



BRIGHTTEK
BRIGHTTEK (EUROPE) LIMITED

Brighten Up The World With LED!



ISO/TS 16949:2009



BS EN ISO 14001:2004



QC 080000 IECQ HSPM

PRODUCT DATASHEET

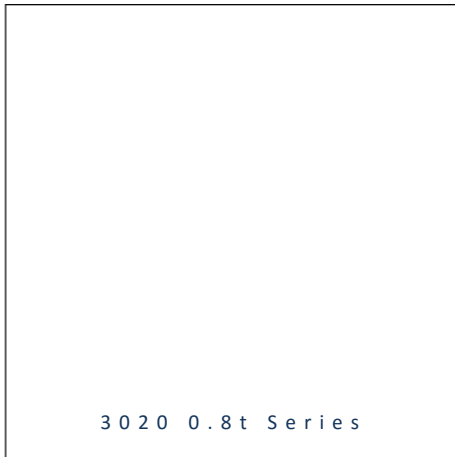


- ▶ PLCC2 SMD
- ▶ 3020 0.8t Series
- ▶ Sky White (>9000K)

NOW18S87



Release Date: 20 June 2017 Version: A1.0



3020 0.8t Series

3020 0.8t Series

RoHS
Compliant



FEATURES:

- **Package:** PLCC2 White Top View SMD Package
- **Forward Current:** 60mA
- **Forward Voltage (typ.):** 3.2V
- **Luminous Intensity (typ.):** 6000mcd@60mA
- **Colour:** Sky White
- **CCT:** 11000-25600K
- **Viewing angle:** 120°
- **Materials:**
 - Die: InGaN
 - Resin: Silicon (Yellow Diffused)
 - L/T Finish: Ag
- **Operating Temperature:** -20~+80°C
- **Storage Temperature:** -30~+100°C
- **Grouping parameters:**
 - Forward Voltage
 - Luminous Intensity
 - CIE Chromaticity
- **Soldering methods:** IR Reflow Soldering
- **Preconditioning:** MSL3 according to J-STD020
- **Packing:** 8mm tape with 2000/reel, ø180mm (7")

APPLICATIONS:

- LCD Back Light
- Indicator
- Switch Lights

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	65	mA
Pulse Forward Current (Duty 1/10 @10KHz)	I_{PF}	100	mA
Reverse Current @5V	I_R	50	μ A
Power Dissipation	P_D	216	mW
Electrostatic Discharge (HBM)	ESD	500	V
Operating Temperature	T_{OPR}	-20~+80	°C
Storage Temperature	T_{STG}	-30~+100	°C

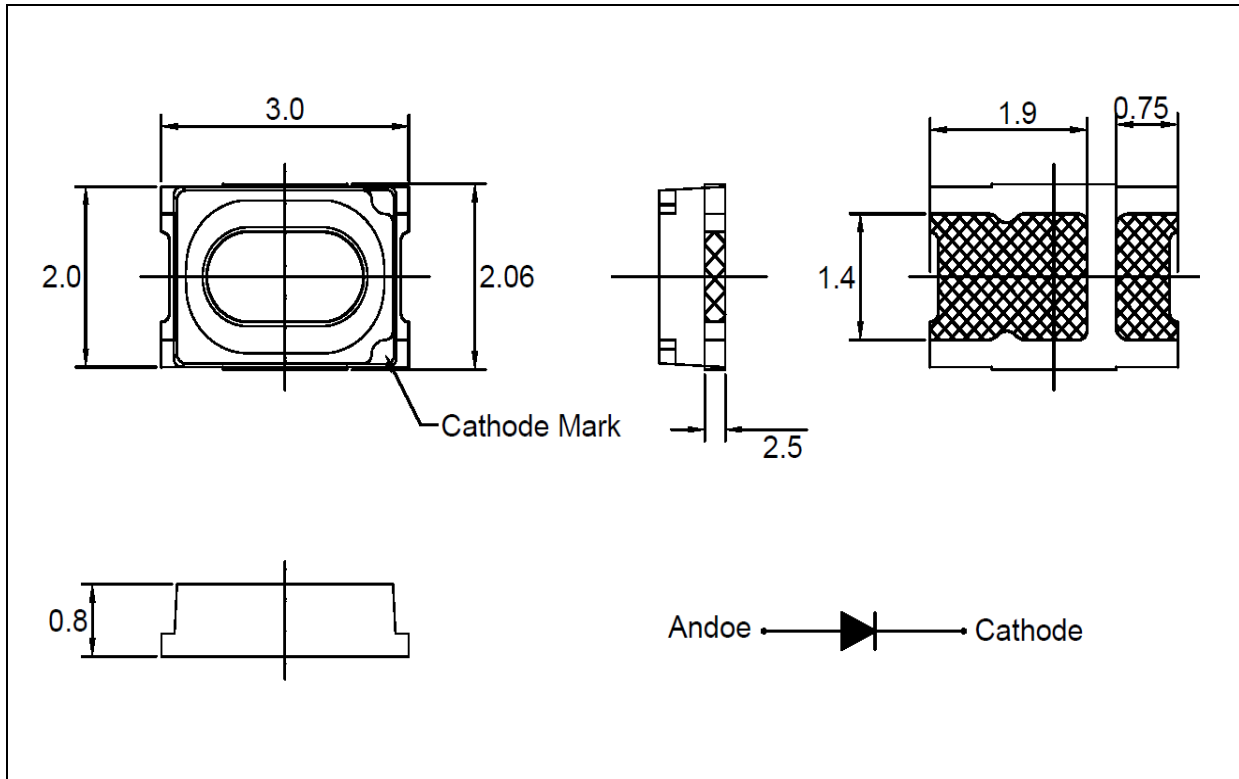
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	2.8	3.2	3.6	V	$I_F=60$ mA
Luminous Intensity	I_V	5000	6000	7500	mcd	$I_F=60$ mA
Chromaticity Coordinates	X	0.2655	---	0.2747	---	$I_F=60$ mA
	Y	0.2339	---	0.2812		
Colour Temperature	CCT	11000	12500	25600	K	$I_F=60$ mA
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	$I_F=60$ mA

1. Luminous intensity (Φ_v) $\pm 5\%$, Forward Voltage (V_F) ± 0.05 V, Viewing angle($2\theta_{1/2}$) $\pm 10^\circ$

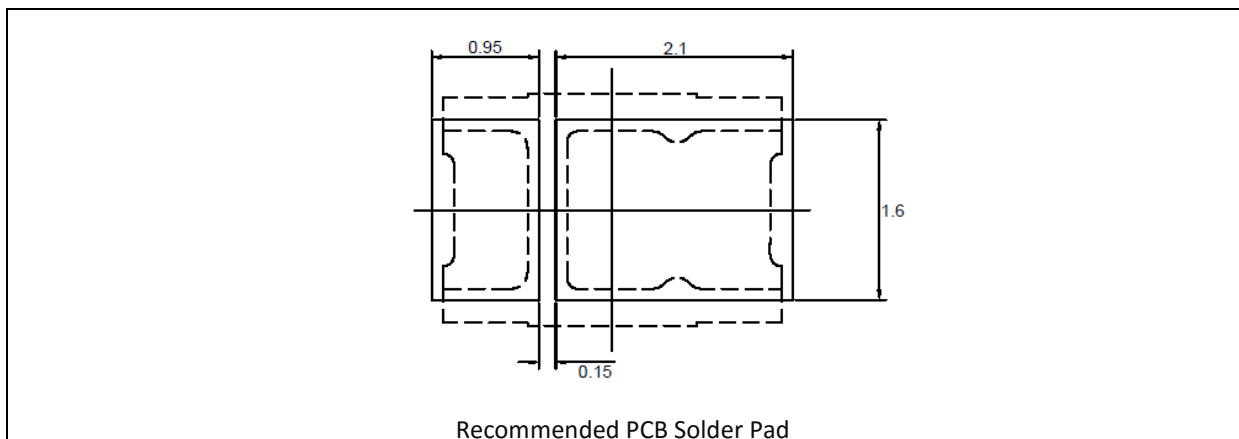
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance $\pm 0.2\text{mm}$, unless otherwise noted.

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance $\pm 0.1\text{mm}$ with angle tolerance $\pm 0.5^\circ$.

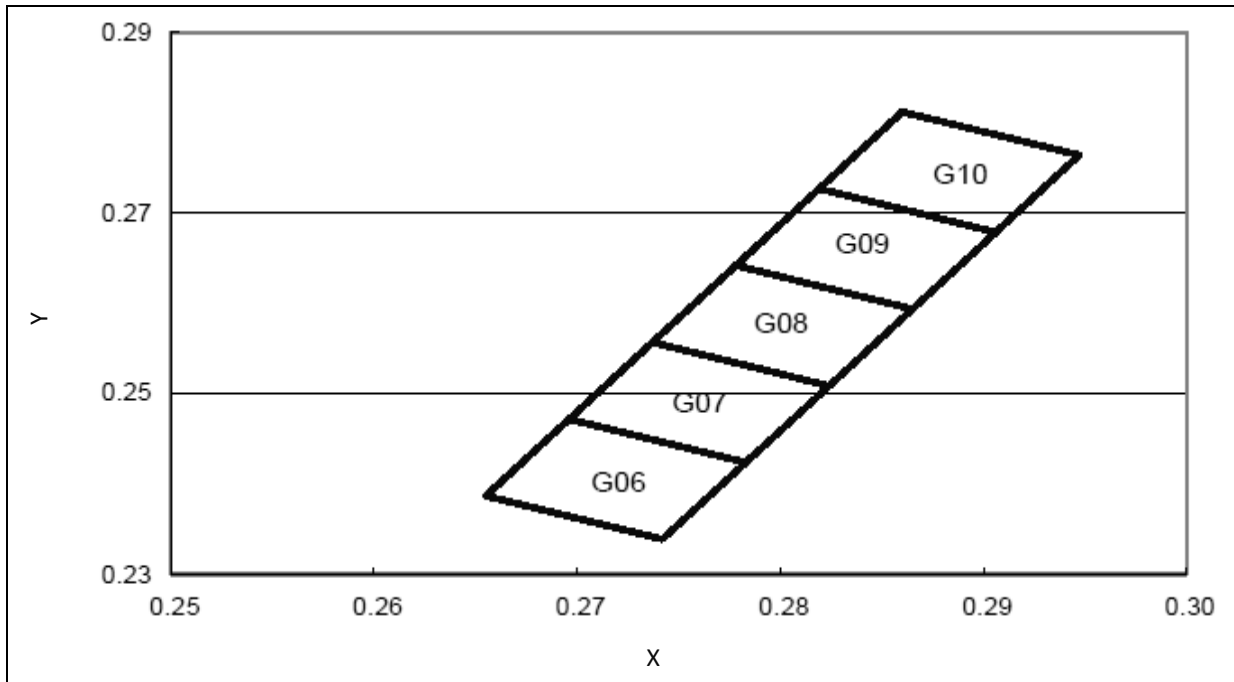
BINNING GROUPS:

 Forward Voltage Classifications ($I_F = 60\text{mA}$):

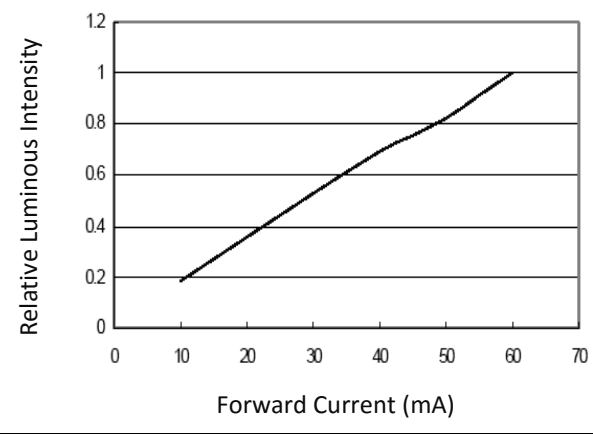
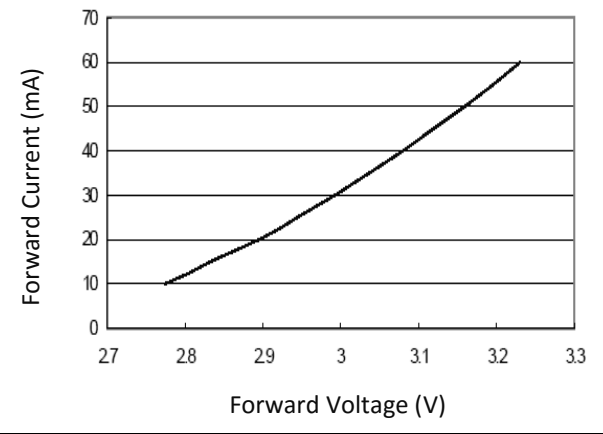
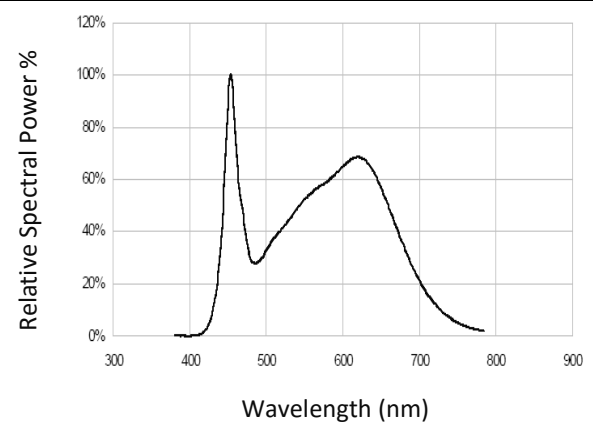
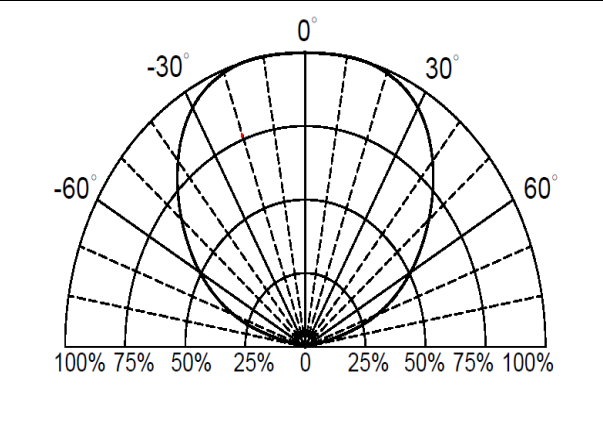
Code	Min.	Max.	Unit
1	2.8	2.9	V
2	2.9	3.0	
3	3.0	3.1	
4	3.1	3.2	
5	3.2	3.3	
6	3.3	3.4	
7	3.4	3.5	
8	3.5	3.6	

 Luminous Intensity Classifications ($I_F = 60\text{mA}$):

Code	Min.	Max.	Unit
C00C50	5000	5500	mcd
C50D00	5500	6000	
D00D50	6000	6500	
D50E00	6500	7000	
E00E50	7000	7500	

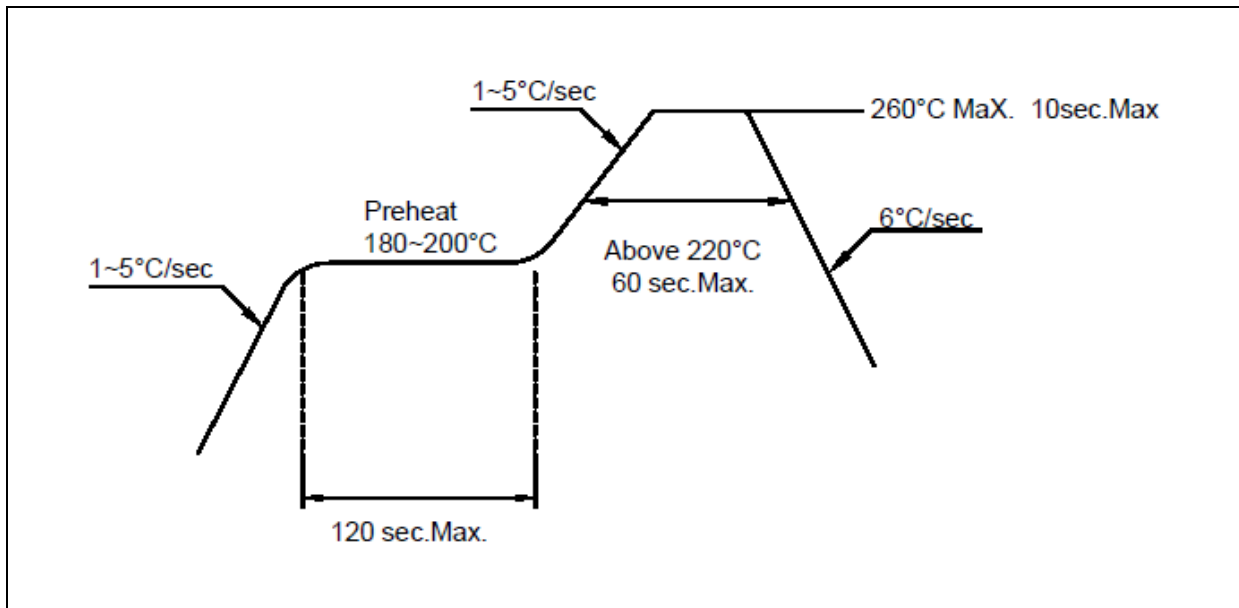
CIE CHROMATICITY DIAGRAM:

 Chromaticity Coordinates Classifications ($I_F = 60\text{mA}$):

	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
G06	0.2655	0.2387	0.2742	0.2339	0.2783	0.2424	0.2696	0.2472
G07	0.2696	0.2472	0.2783	0.2424	0.2824	0.2509	0.2737	0.2557
G08	0.2737	0.2557	0.2824	0.2509	0.2865	0.2594	0.2778	0.2642
G09	0.2778	0.2642	0.2865	0.2594	0.2906	0.2679	0.2819	0.2727
G10	0.2819	0.2727	0.2906	0.2679	0.2947	0.2764	0.2860	0.2812

ELECTRO-OPTICAL CHARACTERISTICS:
Relative Luminous Intensity v.s. Forward Current

Forward Current v.s. Forward Voltage

Relative Spectral Power v.s. Wavelength

Directive Radiation


RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

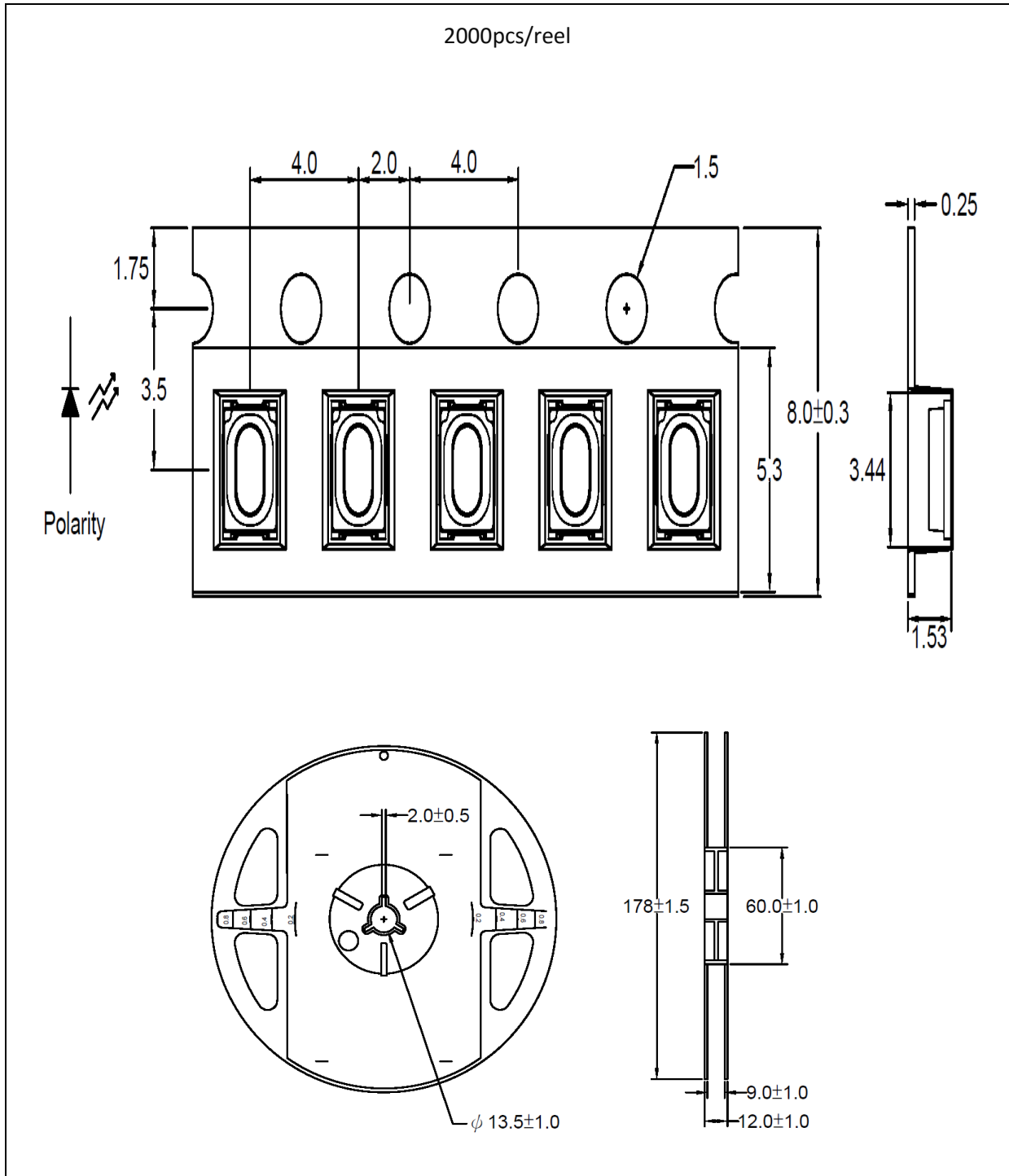


Note:

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

PACKING SPECIFICATION:

Reel Dimension:



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 desiccating agent and apply baking at 60°C±5°C for 15hrs before use.

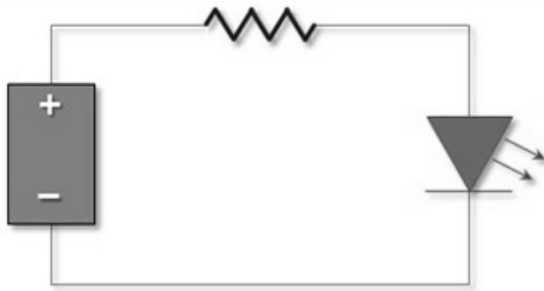
Baking:

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:

- 60±5°C x 15hrs and <5%RH, taped / reel 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 handling 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	28/07/2015	Datasheet set-up.
A1.1	20/06/2017	Revise test condition.