BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

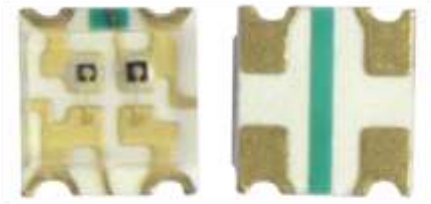
Brighten Up The World With LED!

PRODUCT DATASHEET

- ► PCB / CHIP LED
- ► 0606 (1615) 0.6t
- ► Red 622nm / Green 570nm

Release Date: 07 September 2023 Version: A1.2

N0D01S79



0606 (1615) 0.6t

0606 (1615) 0.6t

RoHS Compliant

FEATURES (Red/Green):

- **Package:** PCB / CHIP Top View SMT Package
- **Forward Current:** 20/20mA*
- **Forward Voltage (typ.):** 2.1/2.1V
- **Luminous Flux (typ.):** 125/55mcd @20mA
- **Colour:** Red/Green
- **Dominant Wavelength:** 622/570nm
- **Viewing Angle:** 140/140°
- **Materials:**
  - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **ESD:** 2000V (HBM)
- **Grouping Parameters:**
  - Forward voltage
  - Luminous intensity
  - Dominant wavelength
- **Soldering Methods:** Reflow soldering
- **MSL Level:** according to JEDEC level 2a
- **Packing:** 8mm tape with max.4000pcs/reel, ø180mm (7'')

* in order of Red/Green

APPLICATIONS:

- Switch Light
- 3C Application
- Decoration Lighting
- Signal Lighting

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	30/30*	mA
Pulse Forward Current (duty 1/10; width 0.1ms)	I_{MAX}	100/100	mA
Reverse Voltage	V_R	8	V
Reverse Current @5V	I_R	10	μA
Electrostatic Discharge (HBM)	ESD	2000	V
Junction Temperature	T_j	110	°C
Soldering Temperature	T_{sol}	260	°C
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-40~+100	°C

1. * In the order of Red/Green.

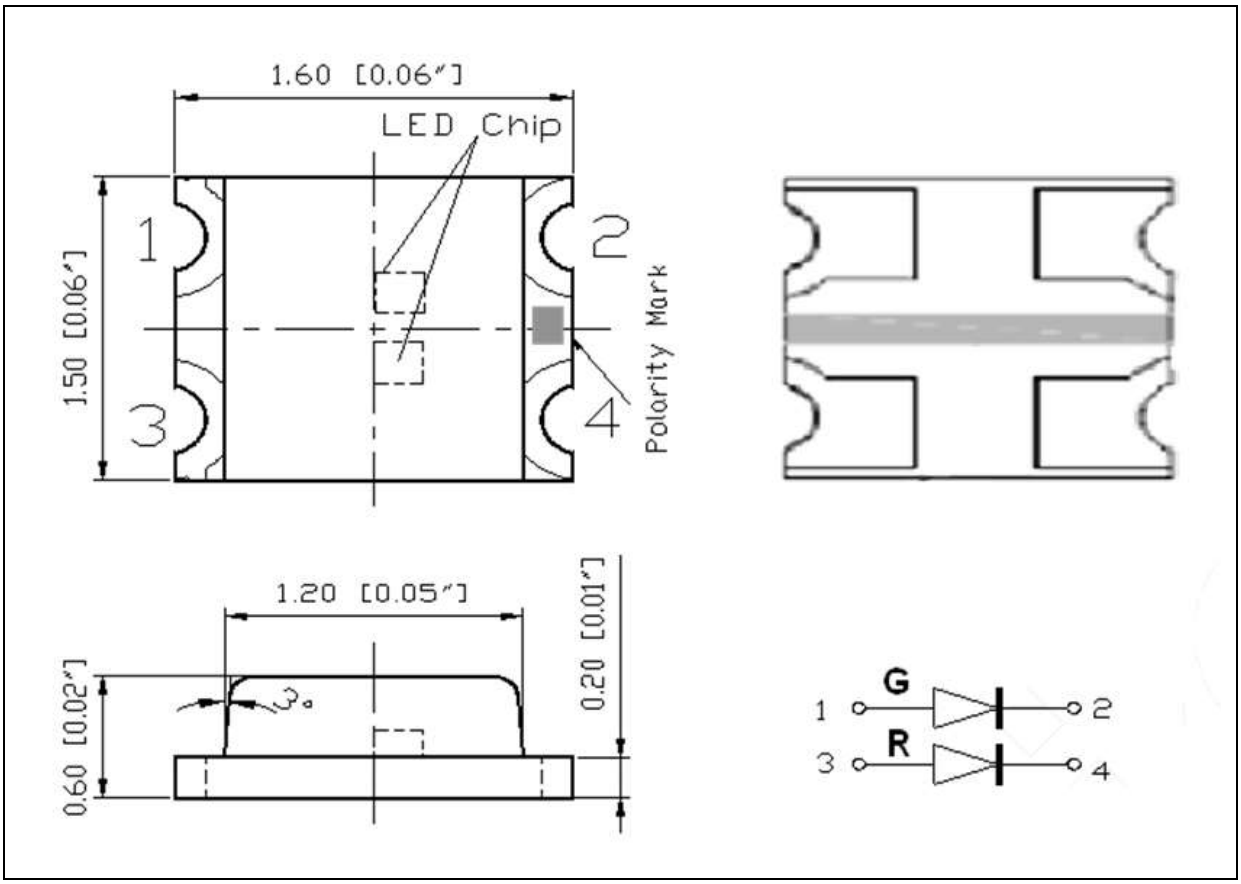
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Red - Forward Voltage	V_F	1.7	---	2.5	V	I_F=20mA
Red - Luminous Intensity	I_V	80	125	---	mcd	I_F=20mA
Red - Wavelength	W_P	615	---	630	nm	I_F=20mA
Green - Forward Voltage	V_F	1.7	---	2.5	V	I_F=20mA
Green - Luminous Intensity	I_V	32	55	---	mcd	I_F=20mA
Green - Wavelength	W_P	565	---	576	nm	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	---	140	---	deg	I_F=20mA

1. Luminous intensity (I_V) ±10%, Forward Voltage (V_F) ±0.1V, Viewing angle($2\theta_{1/2}$) ±5%, Wavelength (λ) ±1nm

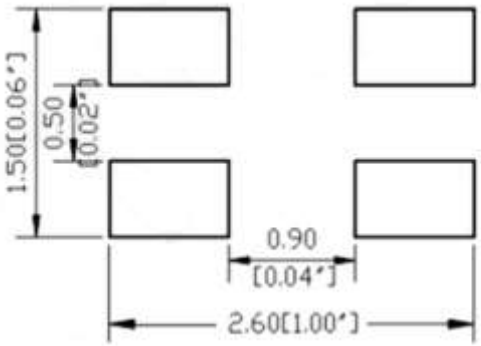
OUTLINE DIMENSION:

Package Dimension:



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

Recommended Soldering Pad Dimension:



Recommended PCB Solder Pad

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

BINNING GROUPS:

Forward Voltage Classifications (I_F = 20mA):

Code		Min.	Max.	Unit
☐	Red	1.7	2.5	V
	Green	1.7	2.5	

Luminous Intensity Classifications (I_F = 20mA):

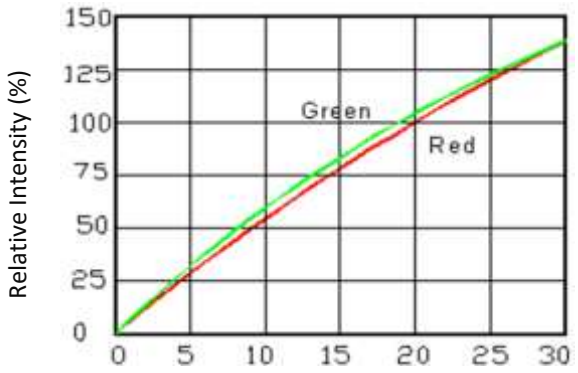
Code		Min.	Max.	Unit
Red	I	80	100	mcd
	J	100	125	
	K	125	160	
	L	160	200	
Green	E	32	40	mcd
	F	40	50	
	G	50	63	
	H	63	80	

Dominant Wavelength Classifications (I_F = 20mA):

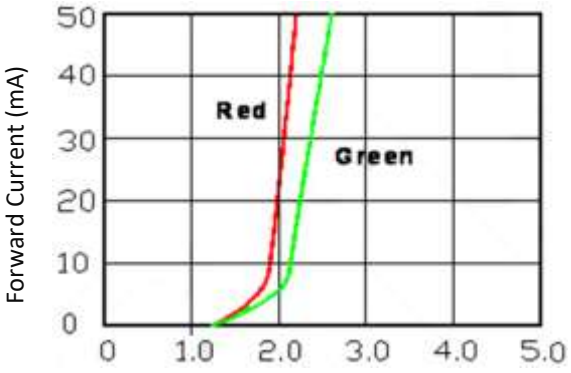
Code		Min.	Max.	Unit
Red	s	615	620	nm
	t	620	625	
	u	625	630	
Green	h	565	568	nm
	i	568	572	
	j	572	576	

ELECTRO-OPTICAL CHARACTERISTICS:

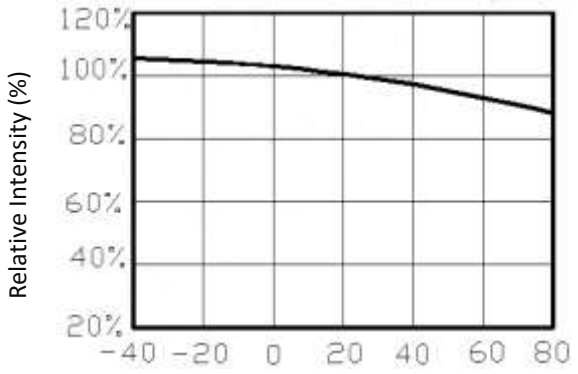
Relative Intensity v.s. Forward Current



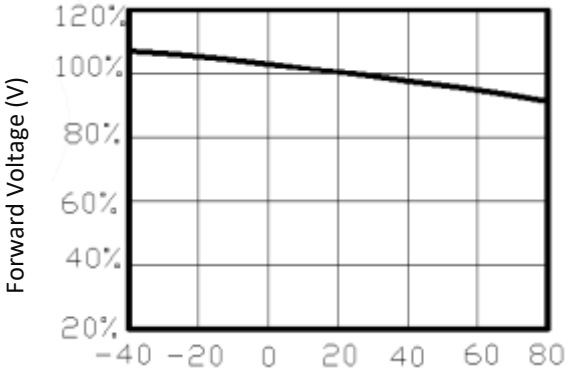
Forward Current v.s. Forward Voltage



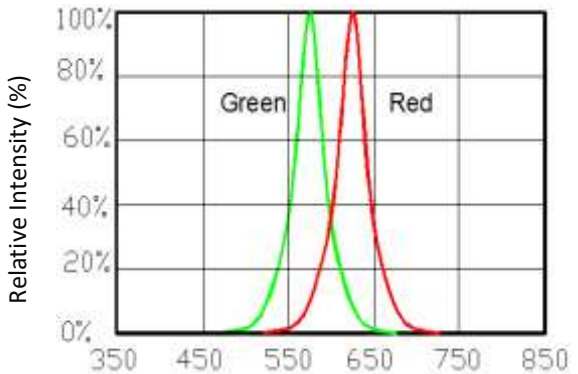
Relative Intensity v.s. Ambient Temperature



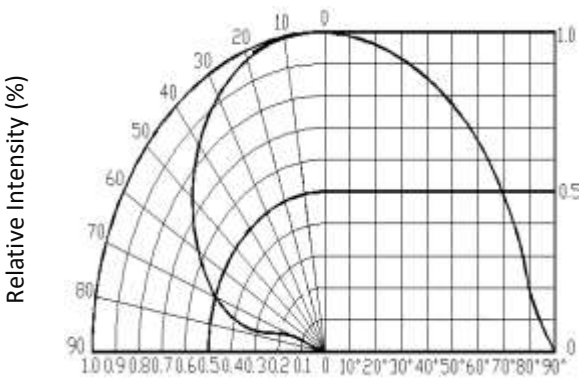
Forward Voltage v.s. Ambient Temperature



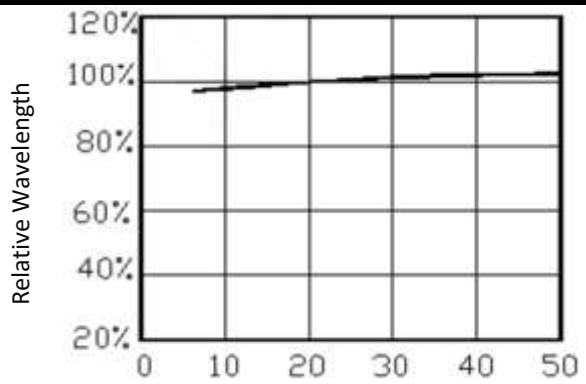
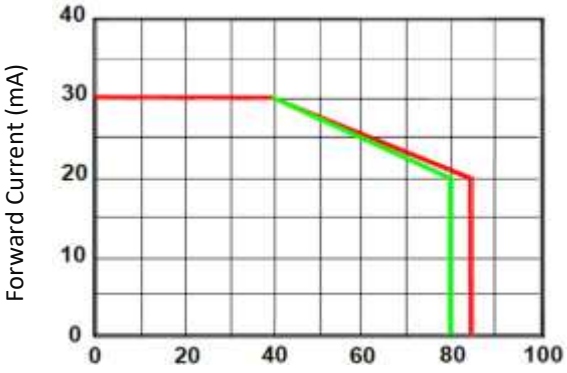
Relative Spectral Distribution



Directive Radiation

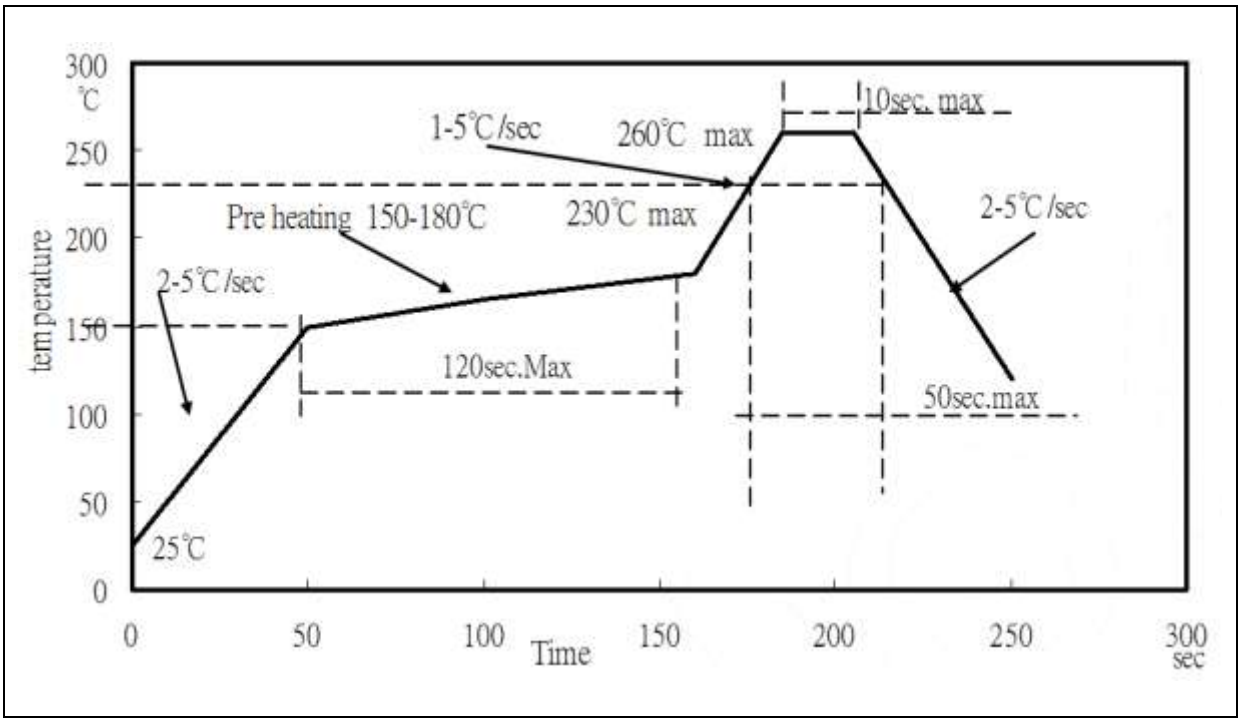


ELECTRO-OPTICAL CHARACTERISTICS:

Wavelength Shift v.s. Forward Current	Maximum Current v.s. Ambient Temperature
	

RECOMMENDED SOLDERING PROFILE:

Lead-free Solder:



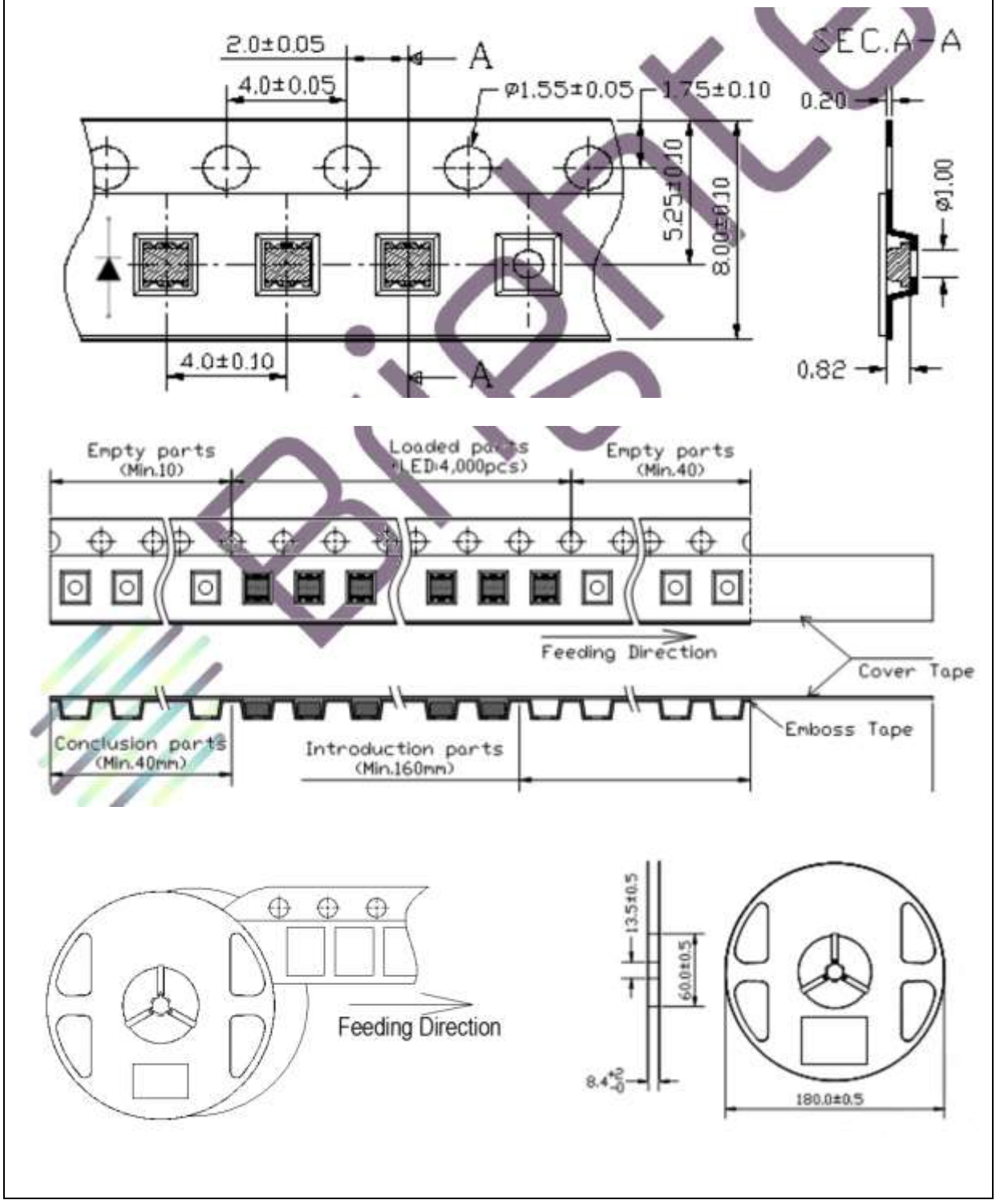
Note:

1. Maximum reflow soldering: 3 times.
2. Recommended reflow temperature is 240°C; the maximum soldering temperature should be limited to 260°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

PACKING SPECIFICATION:

Reel Dimension:

Max.4000pcs/reel



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 months 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 <10% R.H. and apply baking before use.

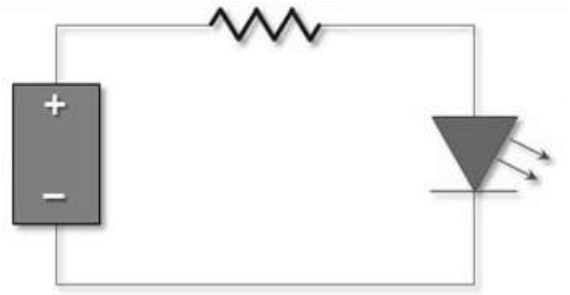
Baking:

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±3°C x 24hrs 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 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	19/05/2016	Datasheet set-up.
A1.1	07/09/2023	Revise bin range.