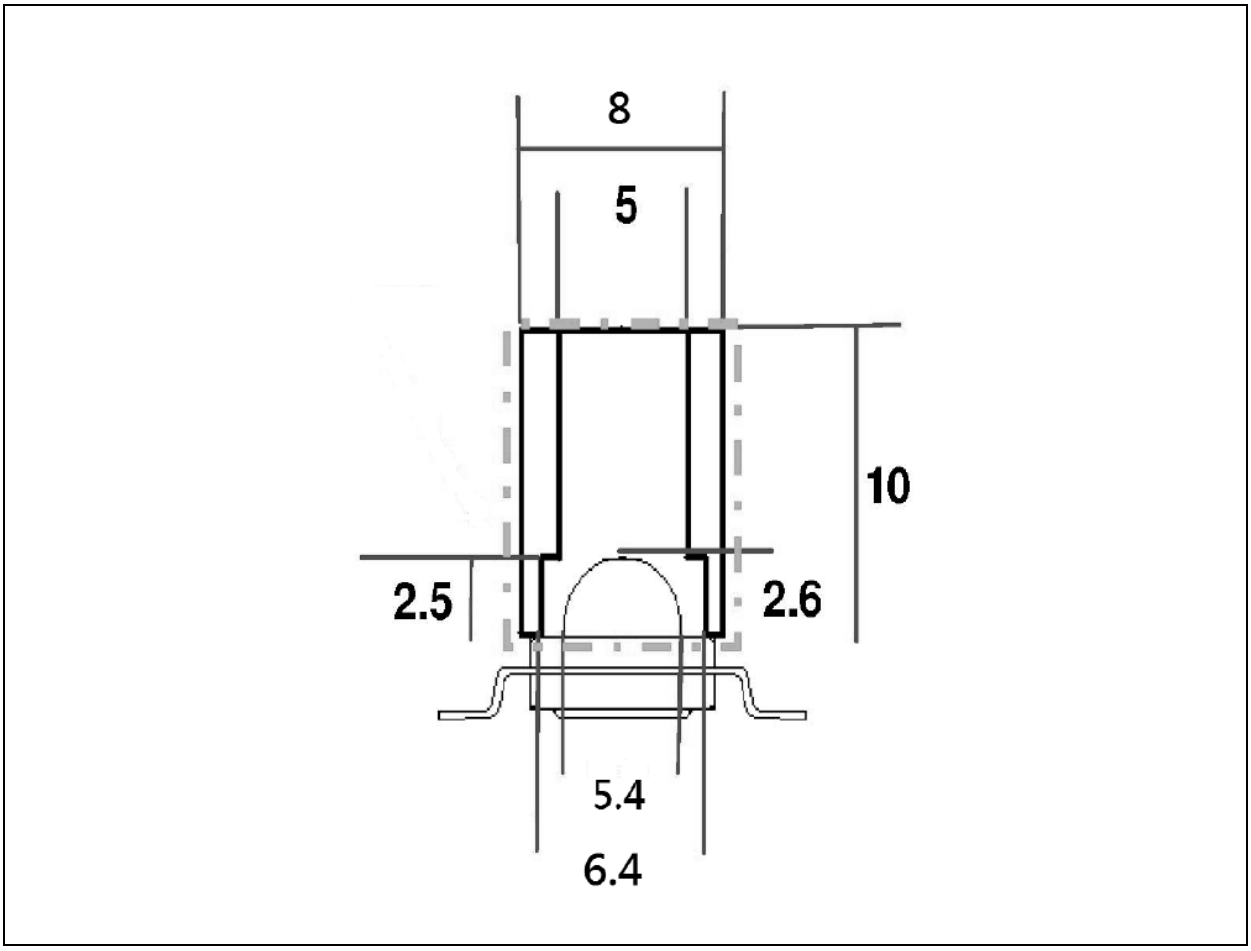
Symbol	Min.	Max.	Unit
T_s	100	150	°C
T_s	60	120	S
T_l	60	150	S
T_p	225	250	°C

Note:

1. Maximum reflow soldering: 1 time.
2. Before, during, and after soldering, should not apply stress on the components and PCB board.

RECOMMENDED NOZZLE FOR SMT:

Recommended Pick & Place Nozzle:

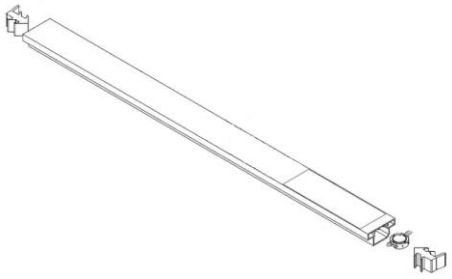


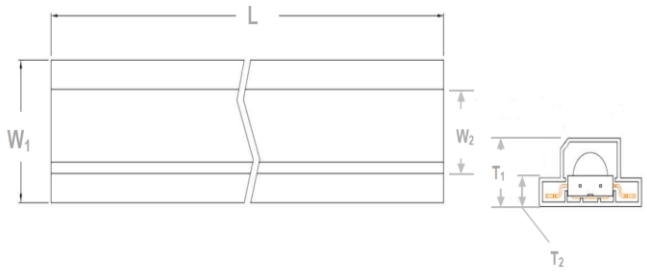
1. All dimensions are in millimetre (mm).
2. Tolerance ±0.1mm, unless otherwise noted.

PACKING SPECIFICATION:

Tube Dimension:

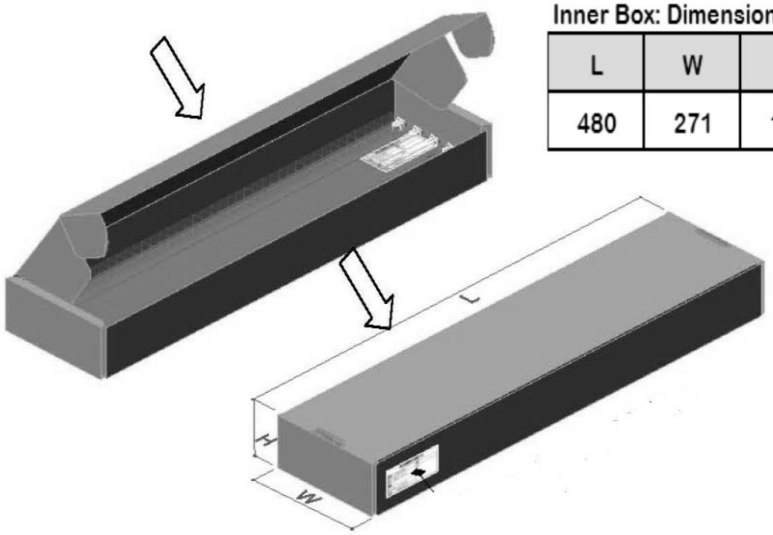
2000pcs/carton (40 tubes); 50pcs/tube





Unit(mm)

W_1	W_2	T_1	T_2	L
16.5	9.7	7.9	3.3	420



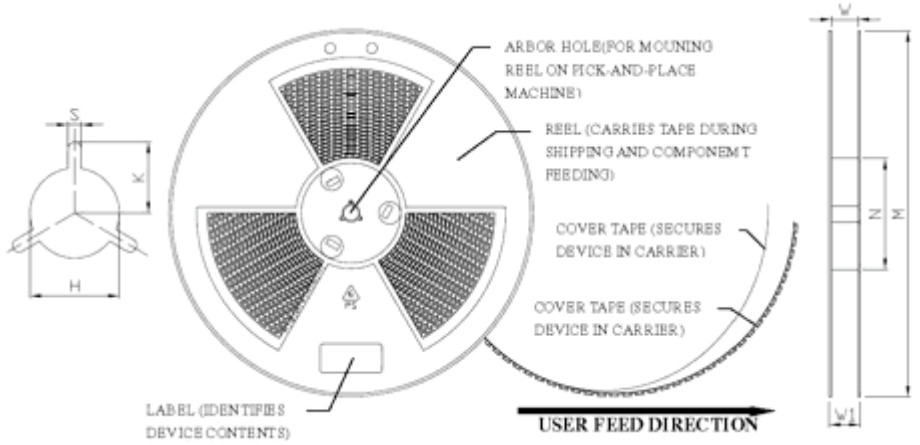
Inner Box: Dimension(mm)

L	W	H
480	271	172

PACKING SPECIFICATION:

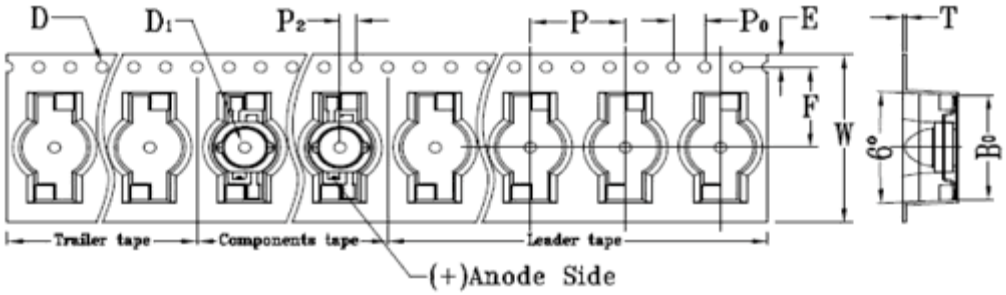
Reel Dimension:

1000pcs/reel



Unit: mm

M	N	W	W1	H	K	S
Φ330.0	Φ99.5	24.4	29	Φ13.5	10.75	2.5
±1.0	±1.0	±1.0	±1.0	±0.5	±0.5	±0.5



Unit: mm

W	P	E	F	P_2	D	D_1	P_0	A_0	B_0	K_0	T
24.0	12.0	1.75	11.5	2.0	1.5	1.5	4.0	8.2	15.0	6.7	0.4
±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.25	±0.1	±0.1	±0.1	±0.1	±0.05

PRECAUTIONS OF USE:

Storage:

It is recommended to store the products in the following conditions:

- Humidity: 60% R.H. Max.
- Temperature: 5°C~30°C (41°F ~86°F).

Shelf life in sealed bag: 12 month at 5°C~30°C and <60% R.H.

Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with descanting agent and apply baking at 60°C±5°C for 15hrs before use.

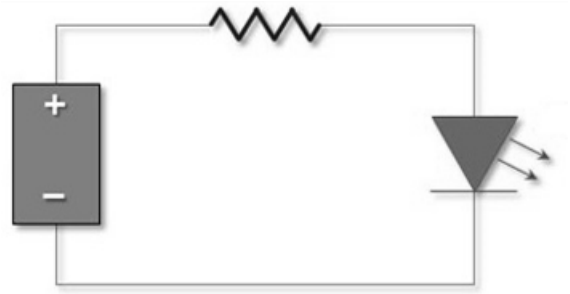
Baking:

It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs. The suggested baking conditions are as followings:

- 70±3°C x 24hrs and <5%RH, taped / reel package.
- 100±3°C x 2hrs, bulk (loose) package.
- 130±3°C x 30min, bulk (loose) package.

It's normal to see slight color fading of carrier (light yellow) after baking in process.

Testing Circuit:



Must apply resistor(s) for protection (over current proof).

Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED carrier / package. Avoid putting any stress force directly on to the LED lens.

ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrosatic glove is recommended when handing the LED all time. All devices, equipment, machinery, work tables, and storage racks must be properly grounded.

In the events of manual working in process, make sure the devices are well protected from ESD at any time.

REVISION RECORD:

Version	Date	Summary of Revision
A1.0	21/09/2016	Datasheet set-up.