



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 SMD
- ▶ 3030 0.65t Series
- ▶ W/R/G/B 4-in-1

NOM62S13



Release Date: 13 February 2025 Version: A1.1



3030 0.65t Series

3030 0.65t Series

RoHS
Compliant



FEATURES:

- **Package:** TOP View EMC WRGB SMT Package
- **Forward Current:** 100/100/100/100mA*
- **Forward Voltage (typ.):** 3.1/2.3/2.9/3.1V
- **Luminous Flux (typ.):** 43/16/27/7lm@100mA
- **Colour:** Natural White/Red/Green/Blue
- **CCT/Wavelength:** 5000K/622/527/461nm
- **Viewing Angle:** 120°
- **Materials:**
 - Resin: Silicon
 - L/T Finish: Ag plated
- **Operating Temperature:** -40~+70°C
- **Storage Temperature:** -40~+70°C
- **Grouping Parameters:**
 - Forward Voltage
 - Luminous Flux
 - CCT/Dominant Wavelength
- **Soldering Methods:** Reflow
- **MSL Level:** 3 according to J-STD020
- **Packing:** 8mm tape with max.5000/reel, ø178mm (7")

* in order of White/Red/Green/Blue

APPLICATIONS:

- Decorative Lighting
- Portable Lighting
- Outdoor Lighting
- Commercial Lighting
- Architectural Lighting
- Home Appliance
- Led Torch
- Mini Projector

CHARACTERISTICS:

Absolute Maximum Characteristics (T_a=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I _F	150	mA
Pulse Forward Current (width≤100μs; duty≤1/10)	I _{FP}	225	mA
Power Dissipation	P _D	525/375/495/525*	mW
Reverse Voltage	V _R	5	V
Reverse Current @5V	I _R	10	μA
Junction Temperature	T _j	110	°C
Operating Temperature	T _{OPR}	-40~+70	°C
Storage Temperature	T _{STG}	-40~+70	°C
Soldering Temperature	T _{SOL}	230 or 260 for 10S	°C

* in order of White/Red/Green/Blue

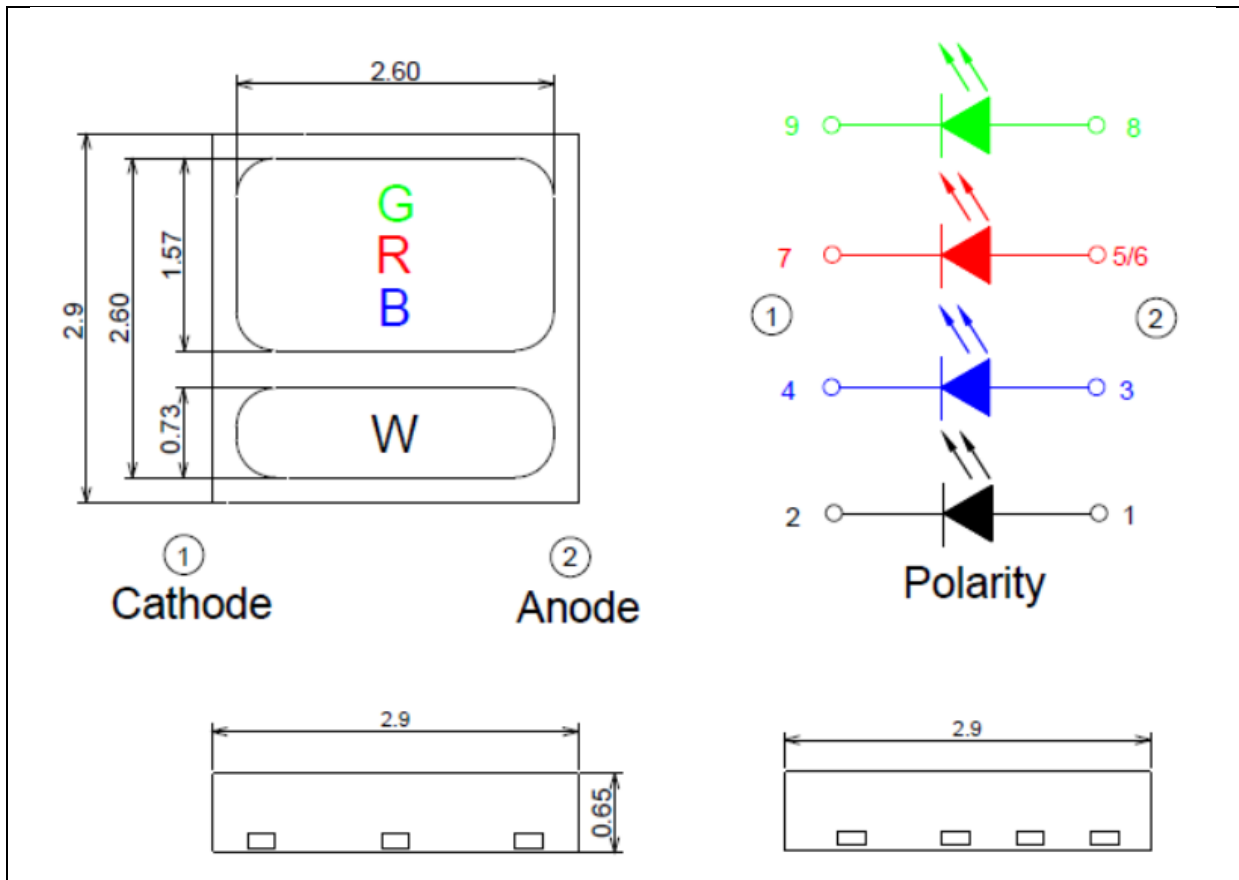
Electrical & Optical Characteristics (T_a=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V _F	2.9/1.9/2.7/2.9*	3.1/2.3/2.9/3.1	3.5/2.5/3.3/3.5	V	I _F =100mA
Luminous Flux	Φ _V	37/13/23/5	43/16/27/7	47/25/39/12	lm	I _F =100mA
White Colour Temperature	CCT	---	5000	---	K	I _F =100mA
R/G/B Dominant Wavelength	λ _D	617/522/452	---	626/531/470	nm	I _F =100mA
Viewing Angle	2θ _{1/2}	---	120	---	deg	I _F =100mA

1. Luminous flux (Φ_V) ±10%, Forward Voltage (V_F) ±0.1V
2. * in order of White/Red/Green/Blue

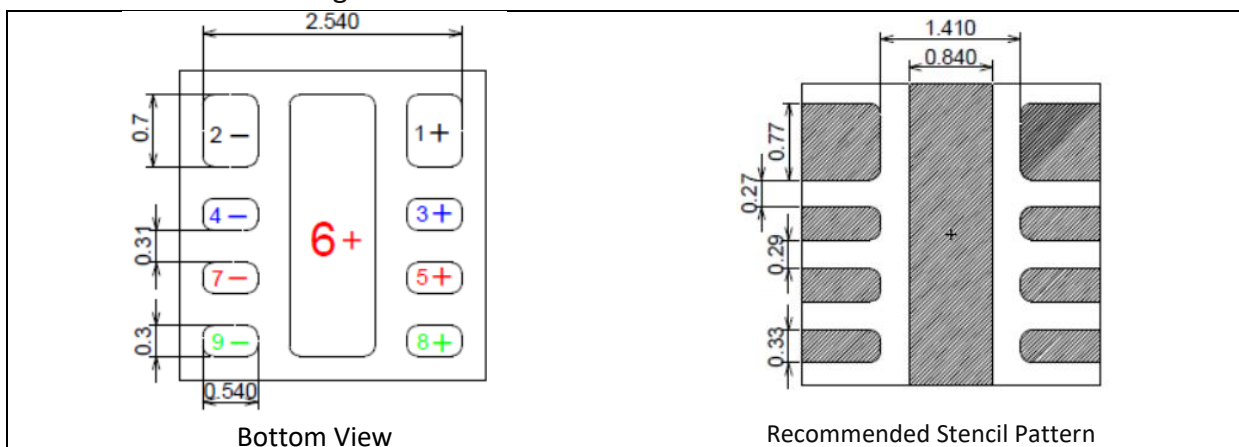
OUTLINE DIMENSION:

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 $\pm 0.1\text{mm}$ with angle tolerance $\pm 0.5^\circ$.

BINNING GROUPS:

Forward Voltage Classifications ($I_F = 100\text{mA}$):

Code		Min.	Max.	Unit
White	BB1	2.9	3.5	V
Red	RA1	1.9	2.5	V
Green	GB1	2.9	3.5	V
Blue	BB1	2.9	3.5	V

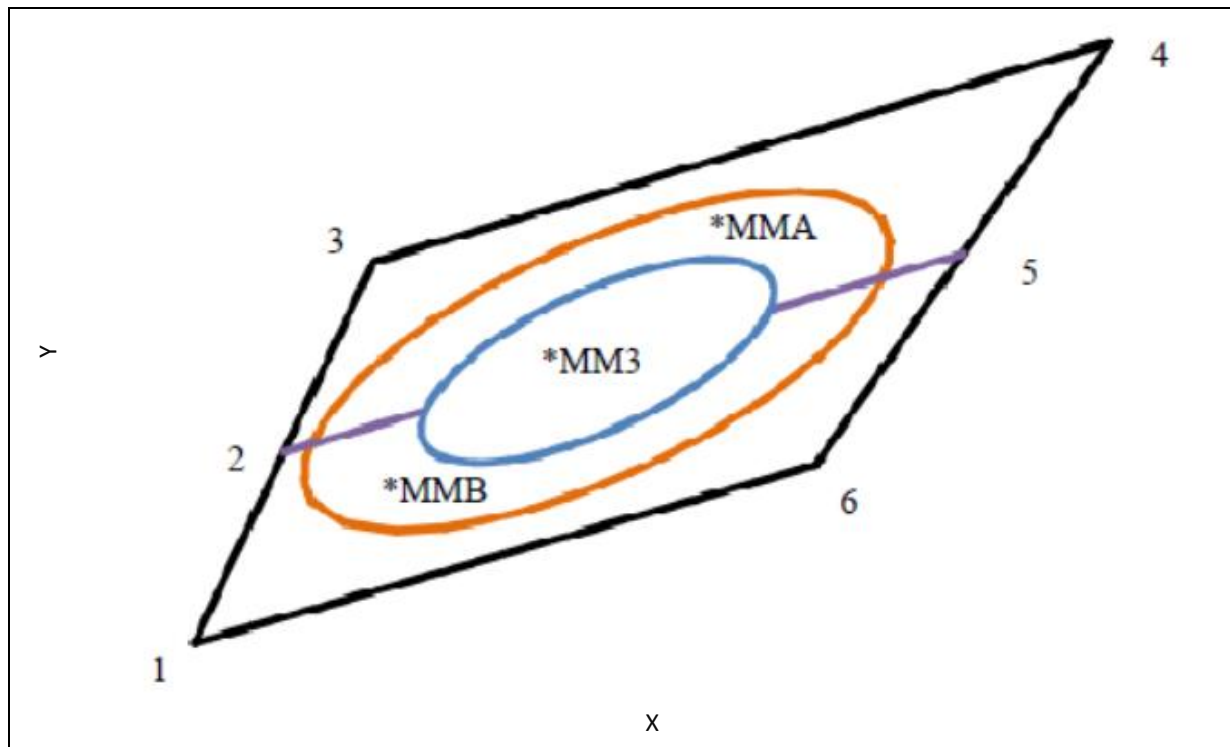
Luminous Flux Classifications ($I_F = 100\text{mA}$):

Code		Min.	Max.	Unit
White	WN4	37	47	lm
Red	RN1	13	19	lm
	RN2	19	25	
Green	GN1	23	31	lm
	GN2	31	39	
Blue	BN2	5	12	lm

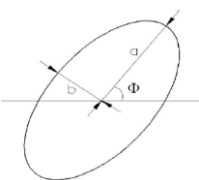
Dominant Wavelength Classifications ($I_F = 100\text{mA}$):

Code		Min.	Max.	Unit
Red	RE1	617	620	nm
	RE2	620	623	
	RE3	623	626	
Green	GE2	522	525	nm
	GE3	525	528	
	GE4	528	531	
Blue	BE2	452	455	nm
	BE3	455	458	
	BE4	458	461	
	BE5	461	464	
	BE6	464	467	
	BE7	467	470	

CIE CHROMATICITY DIAGRAM:



Chromaticity Coordinates Classifications ($I_F = 100\text{mA}$):

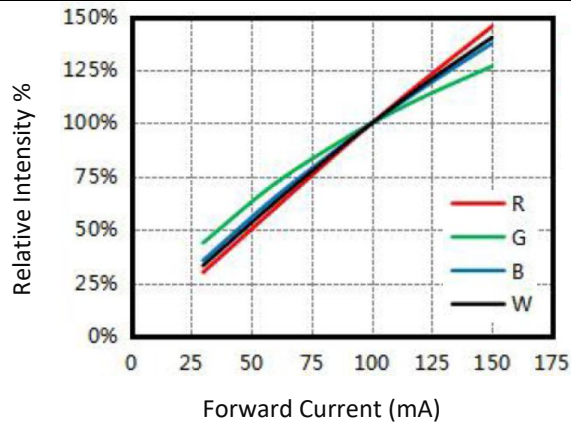
	Code	Centre		Radius		Angle
		X	Y	a	b	Φ
	3MM-3STEP	0.3451	0.3554	0.008220	0.003540	59.37
	3MM-5STEP	0.3451	0.3554	0.013700	0.005900	59.37

Chromaticity Coordinates Classifications ($I_F = 20\text{mA}$):

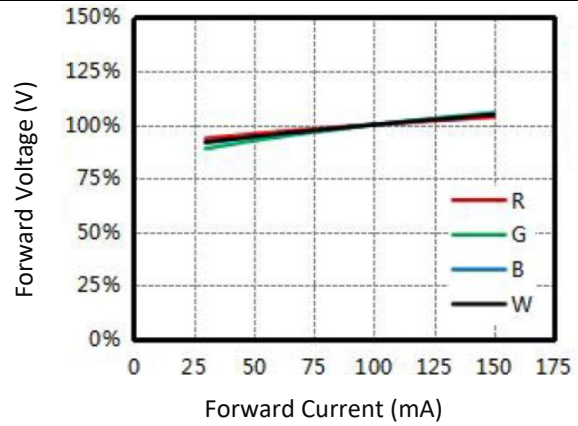
	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
1256	0.3370	0.3370	0.3375	0.3494	0.3537	0.3625	0.3519	0.3488
2345	0.3375	0.3494	0.3380	0.3617	0.3555	0.3761	0.3537	0.3625

ELECTRO-OPTICAL CHARACTERISTICS:

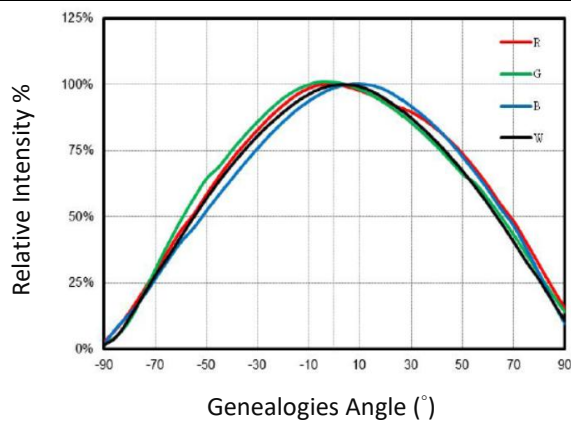
Relative Intensity v.s. Forward Current



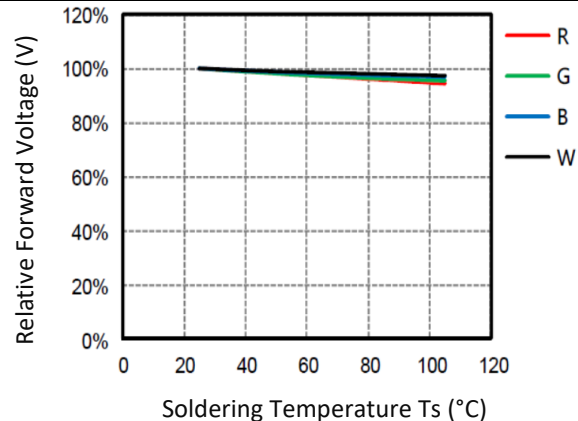
Forward Current v.s. Forward Voltage



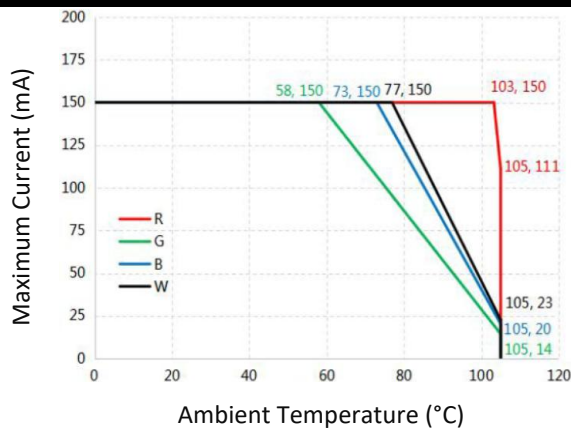
Relative Intensity v.s. Angular Displacement



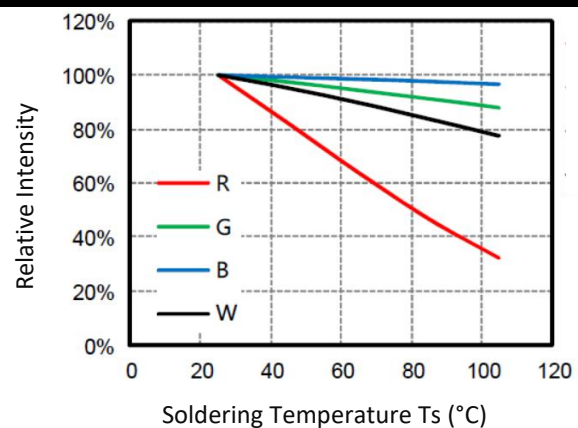
Relative Forward Voltage v.s. Temperature



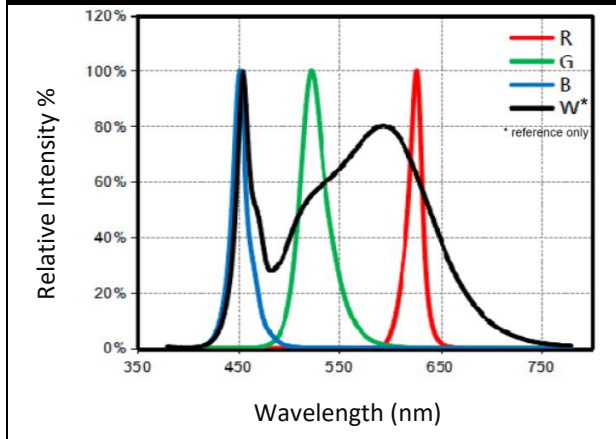
Temperature Derating Chart



Relative Intensity Flux v.s. Temperature

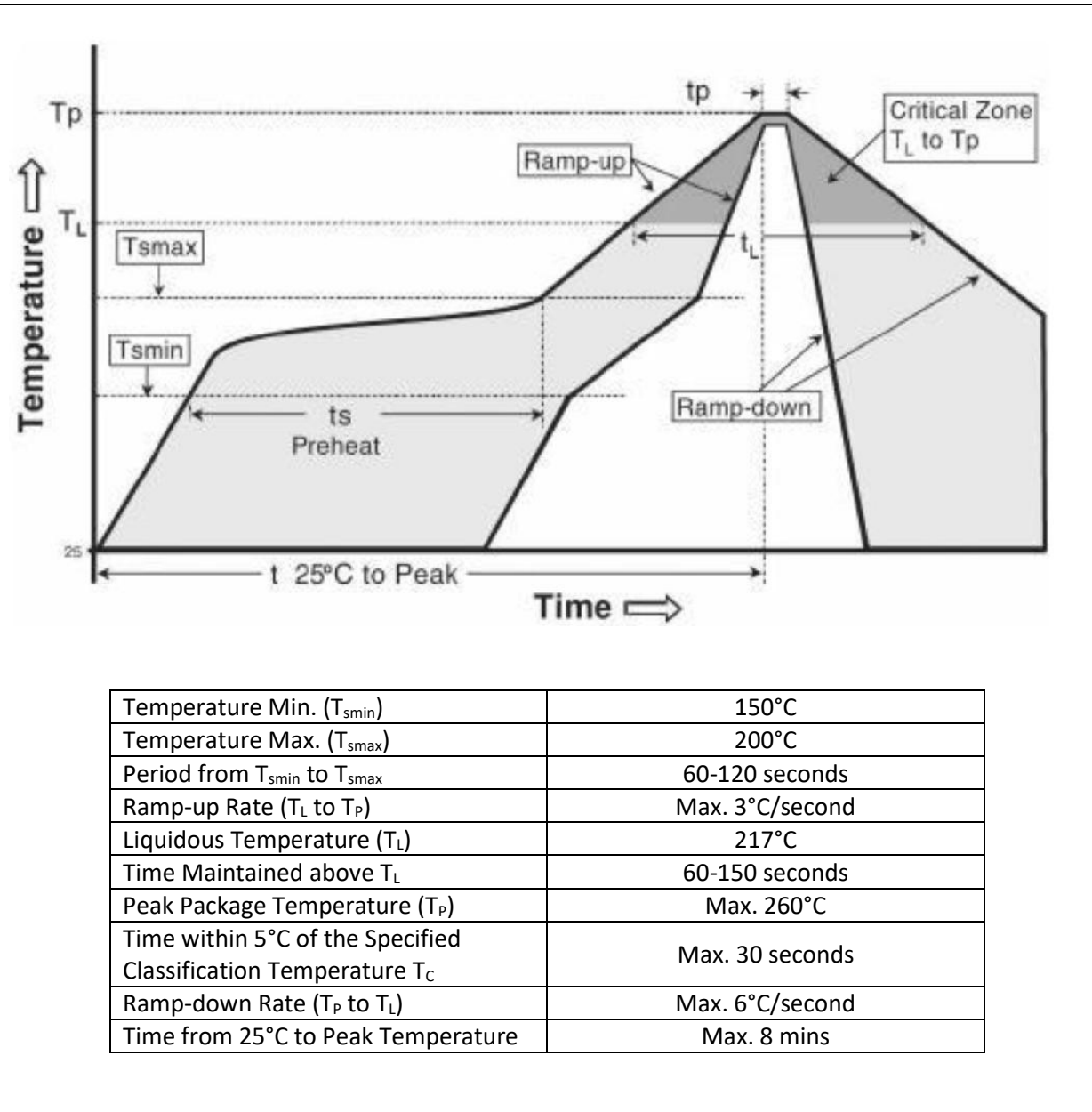


Relative Intensity v.s. Wavelength



RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:



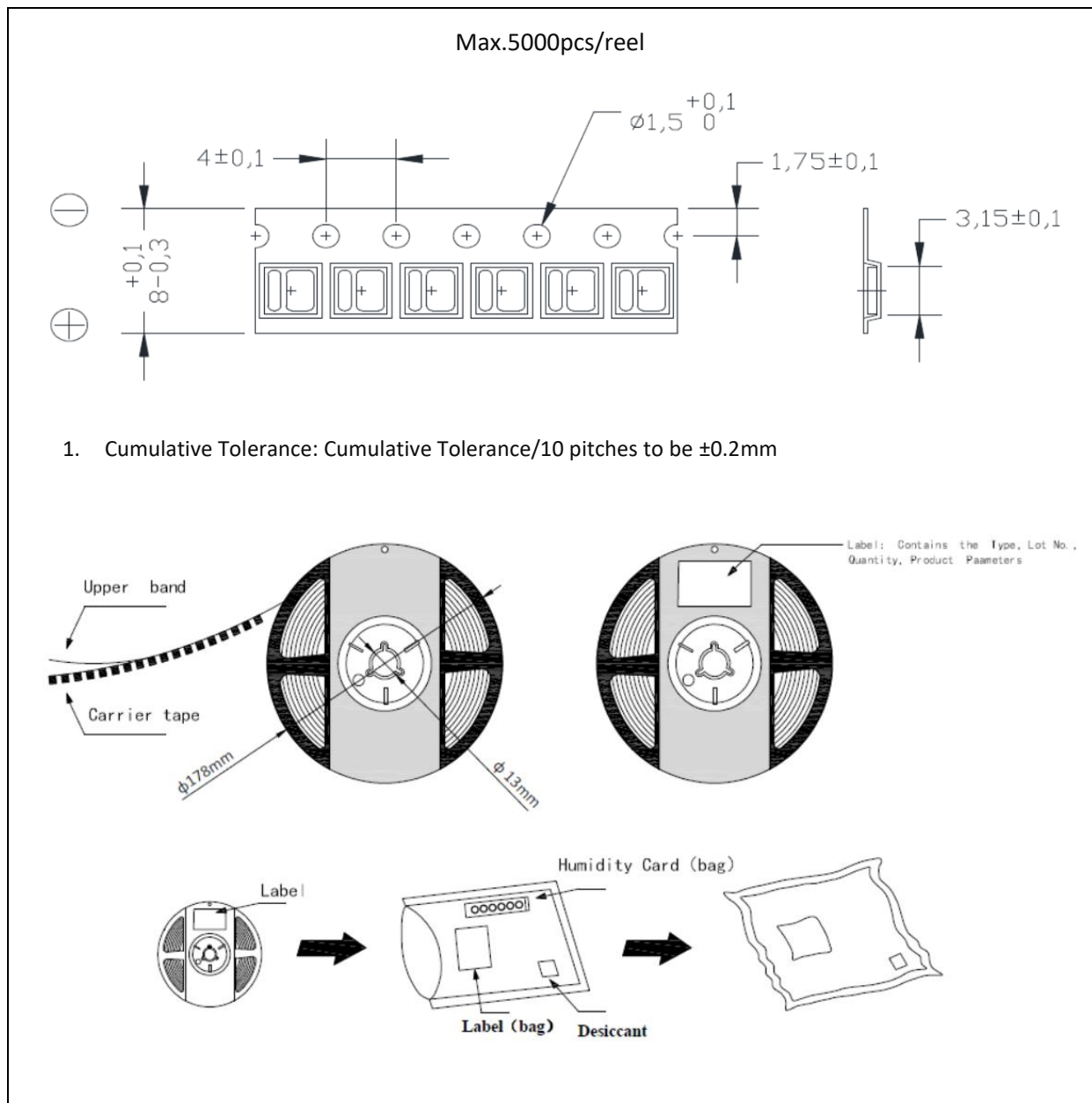
Note:

1. Die slug is to be soldered.
2. Maximum reflow soldering: 2 times. Between two soldering it should not be longer than 24 hours.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.
4. Recommended soldering temperature: 240°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:

- $60 \pm 5^\circ\text{C}$ 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	04/09/2022	Datasheet set-up.
A1.1	13/02/2025	Update sorting current to 100mA and add characteristics curves.