



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

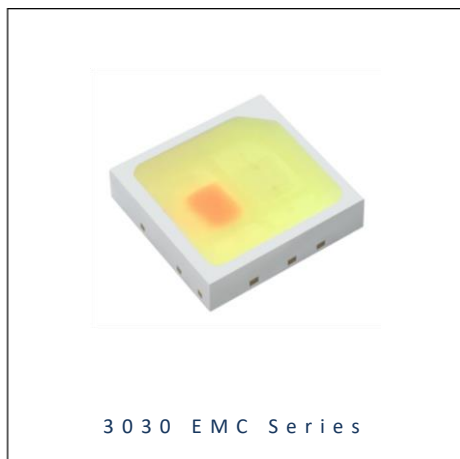


- ▶ EMC 4-PINs SMD
- ▶ 3030 0.66t
- ▶ Cool White 5700K / Warm White 2700K

NOD63S76



Release Date: 17 December 2024 Version: A1.1



3030 EMC Series

3030 EMC Series

RoHS
Compliant



FEATURES:

- **Package:** Top View EMC Package with Duo Whites
- **Forward Current:** 300/300mA *
- **Forward Voltage (typ.):** 3.4/3.4V
- **Luminous Flux (typ.):** 110/90lm@300mA
- **Colour:** Cool White/Warm White
- **Colour Temperature (typ.):** 5700/2700K
- **Viewing Angle:** 120°
- **Materials:**
 - Die: InGaN/InGaN
 - Resin: Silicon (Yellow Diffused)
- **Operating Temperature:** -40~+105°C
- **Storage Temperature:** -40~+105°C
- **Grouping Parameters:**
 - Forward Voltage
 - Luminous Flux
 - CIE Chromaticity
- **Soldering Methods:** Reflow Soldering
- **MSL Level:** MSL3 according to J-STD020
- **Packing:** 8mm tape with max.5000/reel, ø178mm (7")

* in order of Cool White/Warm White

APPLICATIONS:

- General Lighting
- Architectural Lighting
- Portable Lighting
- Commercial Lighting
- Indoor Lighting
- Downlight & Spotlight

CHARACTERISTICS:

Absolute Maximum Characteristics ($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	350	mA
Pulse Forward Current (Duty 1/10, width $\leq 100\mu\text{s}$)	I_{PF}	420	mA
Power Dissipation	P_D	1260	mW
Reverse Voltage	V_R	5	V
Reverse Current @10V	I_R	10	μA
Junction Temperature	T_j	120	$^{\circ}\text{C}$
Thermal Resistance (Junction to Solder Point)	R_{THJ-SP}	29	$^{\circ}\text{C/W}$
Operating Temperature	T_{OPR}	$-40\sim+105$	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	$-40\sim+105$	$^{\circ}\text{C}$
Soldering Temperature	T_{SOL}	230/260 for 10S	$^{\circ}\text{C}$
Colour Rendering Index	CRI	min.90; typ.95	---

1. R_{THJ-SP} is the thermal resistance from LED junction to solder point on MCPCB with electrical power.

Electrical & Optical Characteristics ($T_a=25^{\circ}\text{C}$)

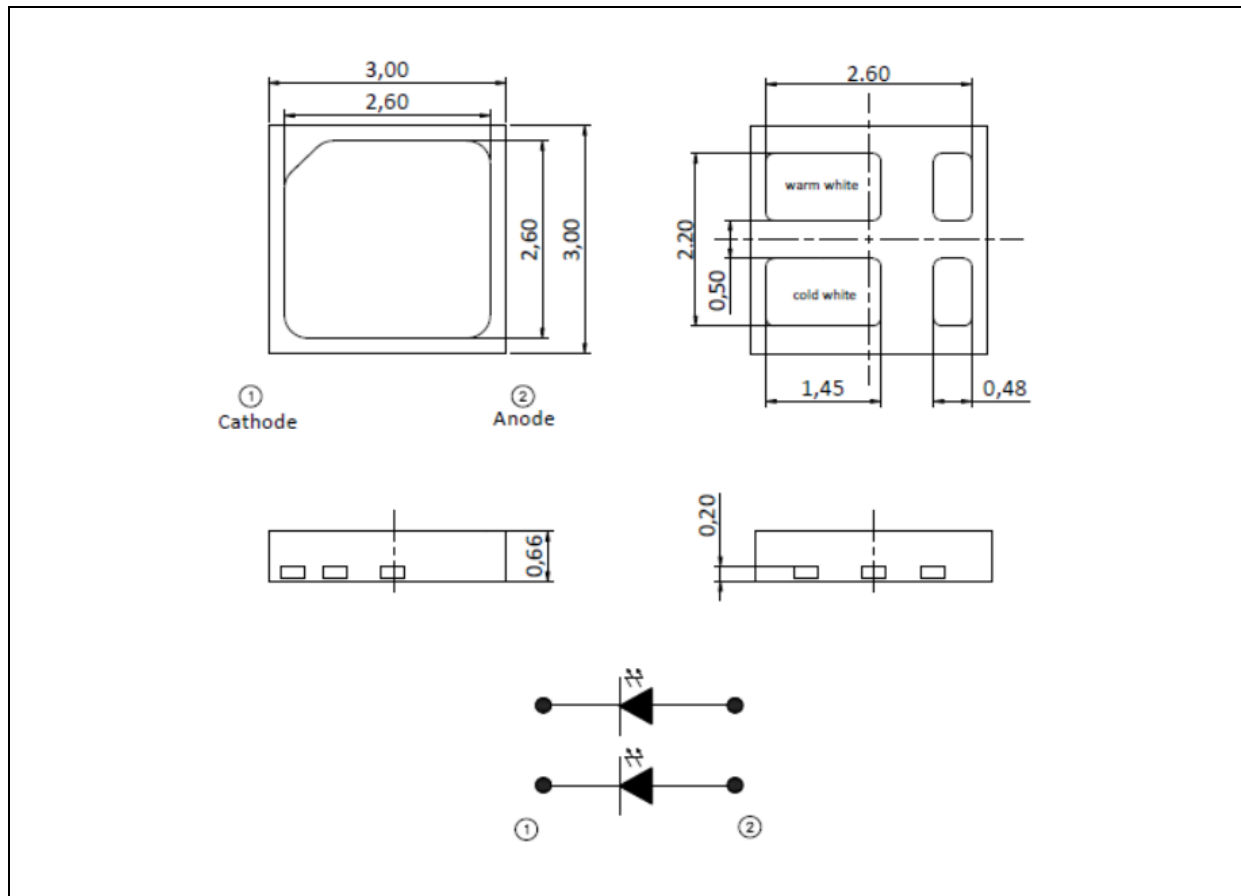
Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	3.2/3.2 *	3.4/3.4	3.6/3.6	V	$I_F=300\text{mA}$
Luminous Flux	Φ_V	100/80	110/90	---/---	lm	$I_F=300\text{mA}$
Colour Temperature	CCT	5310/2580	5665/2725	6020/2870	K	$I_F=300\text{mA}$
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	$I_F=300\text{mA}$

2. Luminous flux (Φ_V) $\pm 7\%$, Forward Voltage (V_F) $\pm 0.1\text{V}$, CRI ± 2
3. * in order of Cool White/Ware White



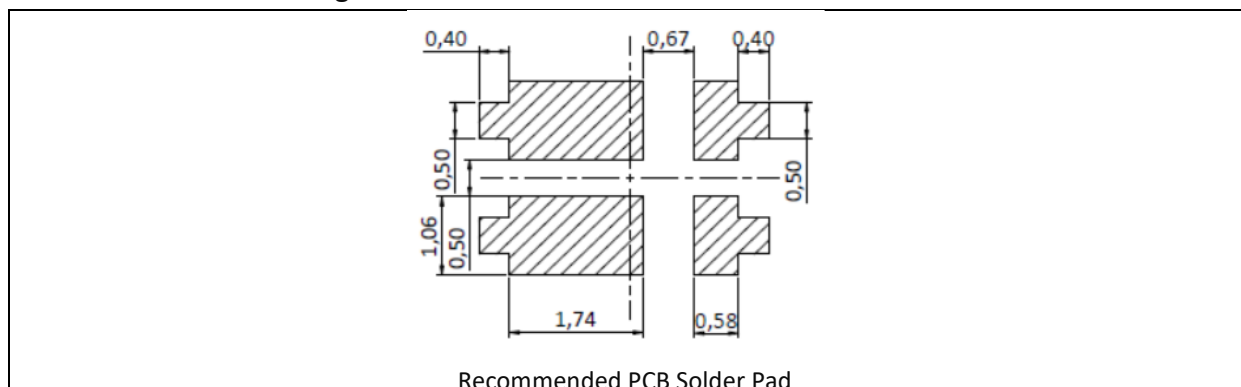
OUTLINE DIMENSION:

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 $\pm 0.2\text{mm}$ with angle tolerance $\pm 0.5^\circ$.

BINNING GROUPS:

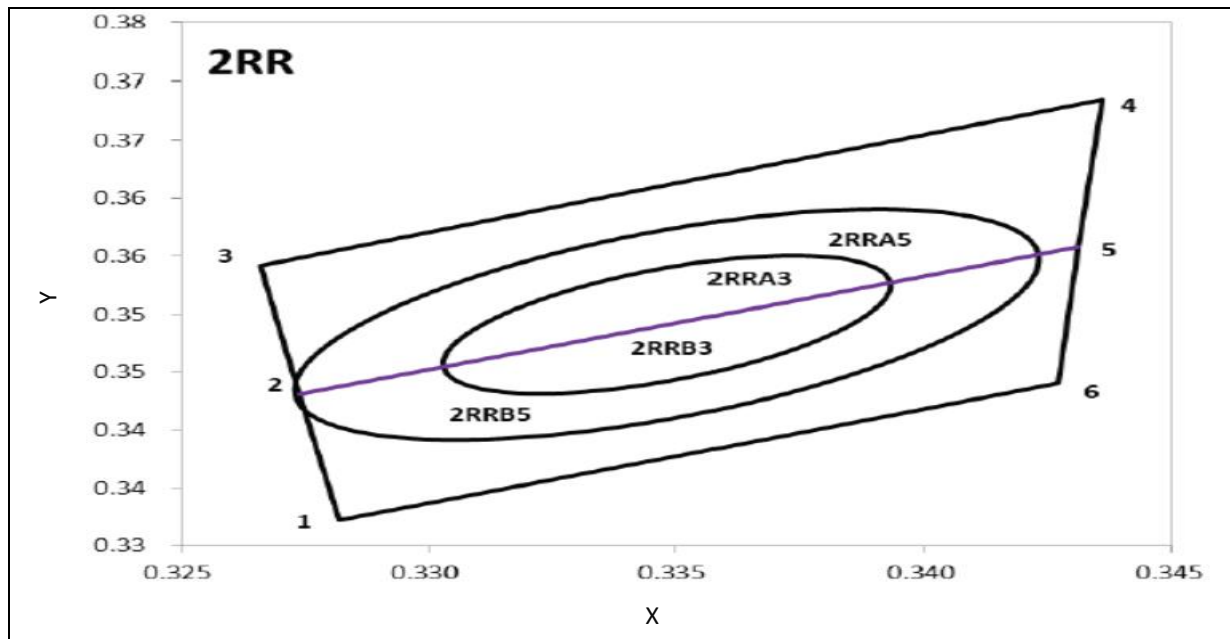
Forward Voltage Classifications ($I_F = 300\text{mA}$):

Code		Min.	Max.	Unit
N3		3.2	3.6	V

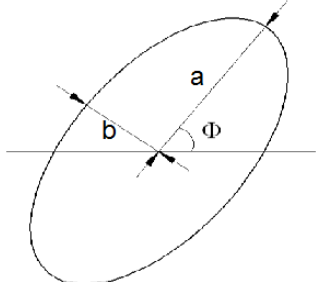
Luminous Flux Classifications ($I_F = 300\text{mA}$):

Code		Min.	Max.	Unit
5700K	K2	100	120	lm
2700K	D2	80	100	

CIE CHROMATICITY DIAGRAM (5700K):



Chromaticity Coordinates Classifications ($I_F = 300\text{mA}$):

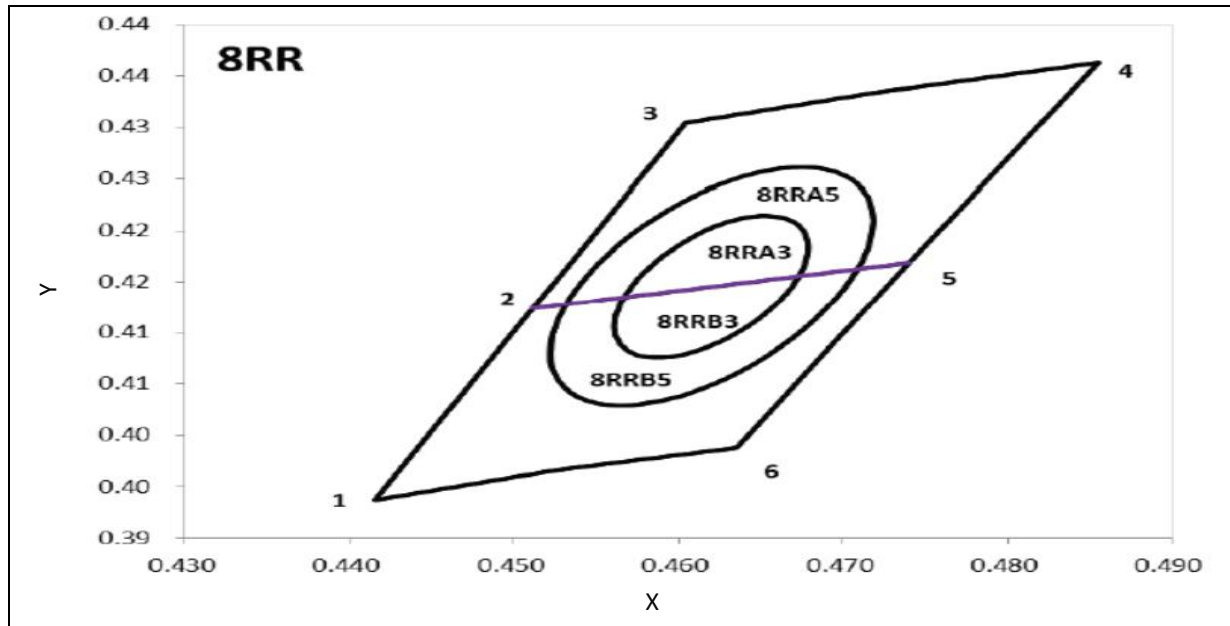
	Code	Centre		Radius		Angle
		X	Y	a	b	Φ
	2RR-3STEP	0.3348	0.3491	0.006705	0.003300	58.35
	2RR-5STEP	0.3348	0.3491	0.011175	0.005500	58.35

Chromaticity Coordinates Classifications ($I_F = 300\text{mA}$):

	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
2RR-1256	0.3283	0.3317	0.3276	0.3427	0.3432	0.3567	0.3427	0.3443
2RR-2345	0.3276	0.3427	0.3268	0.3536	0.3437	0.3690	0.3432	0.3567



CIE CHROMATICITY DIAGRAM (2700K):



Chromaticity Coordinates Classifications ($I_F = 300\text{mA}$):

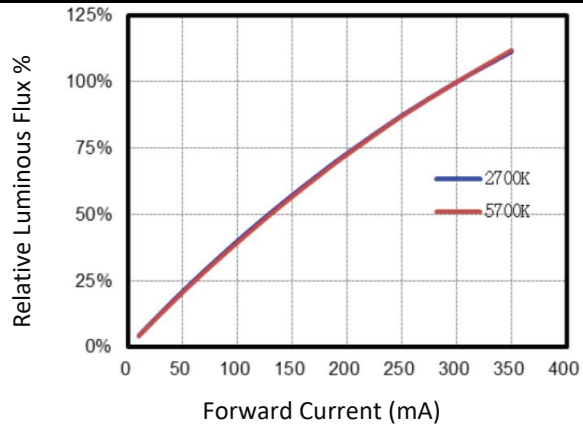
	Code	Centre		Radius		Angle
		X	Y	a	b	Φ
	8RR-3STEP	0.4620	0.4145	0.008100	0.004200	53.42
	8RR-5STEP	0.4620	0.4145	0.013500	0.007000	53.42

Chromaticity Coordinates Classifications ($I_F = 300\text{mA}$):

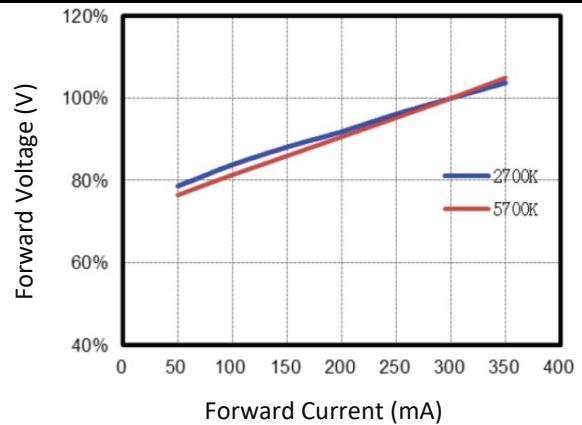
	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
8RR-1256	0.4415	0.3937	0.4510	0.4121	0.4745	0.4176	0.4635	0.3988
8RR-2345	0.4510	0.4121	0.2604	0.4304	0.4855	0.4363	0.4745	0.4176

ELECTRO-OPTICAL CHARACTERISTICS:

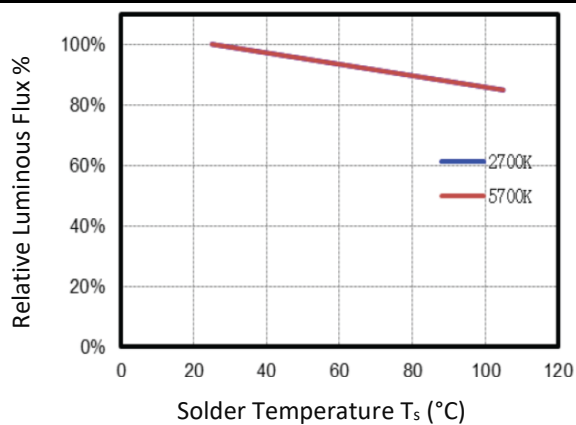
Relative Luminous Flux v.s. Forward Current



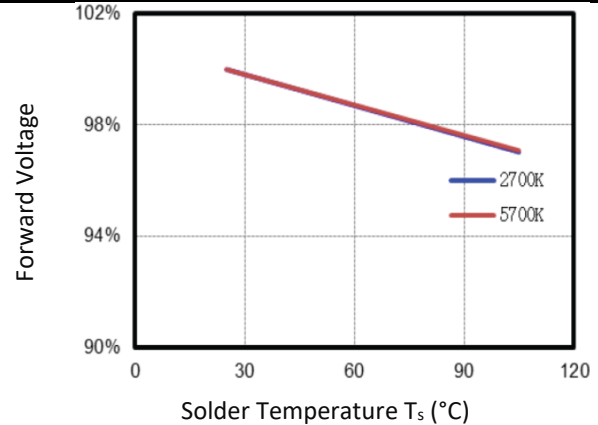
Forward Current v.s. Forward Voltage



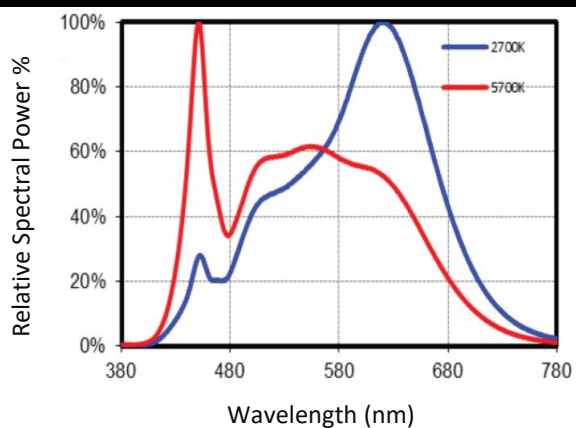
Relative Luminous Flux v.s. Solder Temperature



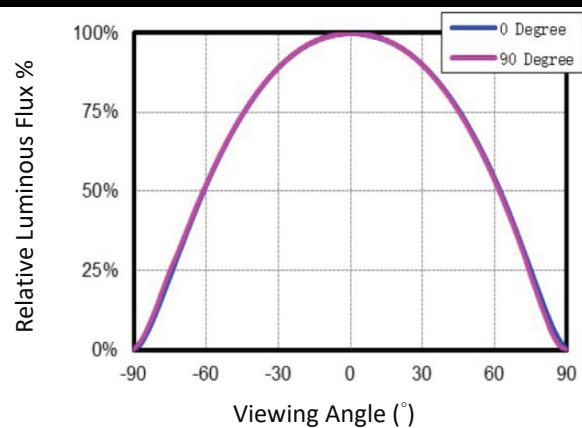
Forward Voltage v.s. Solder Temperature



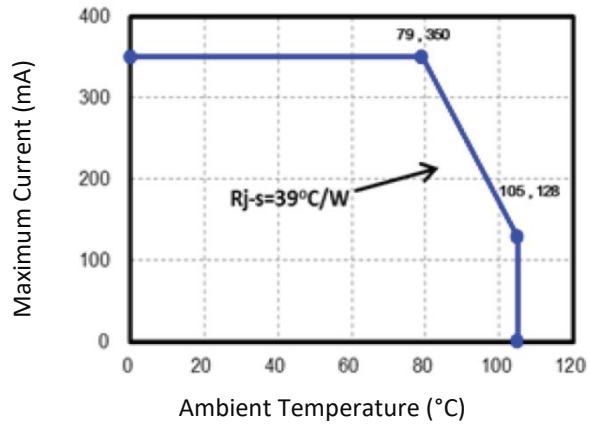
Relative Spectral Power v.s. Wavelength



Directive Radiation



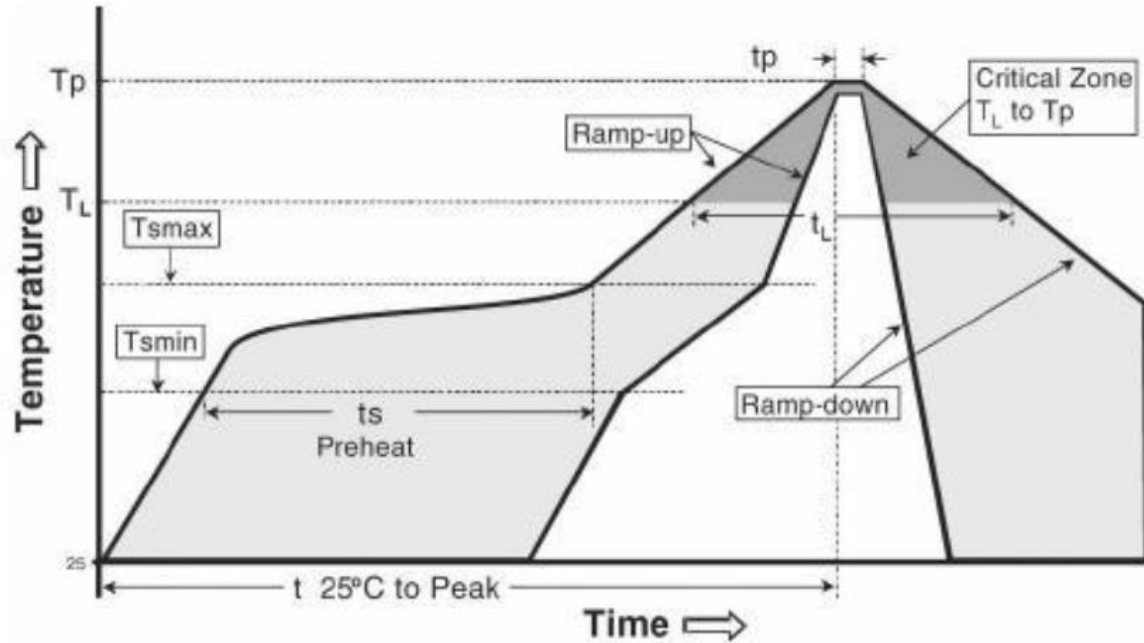
Forward Current Derating Curve





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

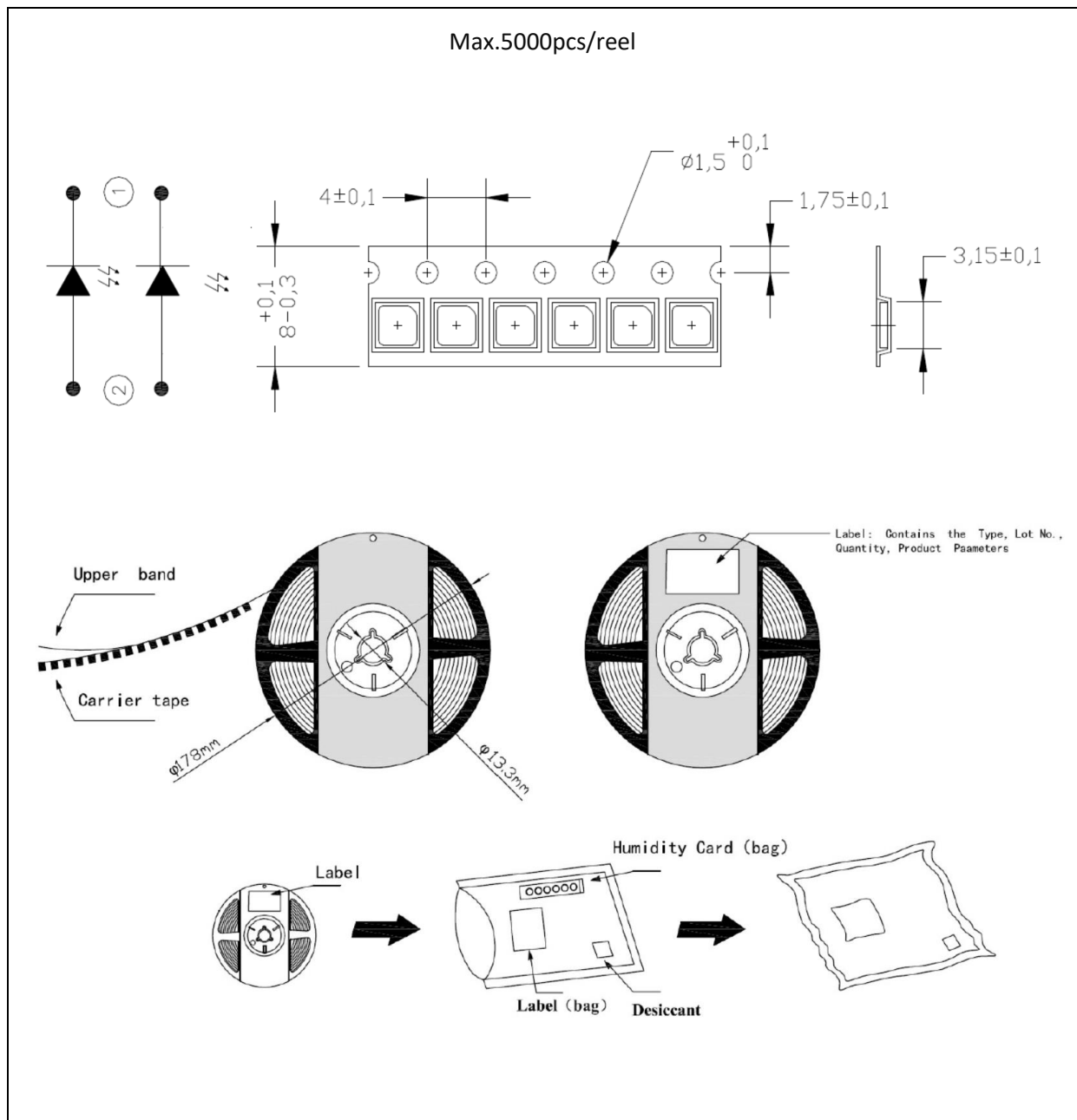
Note:

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:



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 desiccating 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±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-electrostatic 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	14/10/2020	Datasheet set-up.
A1.1	17/12/2024	New datasheet format.