BRIGHTEK
BRIGHTEK (EUROPE) LIMITED
Brighten Up The World With LED!

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

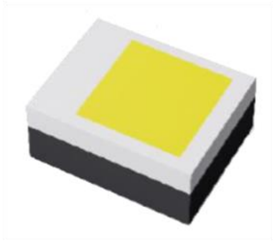
PRODUCT DATASHEET

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE DEVICES

- ▶ Ceramic High Power
- ▶ 1519 0.95t Series
- ▶ Cool White 6000K

Release Date: 28 October 2024 Version: A1.1

N0W67S44Z



1519 0.95t Series

1519 0.95t Series

RoHS Compliant
Pb
AUTOMOTIVE AEC-Q102

FEATURES:

- **Package:** Ceramic High Power SMT Package
- **Forward Current:** 1000~1500mA
- **Forward Voltage (typ.):** 3.5V
- **Luminous Flux (typ.):** 430lm@1A
- **Colour:** Cool White
- **Colour Temperature (CCT):** 5300~6700K
- **Viewing Angle:** 120°
- **ESD Level:** 8kV
- **Materials:**
  - – Resin: Silicon (Yellow Diffused)
- **Operating Temperature:** -40~+125°C
- **Storage Temperature:** -40~+125°C
- **Grouping Parameters:**
  - – Forward Voltage
  - – Luminous Flux
  - – CIE Chromaticity
- **Soldering Methods:** Reflow
- **MSL Level:** 2a according to J-STD020
- **Packing:** 8mm tape with max.2000pcs /reel, ø178mm (7’’)

APPLICATIONS:

- Automotive Exterior Lighting
- Decorative Lighting
- Portable Lighting
- Outdoor Lighting
- Commercial Lighting
- Indoor Lighting
- Industrial Lighting

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	1500	mA
Pulse Forward Current Duty 1/10, Pulse Width 10mS	I_{PF}	3000	mA
Power Dissipation	P_D	5700	mW
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10	µA
Junction Temperature	T_j	150	°C
Thermal Resistance Junction to Solder Point	R_{THJ-S}	5	°C/W
Electrostatic Discharge (HBM: ANSI/JEDEC JS-001 Class 3B)	ESD	8000	V
Operating Temperature	T_{OPR}	-40~+125	°C
Storage Temperature	T_{STG}	-40~+125	°C
Soldering Temperature	T_{SOL}	260	°C

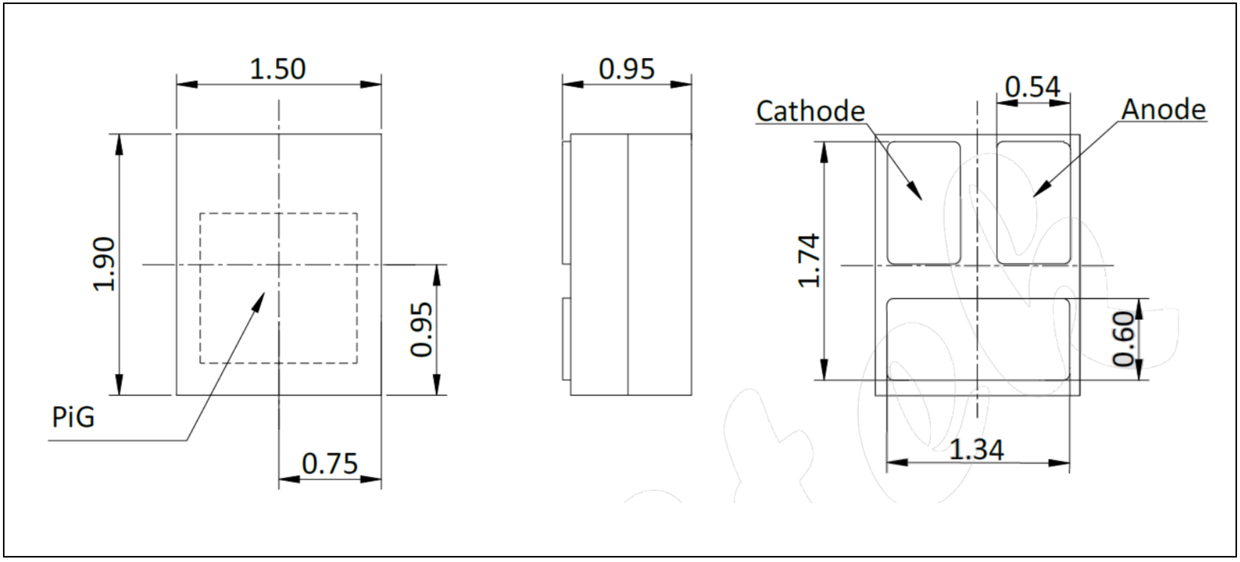
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	3.2	3.5	3.8	V	I_F=1A
Luminous Flux	Φ_V	390	430	480	lm	I_F=1A
Chromaticity Coordinates	X	---	0.3230	---	---	I_F=1A
	Y	---	0.3400	---		
Colour Temperature	CCT	---	6000	---	K	I_F=1A
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	I_F=1A

1. Luminous flux (Φ_V) ±7%, Forward Voltage (V_F) ±0.05V, Viewing angle($2\theta_{1/2}$) ±10°

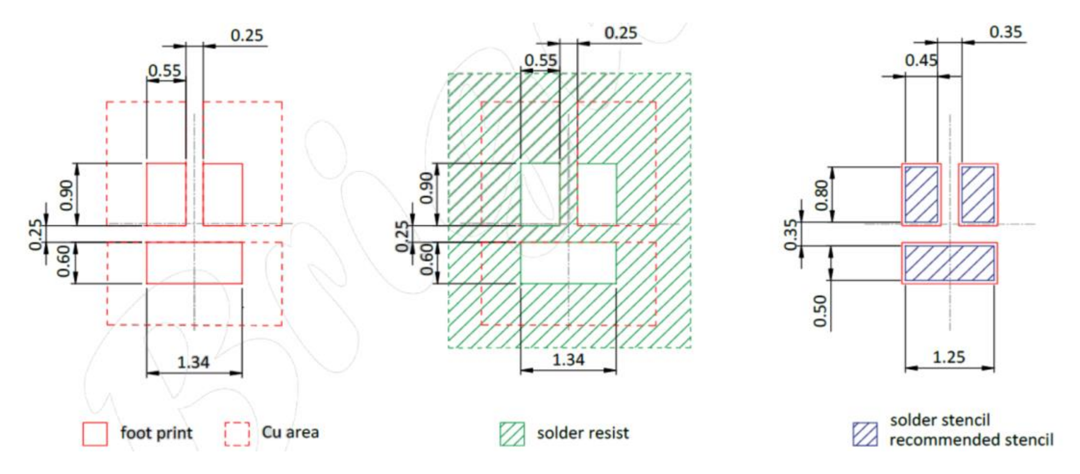
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance ±0.13mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



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

BINNING GROUPS:

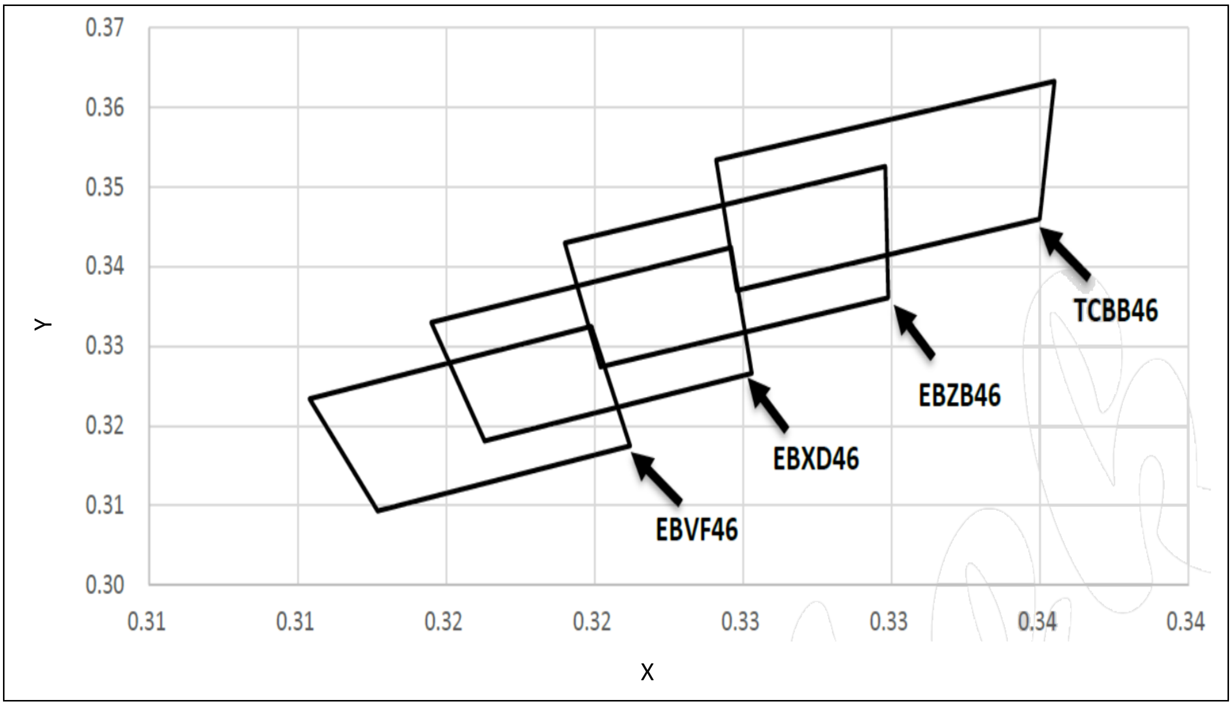
Forward Voltage Classifications (I_F = 1A):

Code	Min.	Max.	Unit
M	3.2	3.4	V
N	3.4	3.6	
P	3.6	3.8	

Luminous Flux Classifications (I_F = 1A):

Code	Min.	Max.	Unit
36-A	390	420	lm
37-A	420	450	
38-A	450	480	

CIE CHROMATICITY DIAGRAM:

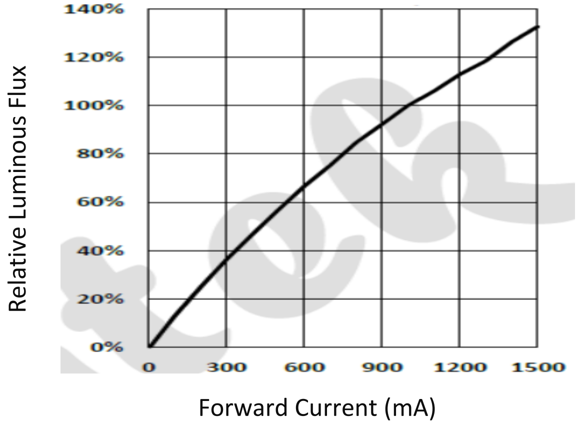


Chromaticity Coordinates Classifications (I_F = 1A):

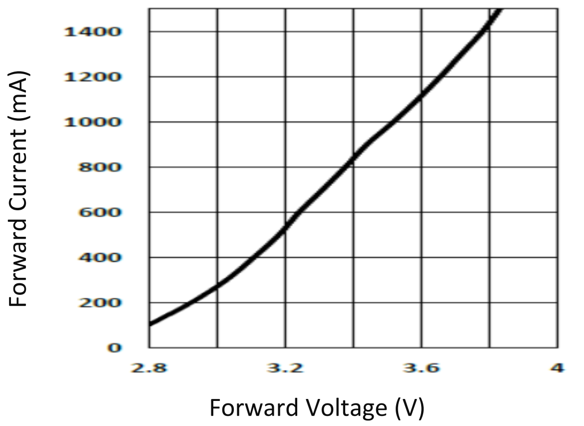
	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
EBVF46	0.3127	0.3093	0.3212	0.3175	0.3199	0.3325	0.3104	.03234
EBXD46	0.3163	0.3181	0.3253	0.3266	0.3246	0.3424	0.3145	0.3330
EBZB46	0.3202	0.3274	0.3299	0.3361	0.3298	0.3526	0.3190	0.3430
TCBB46	0.3248	0.3370	0.3350	0.3460	0.3355	0.3633	0.3241	0.3534

ELECTRO-OPTICAL CHARACTERISTICS:

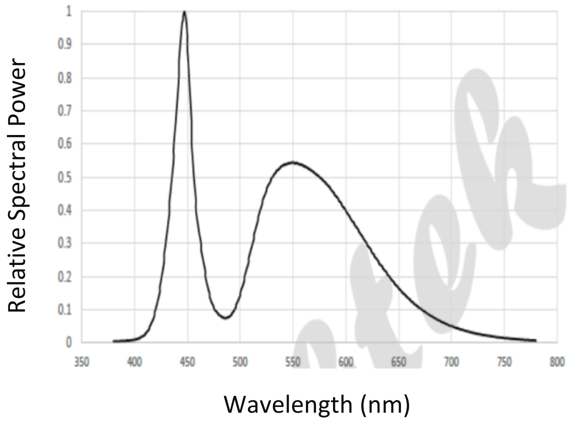
Relative Luminous Flux v.s. Forward Current



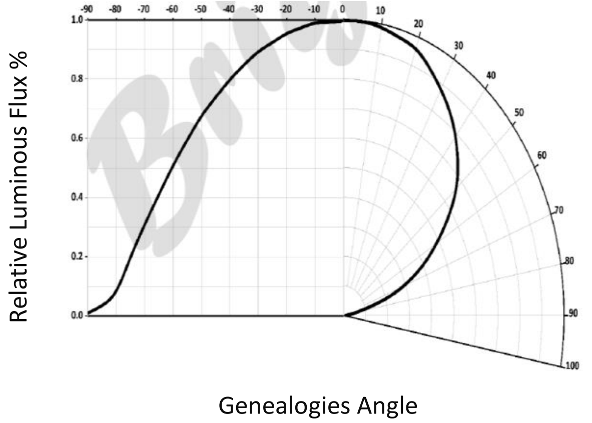
Forward Current v.s. Forward Voltage



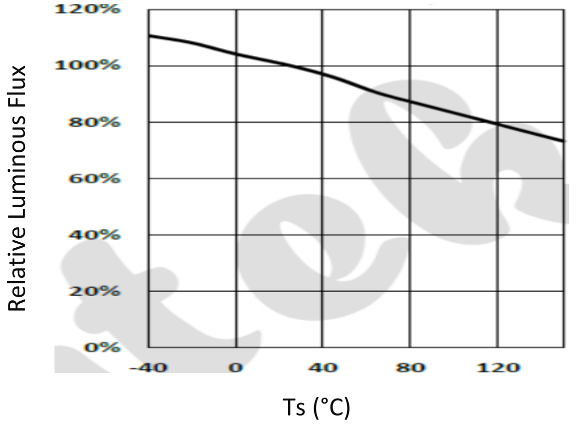
Relative Spectral Power v.s. Wavelength



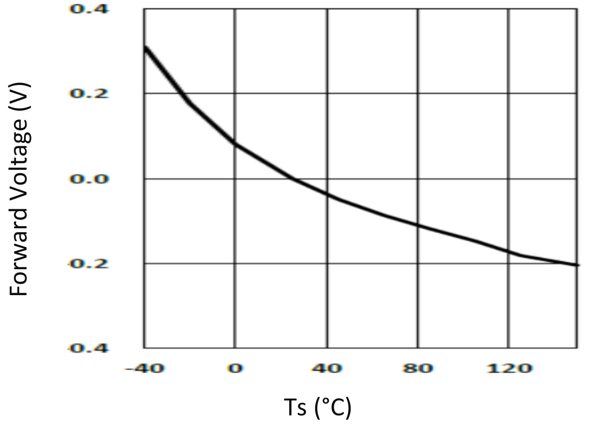
Directive Radiation



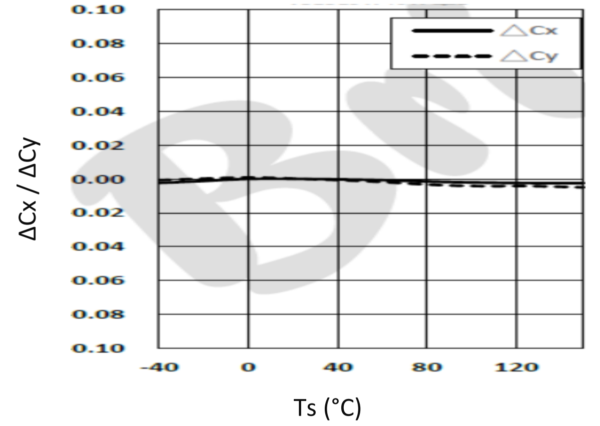
Relative Luminous Flux v.s. Solder Temperature



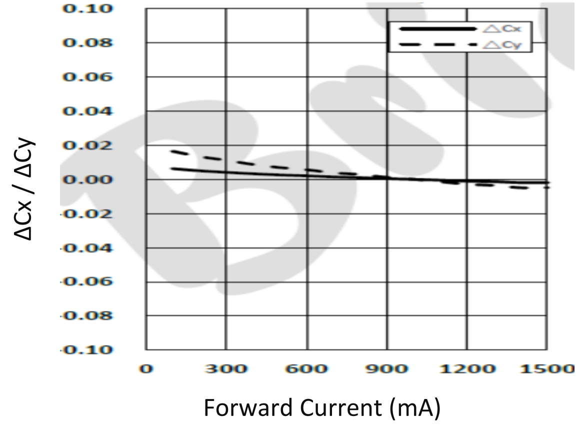
Forward Voltage v.s. Solder Temperature



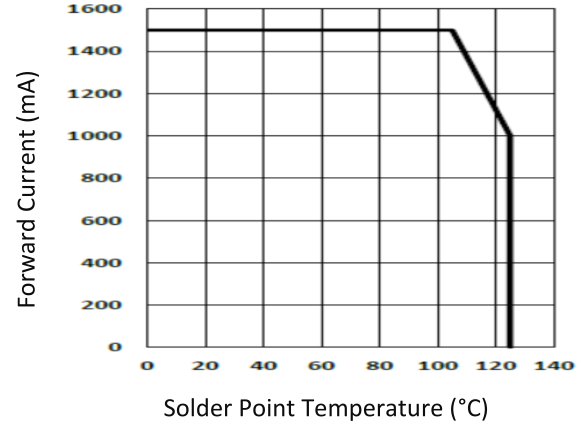
Chromaticity Coordinate Shift v.s. Solder Temp.

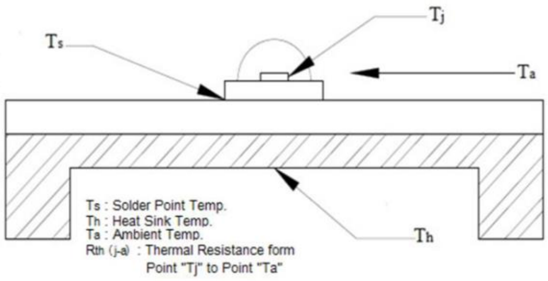


Chromaticity Coordinate Shift v.s. Current



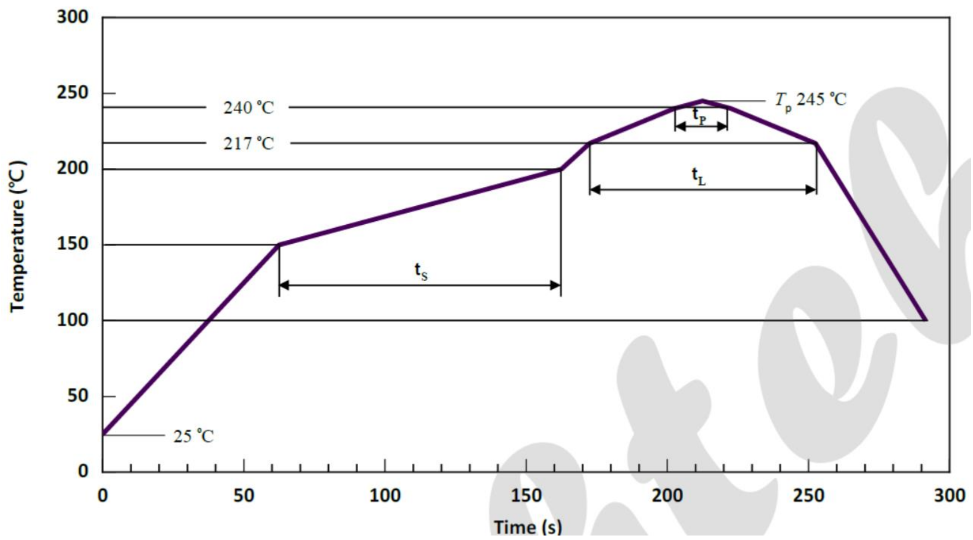
Forward Current Derating Curve





RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:



Profile Feature	Symbol	Pb-Free (SnAgCu) Assembly			Unit
		Minimum	Recommendation	Maximum	
Ramp-up rate to preheat 25 °C to 150 °C			2	3	K/s
Time t_S T_{Smin} to T_{Smax}	t_S	60	100	120	s
Ramp-up rate to peak T_{Smax} to T_P			2	3	K/s
Liquidus temperature	T_L		217		°C
Time above liquidus temperature	t_L		80	100	s
Peak temperature	T_P		245	260	°C
Time within 5 °C of the specified peak temperature T_P - 5 K	T_P			10	s
Ramp-down rate T_P to 100 °C			3	4	K/s
Time 25 °C to T_P				480	s

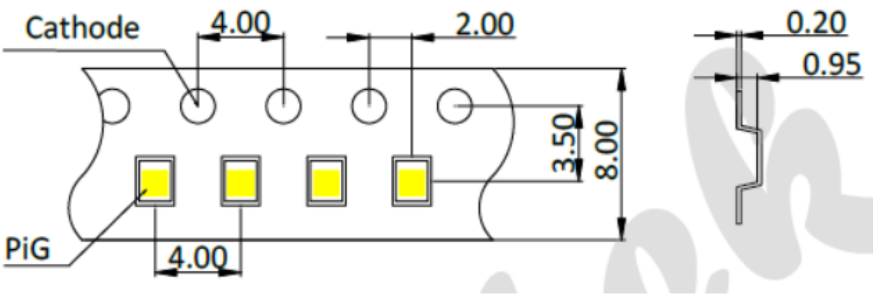
Note:

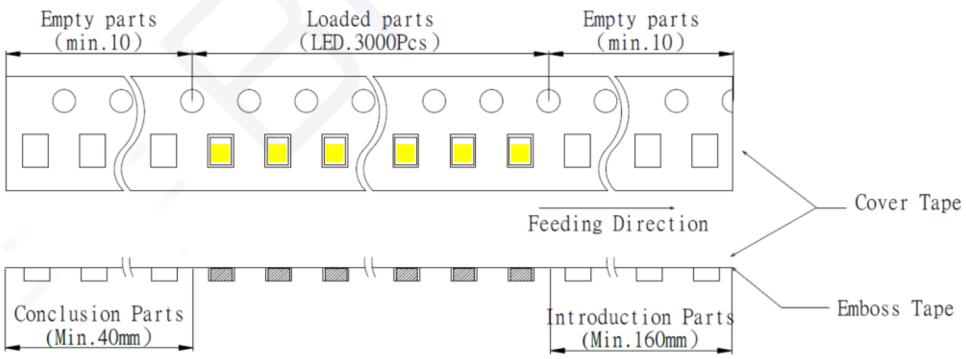
1. Maximum reflow soldering: 2 times.
2. The recommended reflow temperature is 240°C. The maximum soldering temperature should be limited to 260°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

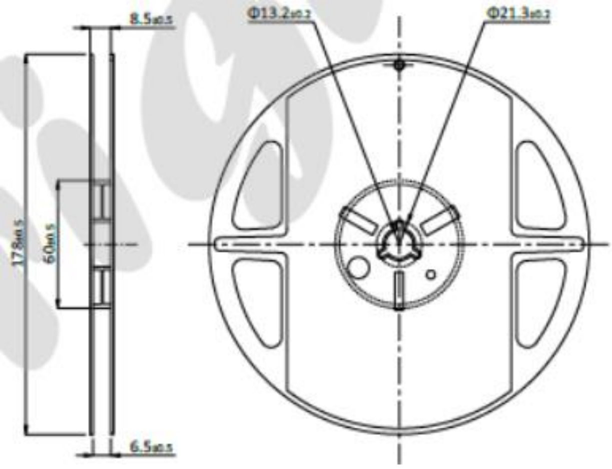
PACKING SPECIFICATION:

Reel Dimension:

Max.2000pcs/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 4 weeks. Otherwise, they should be kept in a damp-proof box with descanting agent <10% R.H. and apply baking before use.

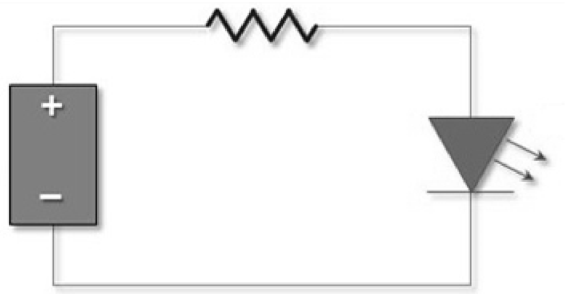
Baking:

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	20/05/2024	Datasheet set-up.
A1.1	28/10/2024	Update product picture.