BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED !

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

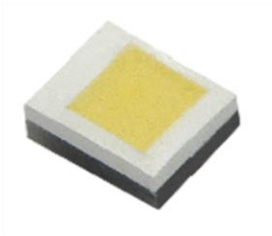
PRODUCT DATASHEET

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

- Ceramic High Power
- 1519 0.90t Series
- Cool White 6000K

Release Date: 28 October 2024 Version: A1.1

N0W67S43Z



1519 0.90t Series

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RoHS Compliant

AUTOMOTIVE AEC-Q102

FEATURES:

- **Package:** Ceramic High Power SMT Package
- **Forward Current:** 350~500mA
- **Forward Voltage (typ.):** 3.2V
- **Luminous Flux (typ.):** 120lm@350mA
- **Colour:** Cool White
- **Colour Temperature (CCT):** 5200~6700K
- **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:** 3 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 (T_a=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	500	mA
Pulse Forward Current Duty 1/10, Pulse Width 10mS	I_{PF}	1000	mA
Power Dissipation	P_D	1800	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}	10	°C/W
Thermal Resistance Junction to Ambient Point	R_{THJ-A}	15	°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

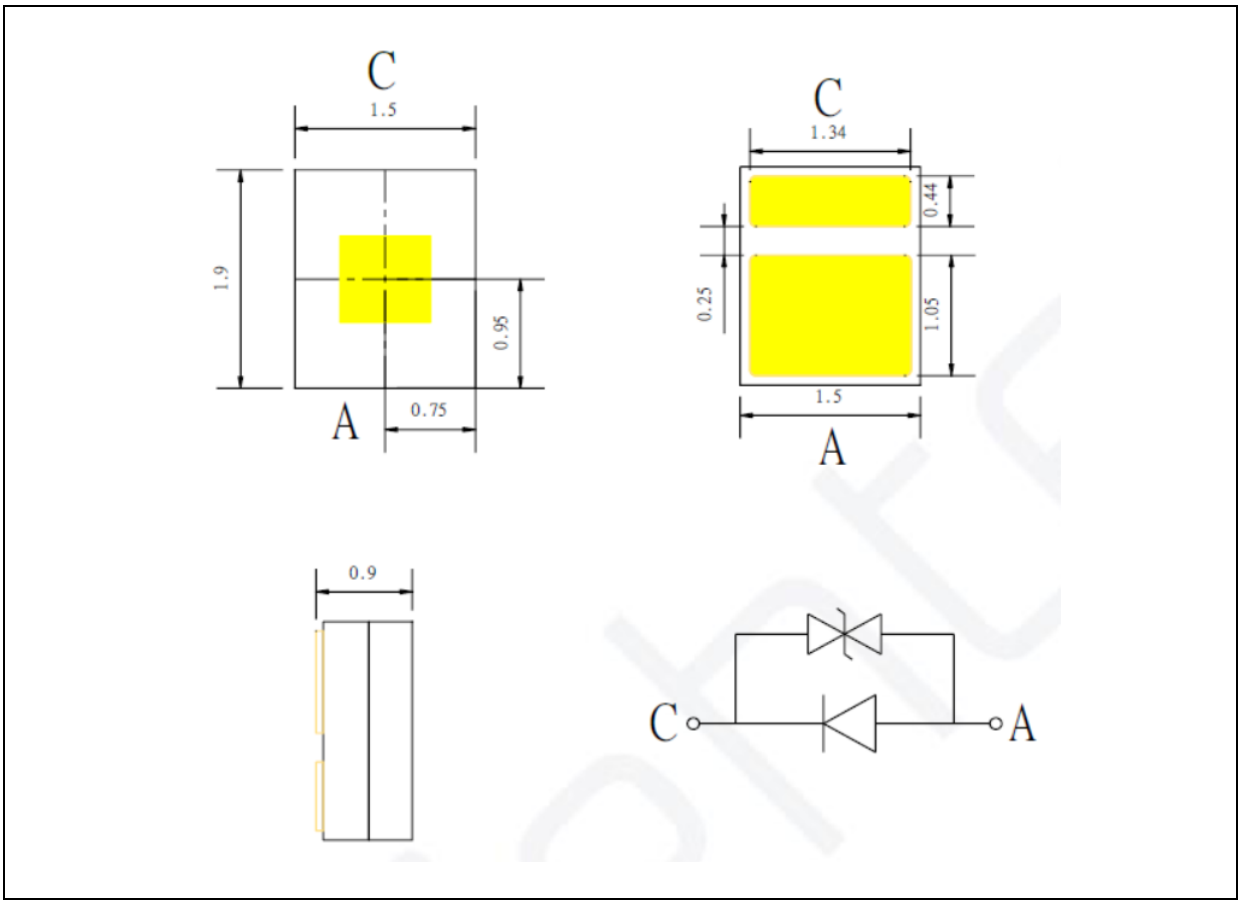
Electrical & Optical Characteristics (T_a=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	2.8	3.2	3.6	V	I_F=350mA
Luminous Flux	Φ_V	100	120	150	lm	I_F=350mA
Chromaticity Coordinates	X	---	0.3230	---	---	I_F=350mA
	Y	---	0.3400	---		
Colour Temperature	CCT	---	6000	---	K	I_F=350mA
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	I_F=350mA

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

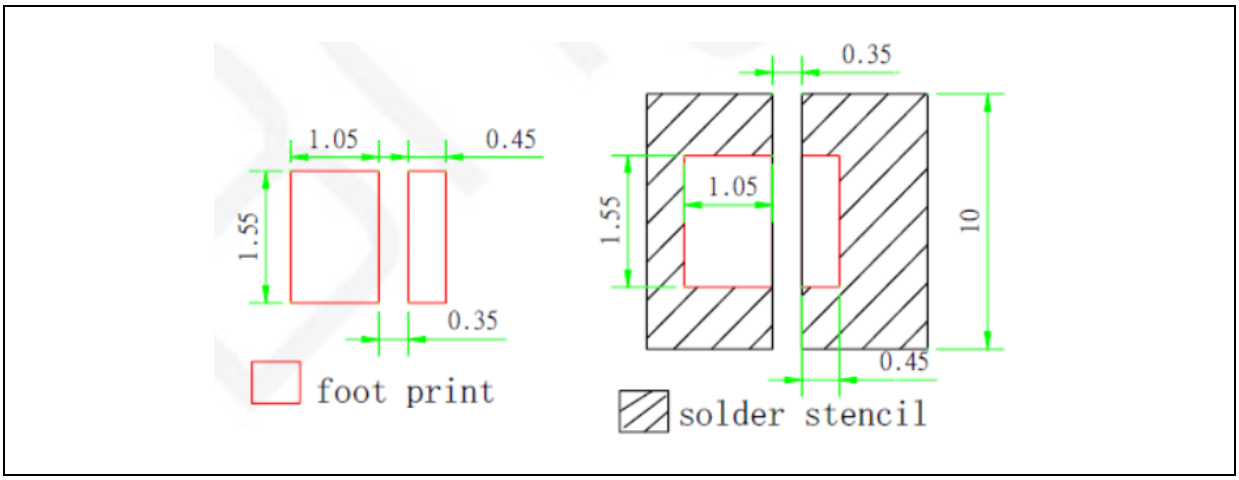
OUTLINE DIMENSION:

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:

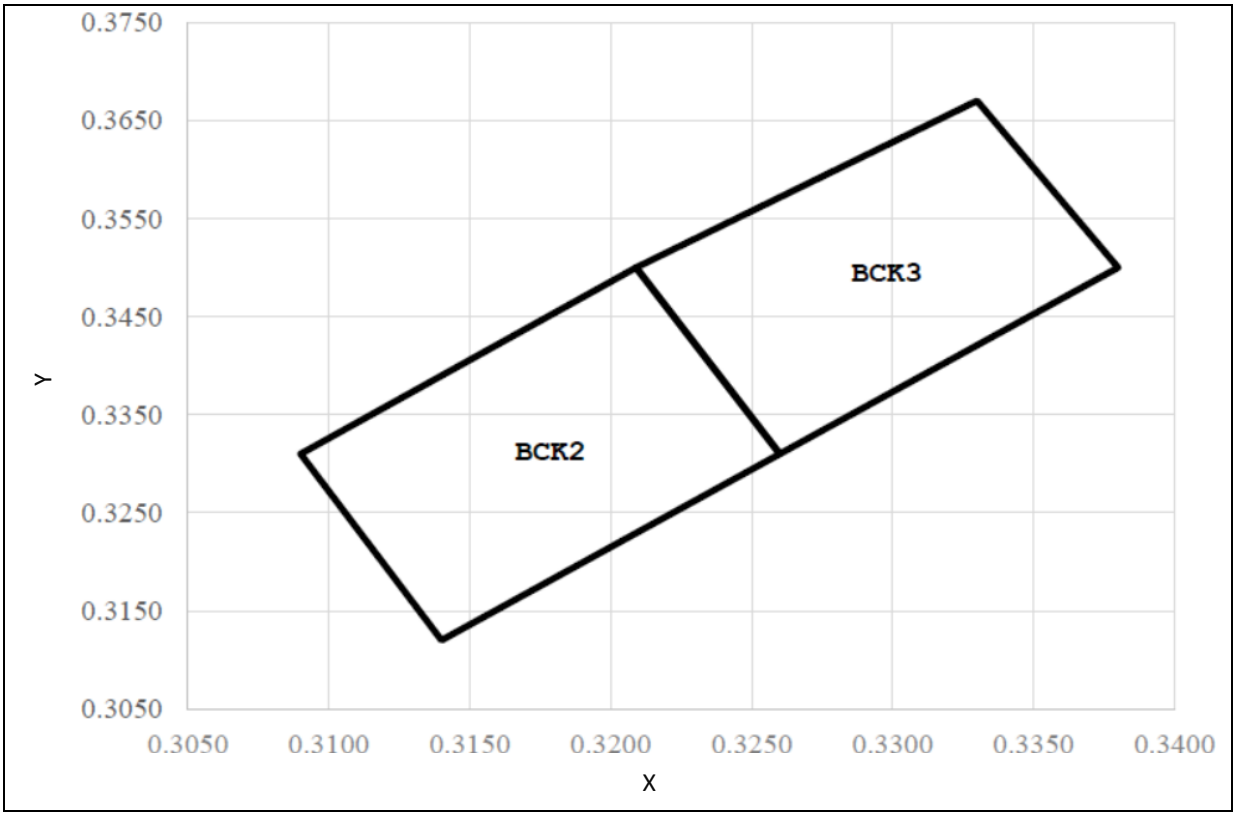
Forward Voltage Classifications (I_F = 350mA):

Code	Min.	Max.	Unit
K	2.8	3.0	V
L	3.0	3.2	
M	3.2	3.4	
N	3.4	3.6	

Luminous Flux Classifications (I_F = 350mA):

Code	Min.	Max.	Unit
26	100	115	lm
27	115	130	
28	130	150	

CIE CHROMATICITY DIAGRAM:

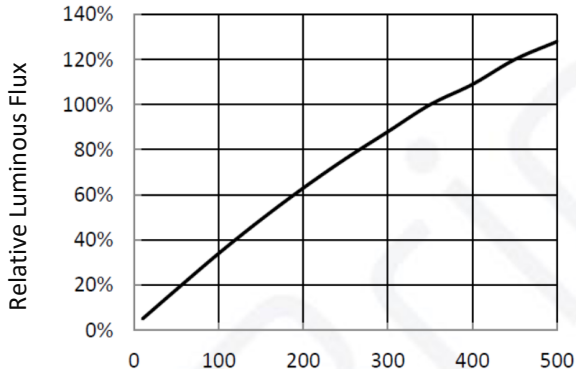


Chromaticity Coordinates Classifications (I_F = 350mA):

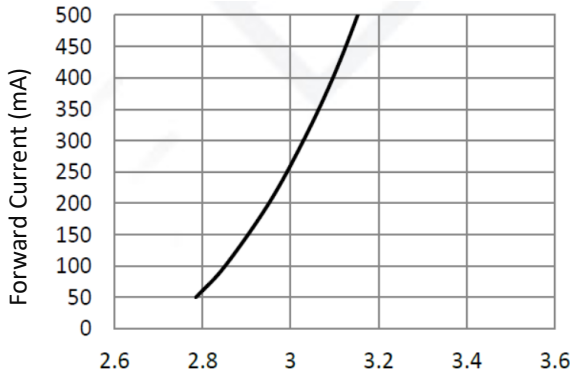
	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
BCK2	0.3090	0.3310	0.3140	0.3120	0.3260	0.3310	0.3209	0.3500
BCK3	0.3209	0.3500	0.3260	0.3310	0.3380	0.3500	0.3330	0.3670

ELECTRO-OPTICAL CHARACTERISTICS:

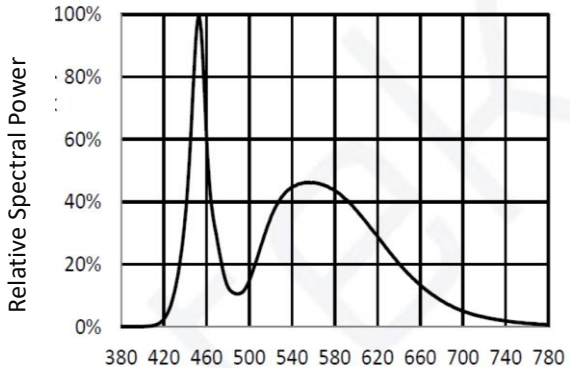
Relative Luminous Flux v.s. Forward Current



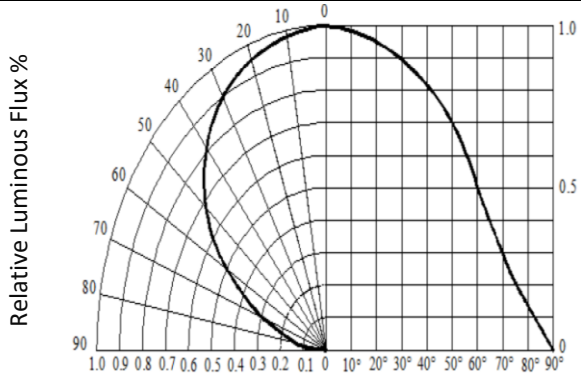
Forward Current v.s. Forward Voltage



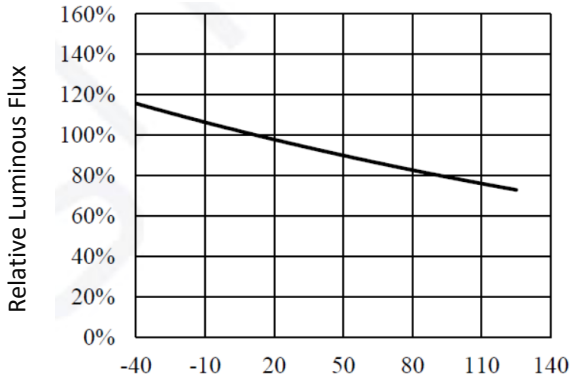
Relative Spectral Power v.s. Wavelength



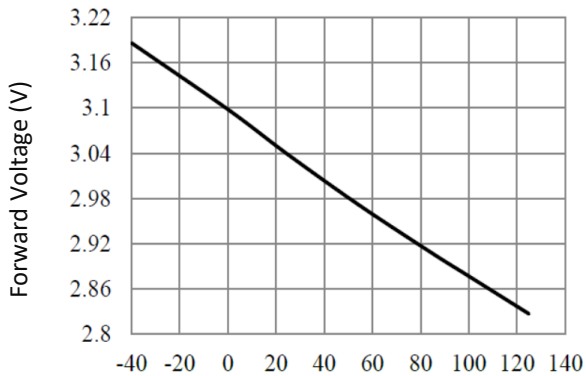
Directive Radiation



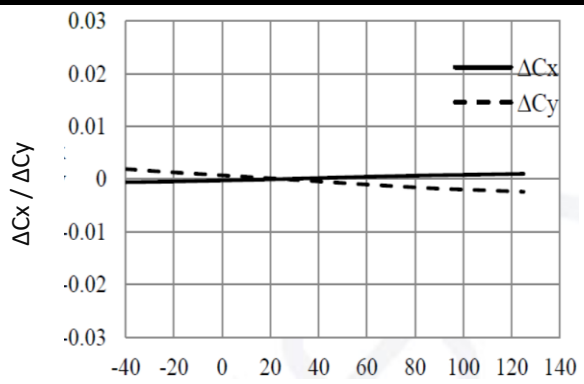
Relative Luminous Flux v.s. Solder Temperature



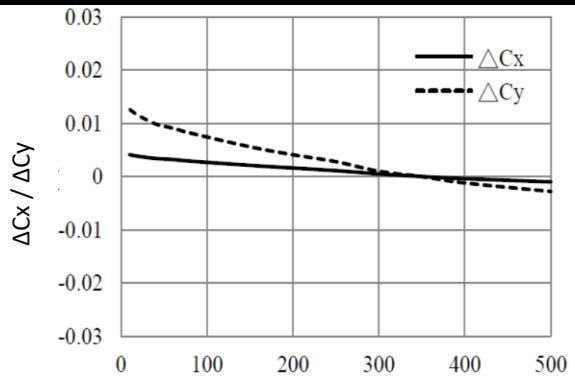
Forward Voltage v.s. Solder Temperature



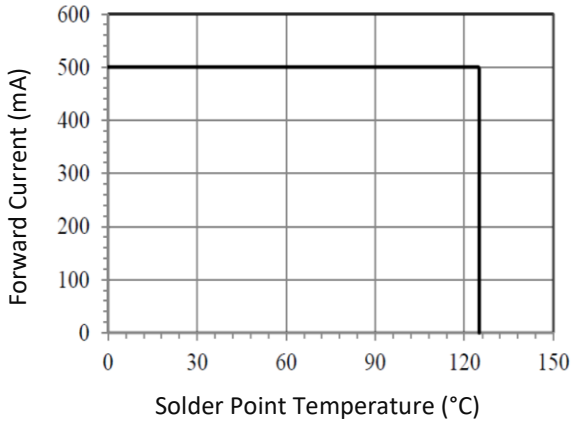
Chromaticity Coordinate Shift v.s. Solder Temp.

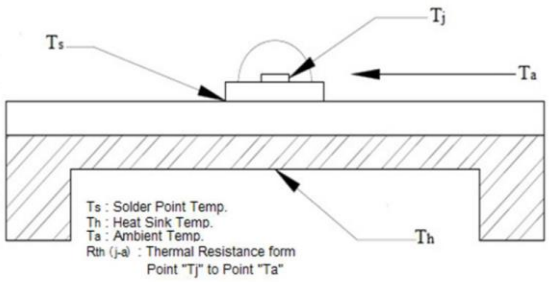


Chromaticity Coordinate Shift v.s. Current



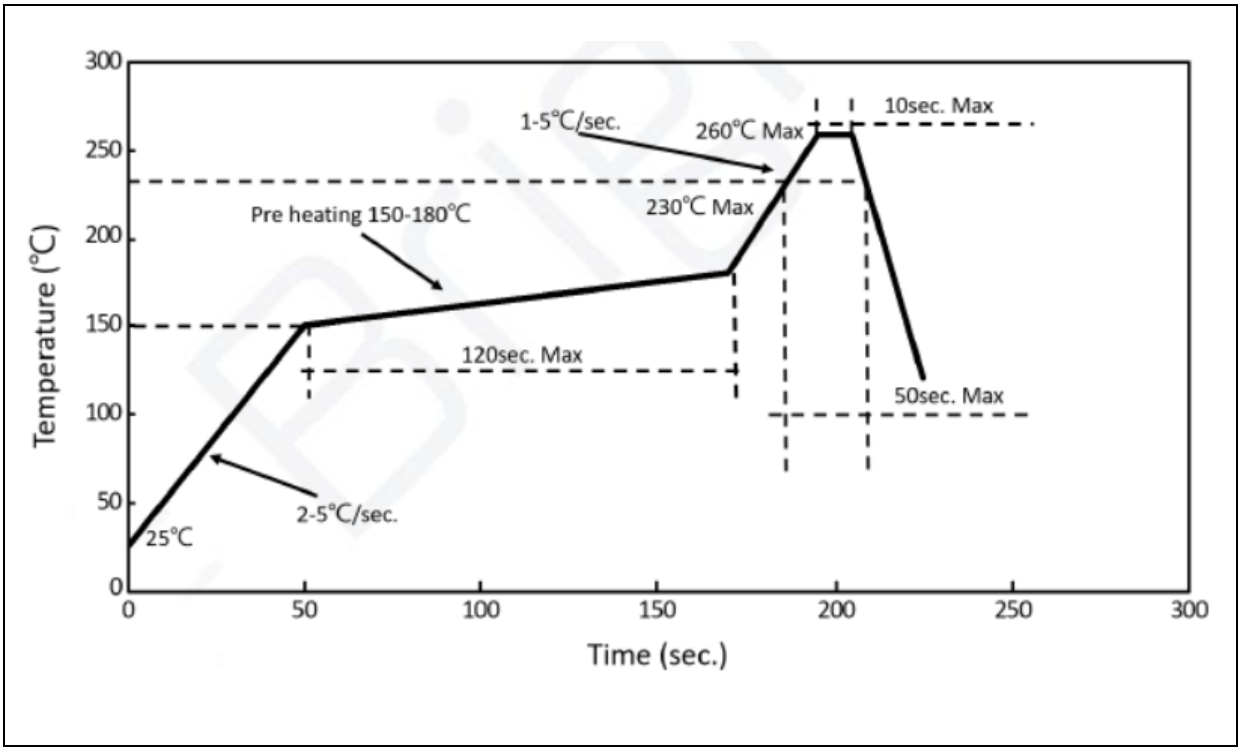
Forward Current Derating Curve





RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:



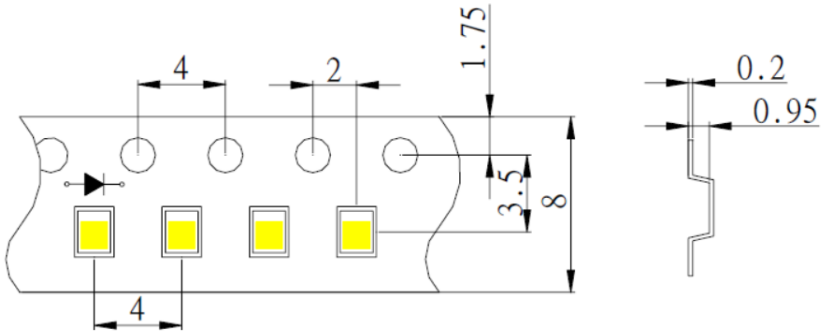
Note:

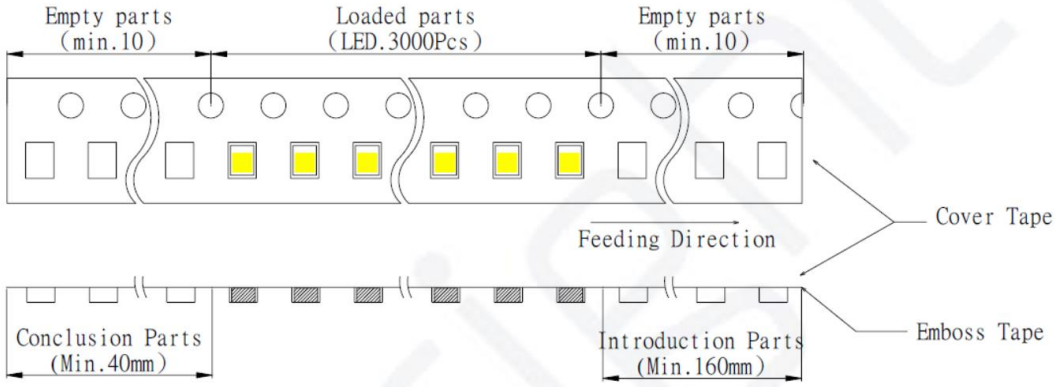
1. Maximum reflow soldering: 3 times.
2. The recommended reflow temperature is 240°C. The maximum soldering temperature should be limited to 260°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

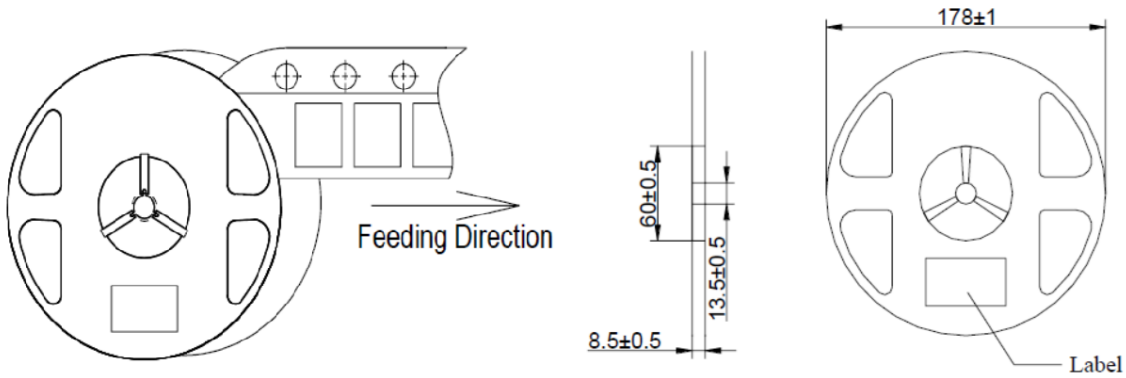
PACKING SPECIFICATION:

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 1 week. Otherwise, they should be kept in a damp-proof box with descanting agent <10% R.H. and apply baking before use.

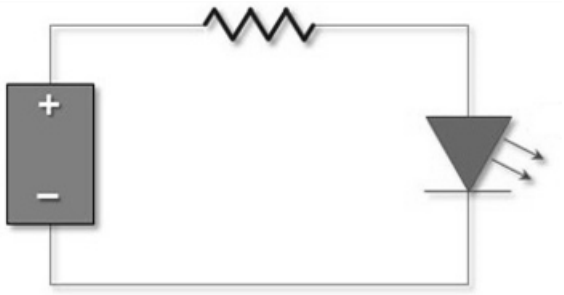
Baking:

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 6hrs 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	30/05/2022	Datasheet set-up.
A1.1	28/10/2024	Update product picture.