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

- ► EMC 4-PIN SMD
- ► 2034 0.52t
- ► Cool White (5600K) / Warm White (3200K)

Release Date: 05 April 2025 Version: A1.1

N0D63S75 (CRI/TLCI 95)

2034 EMC Series

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RoHS Compliant

FEATURES:

- **Package:** Top View Dual Colour EMC Package
- **Forward Current:** 150/150mA* (*in order of Cool/Warm White)
- **Forward Voltage (typ.):** 3.2/3.2V
- **Luminous Flux (typ.):** 45/41lm@150mA
- **Colour:** Cool White/Warm White
- **Colour Temperature (CCT):** 5600/3200K
- **Viewing Angle:** 120°
- **Materials:**
  - Die: InGaN/InGaN
  - Resin: Silicon (Yellow Diffused)
  - Package: EMC
- **Operating Temperature:** -40~+105°C
- **Storage Temperature:** -40~+85°C
- **Electrostatics Discharge (HBM):** 1000V
- **Grouping Parameters:**
  - Forward Voltage
  - Luminous Flux
  - CIE Chromaticity
- **Soldering Methods:** Reflow Soldering
- **MSL Level:** according to J-STD020 MSL 3
- **Packing:** 8mm tape with max. 2000/reel, ø178mm (7'')

APPLICATIONS:

- General Lighting
- Portable Lighting
- Commercial Lighting
- Indoor Lighting
- Signalling
- Situation Lighting
- Decorative Lighting

CHARACTERISTICS:

Absolute Maximum Characteristics (T_a=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	150/150*	mA
Pulse Forward Current (Duty 1/10, width≤100μS)	I_{PF}	225/225	mA
Reverse Voltage	V_R	5	V
Reverse Current @V_R=5V	I_R	10	μA
Power Dissipation	P_D	525	mW
Junction Temperature	T_j	120	°C
Electrostatic Discharge (HBM)	ESD	1000	V
Thermal Resistance	$R_{th(j-sp)}$	38	°C/W
Operating Temperature	T_{OPR}	-40~+105	°C
Storage Temperature	T_{STG}	-40~+85	°C
Soldering Temperature	T_{SOL}	230/260 for 10S	°C

*in order of Cool White/Warm White

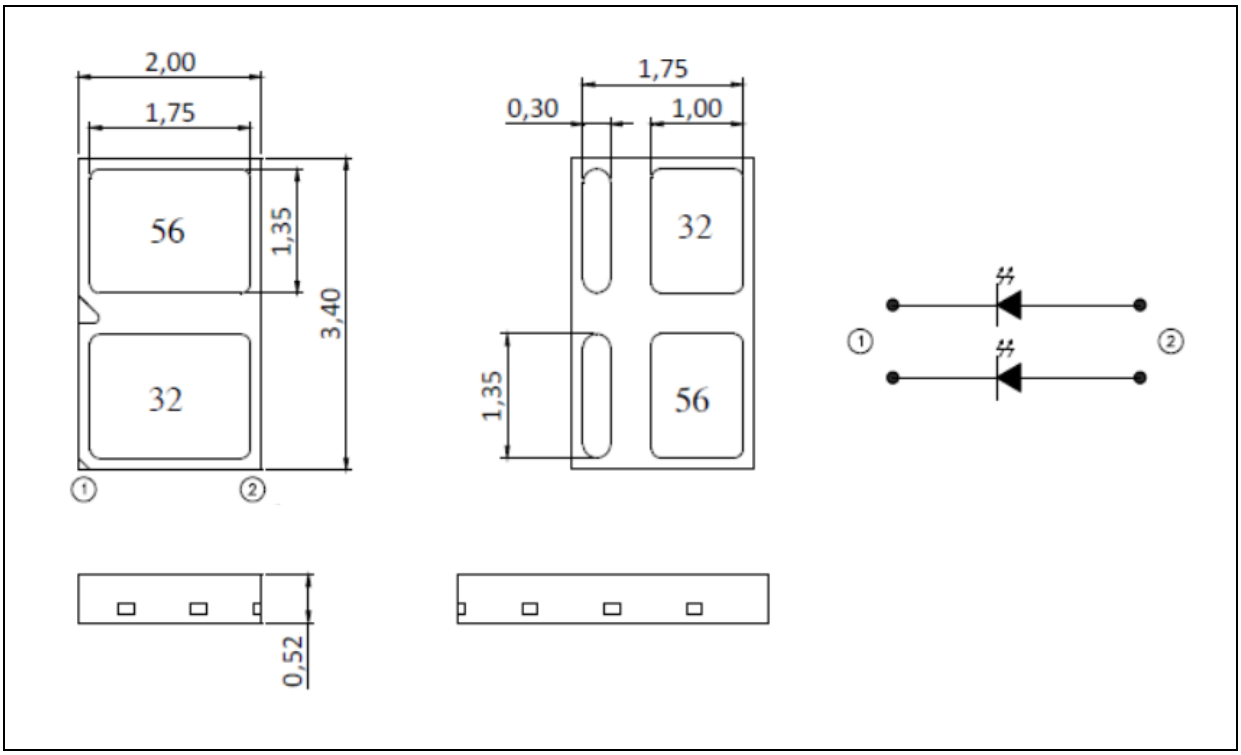
Electrical & Optical Characteristics (T_a=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	2.9/2.9*	---/---	3.5/3.5	V	I_F=150mA
Luminous Flux	Φ_V	40/35	45/41	---/---	lm	I_F=150mA
Chromaticity Coordinates	X	---	0.3287/0.4263	---	---	I_F=150mA
	Y	---	0.3417/0.4003	---		
Colour Temperature	CCT	---/---	5600/3200	---/---	K	I_F=150mA
Colour Rendering Index	CIR	95/95	96/97	---/---	---	I_F=150mA
Television Lighting Consistency Index	TLCI	95/95	---/---	---/---	---	I_F=150mA
Viewing Angle	$2\theta_{1/2}$	---	120/120	---	deg	I_F=150mA

1. Luminous Flux (Φ_V) ±7%, Forward Voltage (V_F) ±0.1V,
2. *in order of Cool White/Warm White

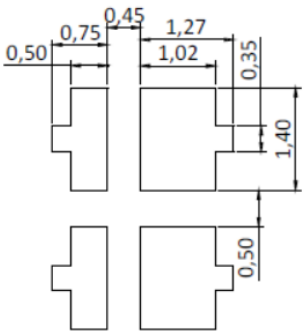
OUTLINE DIMENSION:

Package Dimension:

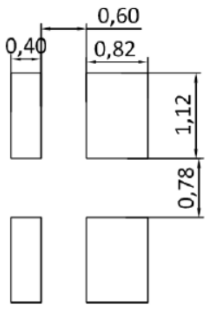


1. All dimensions are in millimetre (mm).
2. Tolerance ±0.2mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



Recommended Soldering Pad Pattern



Recommended Metal Stencil Aperture

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

BINNING GROUPS:

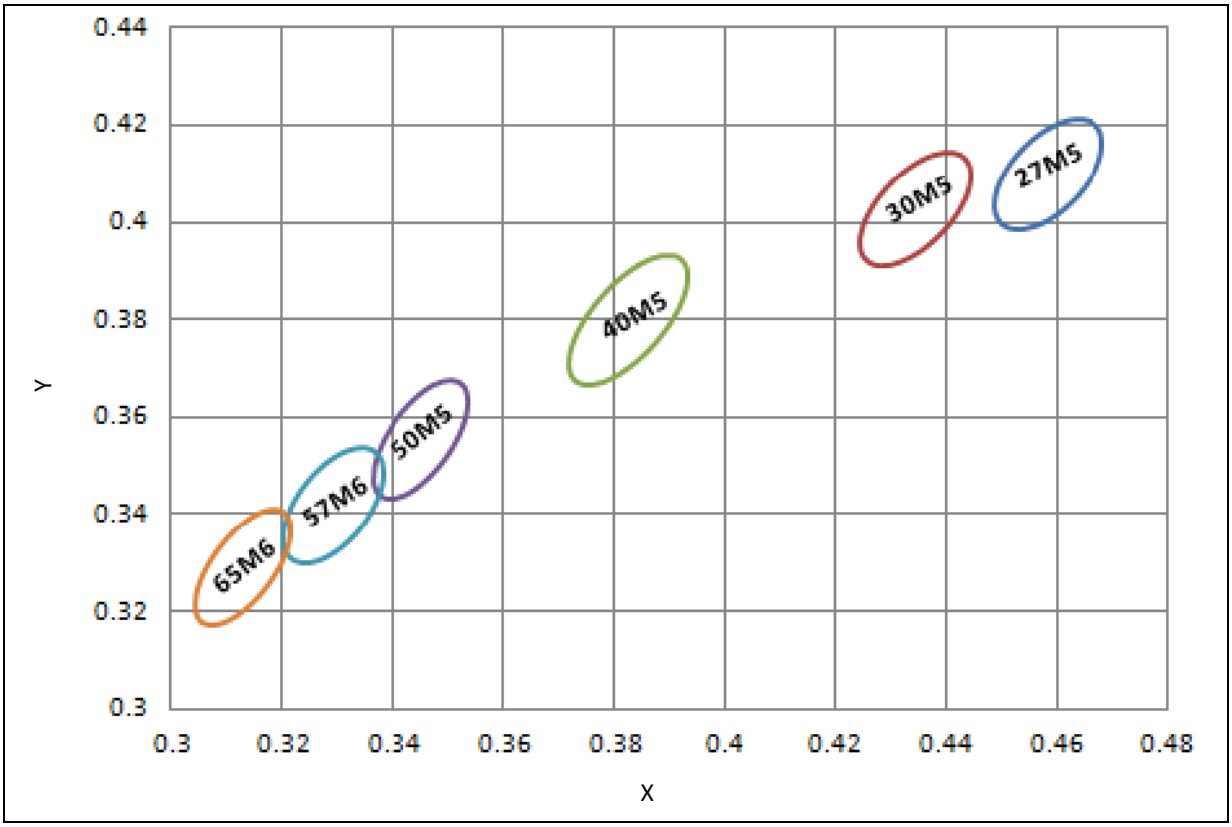
Forward Voltage Classifications (I_F = 150mA):

Code		Min.	Max.	Unit
CW / WW	C1	2.9	3.0	V
	D1	3.0	3.1	
	E1	3.1	3.2	
	F1	3.2	3.3	
	G1	3.3	3.4	
	H1	3.4	3.5	

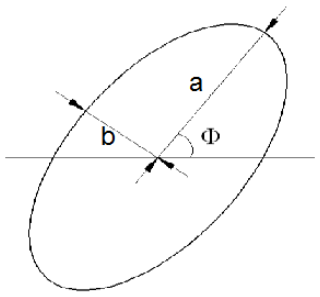
Luminous Flux Classifications (I_F = 150mA):

Code		Min.	Max.	Unit
CW	1M	35	40	lm
	1N	40	45	
	1P	45	50	
WW	1N	40	45	lm
	1P	45	50	
	1Q	50	55	

CIE CHROMATICITY DIAGRAM:



Chromaticity Coordinates Classifications (I_F = 150mA):

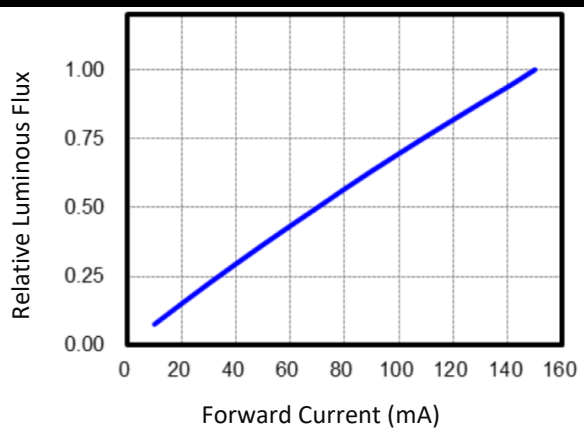


Code	Centre		Radius		Angle
	X	Y	a	b	Φ
56C5	0.3287	0.3417	0.011180	0.005500	58.35
32C5	0.4263	0.4003	0.014675	0.006850	53.43

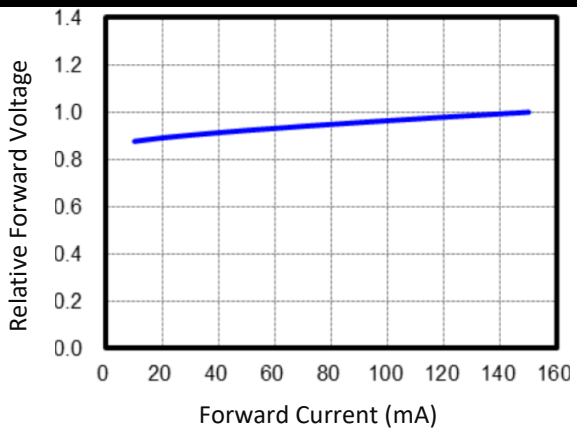
- Tolerance ±0.005.

ELECTRO-OPTICAL CHARACTERISTICS:

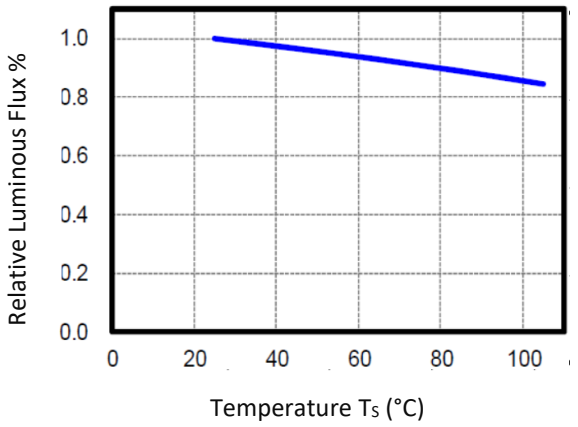
Relative Luminous Flux v.s. Forward Current



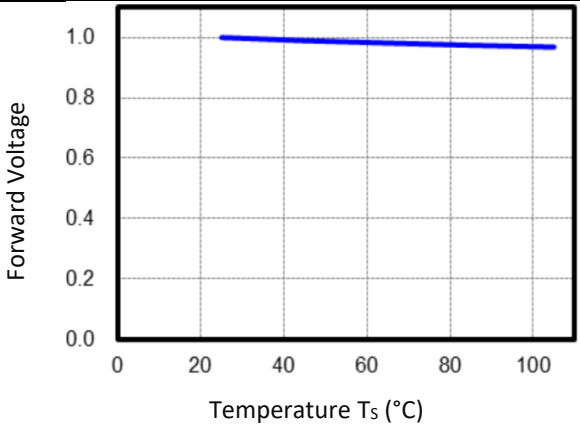
Forward Current v.s. Forward Voltage



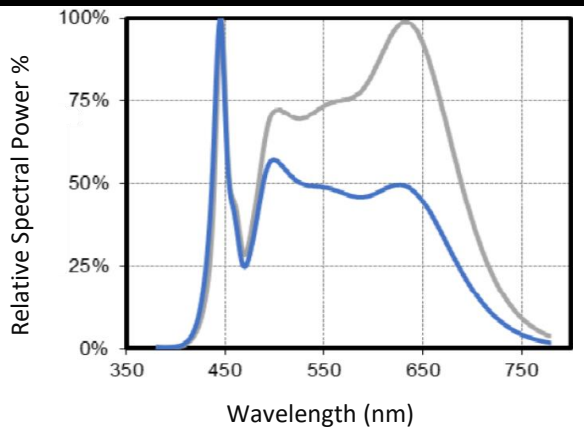
Relative Luminous Flux v.s. Temperature



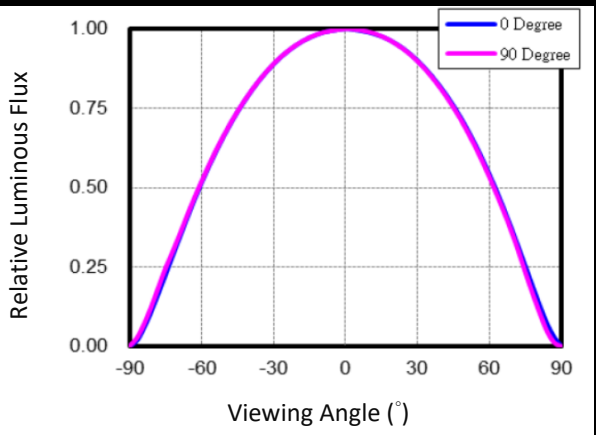
Forward Voltage v.s. Temperature



Relative Spectral Power v.s. Wavelength

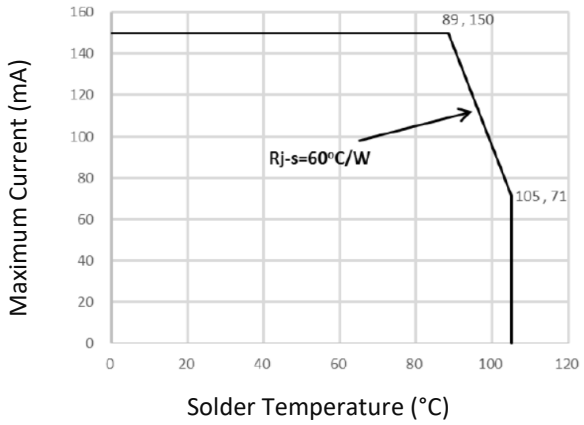


Directive Radiation



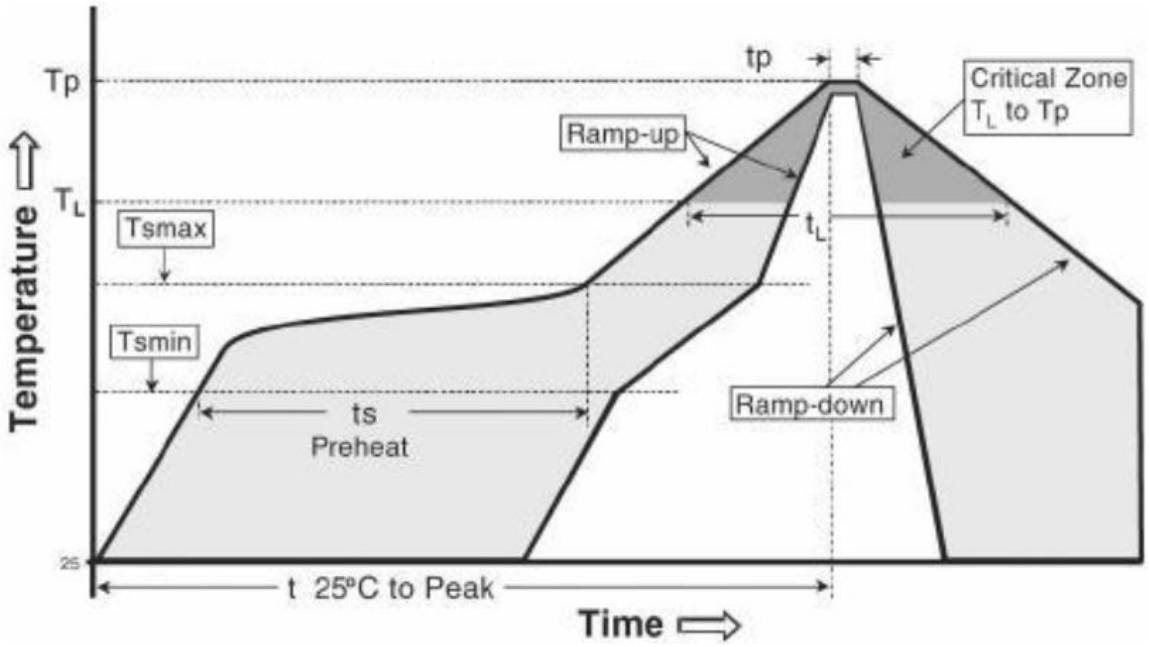
ELECTRO-OPTICAL CHARACTERISTICS:

Forward Current Derating Curve



RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:



Temperature Min. (T_{smin})	150°C
Temperature Max. (T_{smax})	200°C
Period from T_{smin} to T_{smax}	60-120 seconds
Ramp-up Rate (T_L to T_P)	Max. 3°C/second
Liquidous Temperature (T_L)	217°C
Time Maintained above T_L	60-150 seconds
Peak Package Temperature (T_P)	Max. 260°C
Time within 5°C of the Specified Classification Temperature T_C	Max. 30 seconds
Ramp-down Rate (T_P to T_L)	Max. 6°C/second
Time from 25°C to Peak Temperature	Max. 8 mins

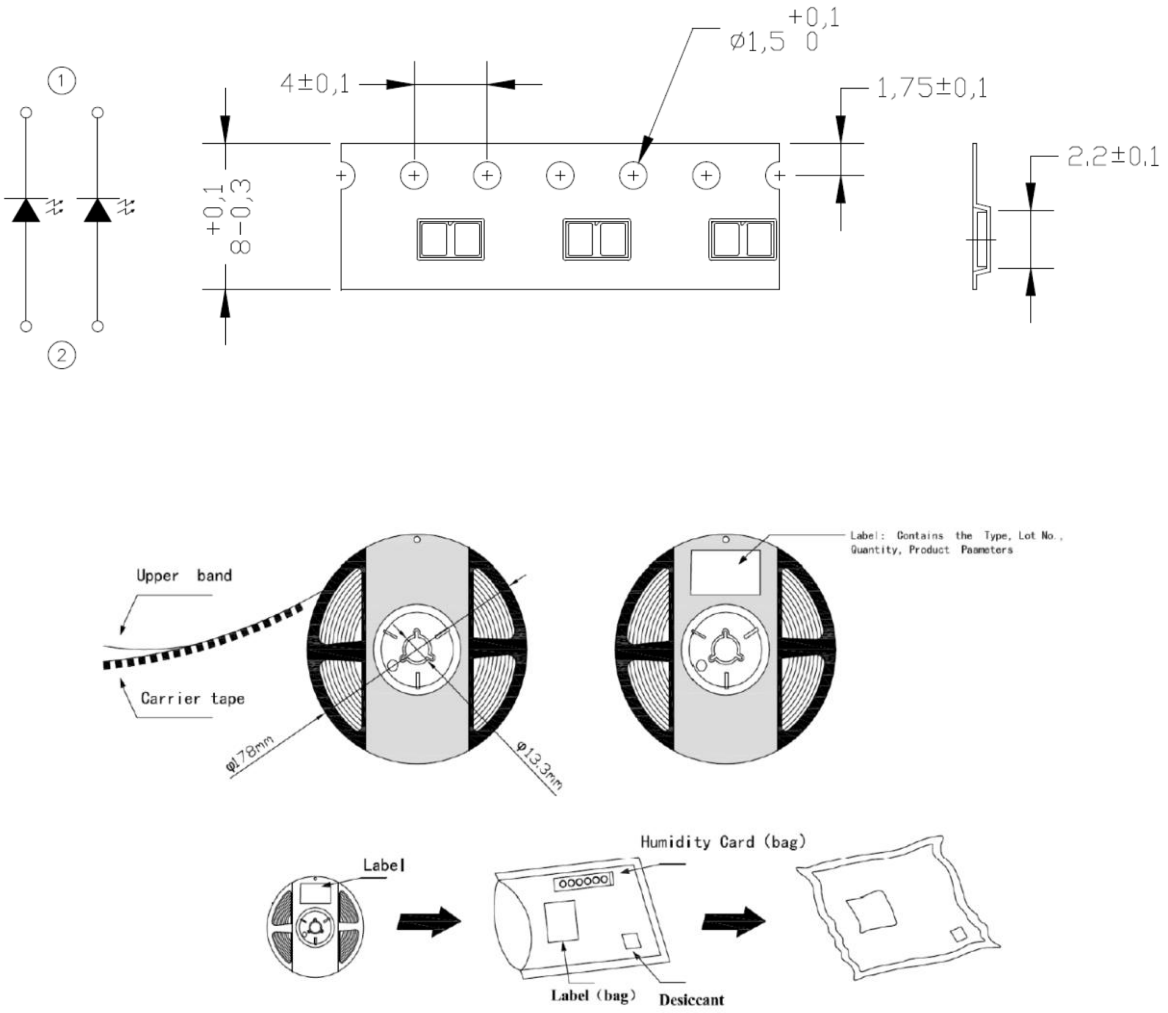
Note:

1. Maximum reflow soldering: 2 times.
2. Before, during, and after soldering, should not apply stress on the components and PCB board.
3. Recommended soldering temperature: 230°C. The maximum soldering temperature should be limited to 260°C for max. 10seconds.

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

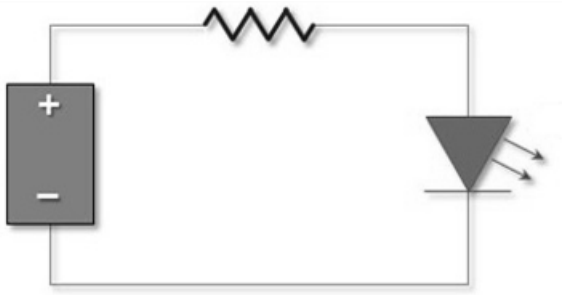
Baking:

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:

- 65±5°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	28/11/2022	Datasheet set-up.
A1.1	05/04/2025	New datasheet format.