



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
- ▶ Red (622nm)/Green (527nm)/Blue (457nm)

NOM52S90



Release Date: 22 September 2020 Version: A1.0



3030 0.65t Series

RoHS Compliant



FEATURES:

- **Package:** TOP View EMC White SMT Package
- **Forward Current:** 60/60/60mA*
- **Forward Voltage (typ.):** 2.3/3.5/2.9V
- **Luminous Flux (typ.):** 7/10/3lm@60mA
- **Colour:** Red/Green/Blue
- **Wavelength:** 622/527/457nm
- **Viewing angle:** 120°
- **Materials:**
 - Die: AlGaInP/InGaN/InGaN
 - Resin: Silicon (White Diffused)
 - L/T Finish: Ag plated
- **Operating Temperature:** -40~+105°C
- **Storage Temperature:** -40~+105°C
- **Grouping parameters:**
 - Forward Voltage
 - Luminous Flux
 - Dominant Wavelength
- **Soldering methods:** Reflow
- **Preconditioning:** MSL3 according to J-STD020
- **Packing:** 8mm tape with max.5000/reel, ϕ 178mm (7")

* in order of Red/Green/Blue

APPLICATIONS:

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

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I _F	65/65/65*	mA
Pulse Forward Current (width≤100μS; duty≤1/10)	I _{FP}	95/95/95	mA
Power Dissipation	P _D	169/247/208	mW
Reverse Voltage	V _R	5	V
Reverse Current @5V	I _R	10	μA
Junction Temperature	T _j	110/120/120	°C
Thermal Resistance	R _{th(j-sp)}	20/110/50	°C/W
Operating Temperature	T _{OPR}	-40~+105	°C
Storage Temperature	T _{STG}	-40~+105	°C
Soldering Temperature	T _{SOL}	230 or 260 for 10S	°C

* in order of Red/Green/Blue

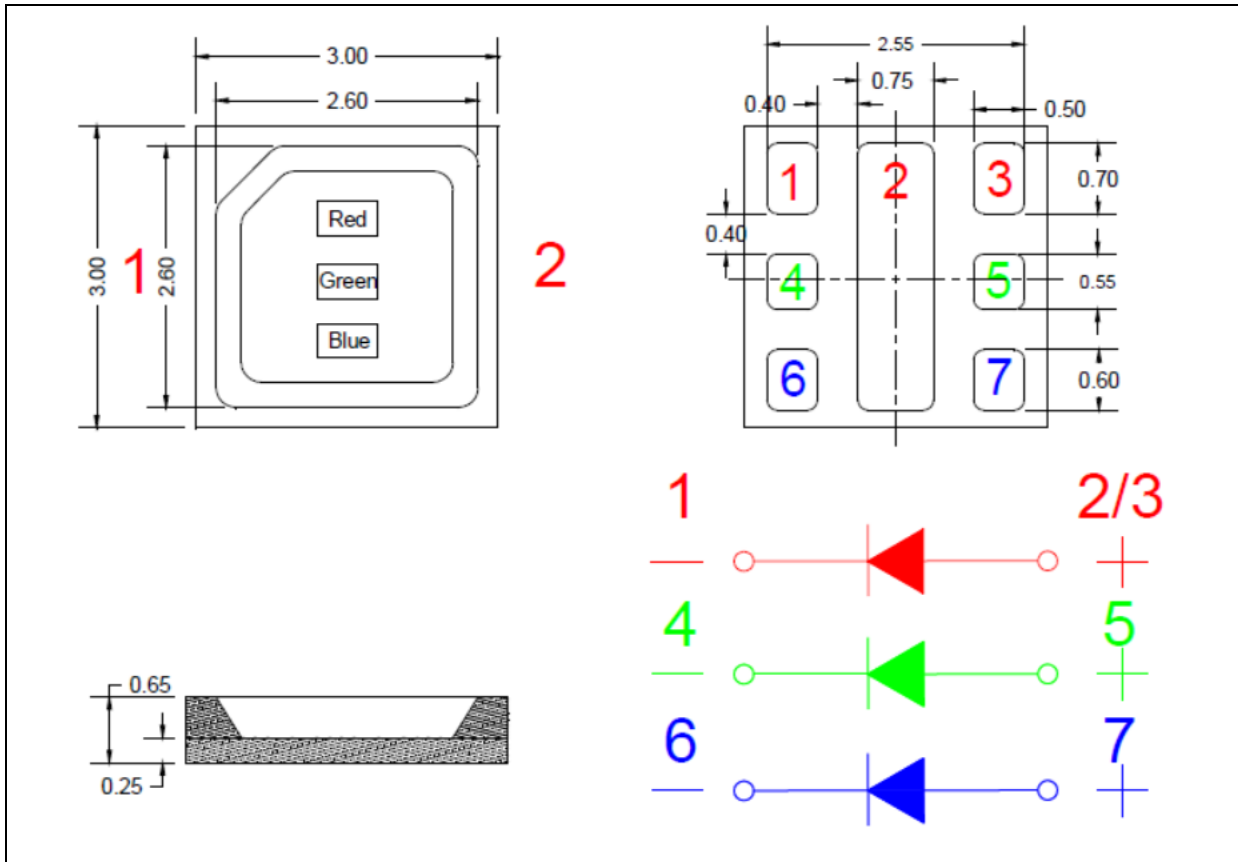
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V _F	1.9/3.2/2.6*	---	2.6/3.8/3.2	V	I _F =60mA
Luminous Flux	Φ _v	5/7/2	---	10/13/4	lm	I _F =60mA
Dominant Wavelength	λ _D	615/520/450	---	630/535/465	nm	I _F =60mA
Viewing Angle	2θ _{1/2}	---	120	---	deg	I _F =60mA

- Luminous flux (Φ_v) ±10%, Forward Voltage (V_F) ±0.1V
- * in order of Red/Green/Blue

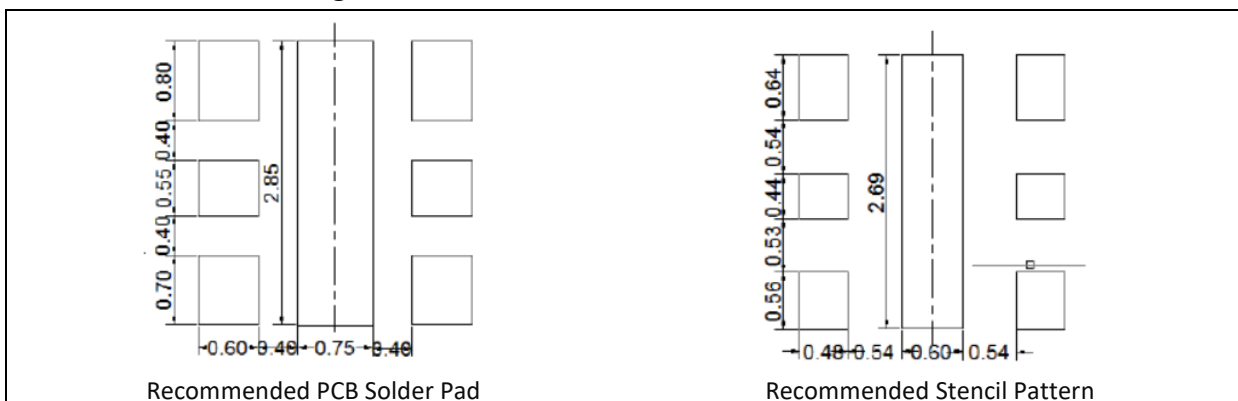
OUTLINE DIMENSION:

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 ($I_F = 60\text{mA}$):

Code		Min.	Max.	Unit
Red	AB0	1.6	2.0	V
	AC0	2.0	2.4	
	AD0	2.4	2.8	
Green	AF0	3.2	3.6	V
	AG0	3.6	4.0	
Blue	AD0	2.4	2.8	V
	AE0	2.8	3.2	

 Luminous Flux Classifications ($I_F = 60\text{mA}$):

Code		Min.	Max.	Unit
Red	DR1	5	15	lm
Green	DG3	7	20	lm
Blue	DB1	2	7	lm

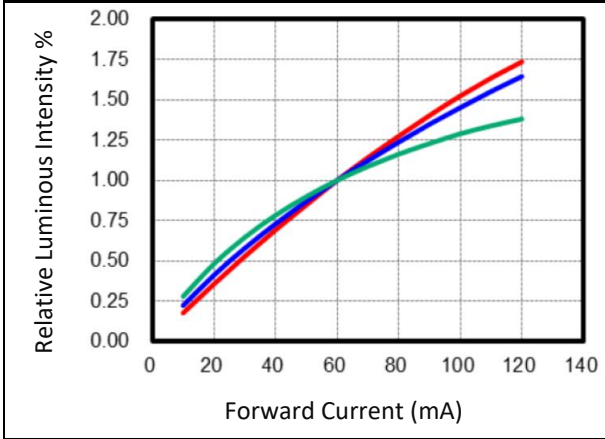
BINNING GROUPS:

 Dominant Wavelength Classifications ($I_F = 60\text{mA}$):

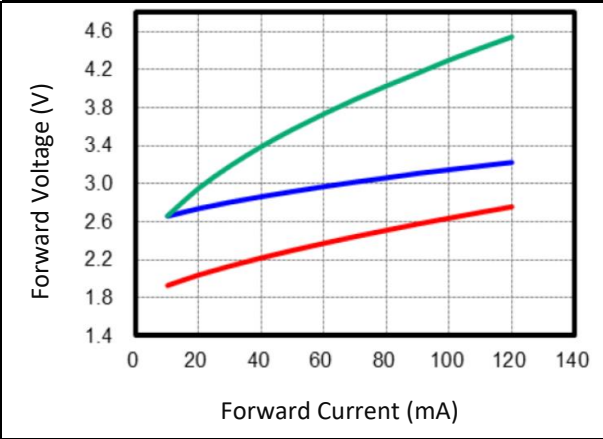
Code		Min.	Max.	Unit
Red	RB2	615	620	nm
	RC1	620	625	
	RC2	625	630	
Green	GC1	520	525	nm
	GC2	525	530	
	GD1	530	535	
Blue	BB1	450	455	nm
	BB2	455	460	
	BC1	460	465	

ELECTRO-OPTICAL CHARACTERISTICS:

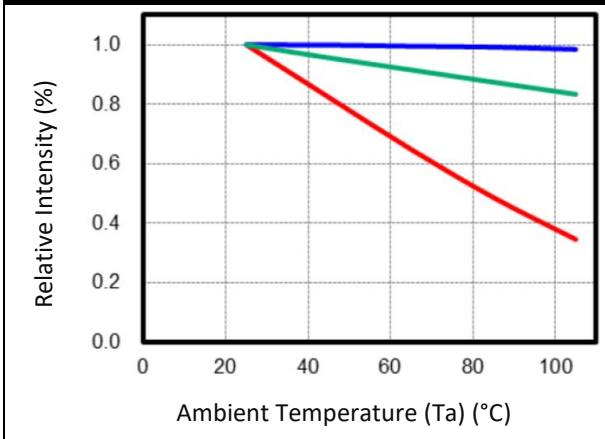
Relative Luminous Intensity v.s. Forward Current



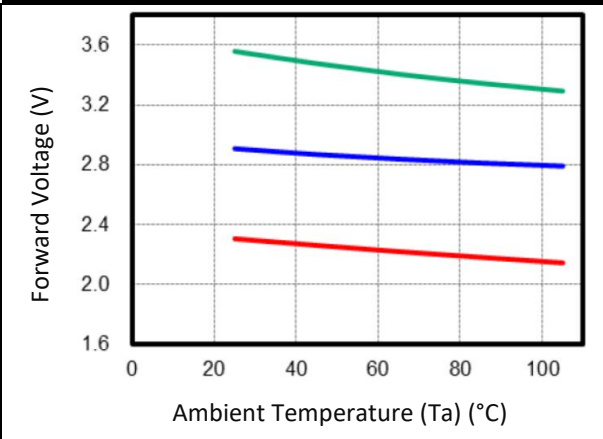
Forward Current v.s. Forward Voltage



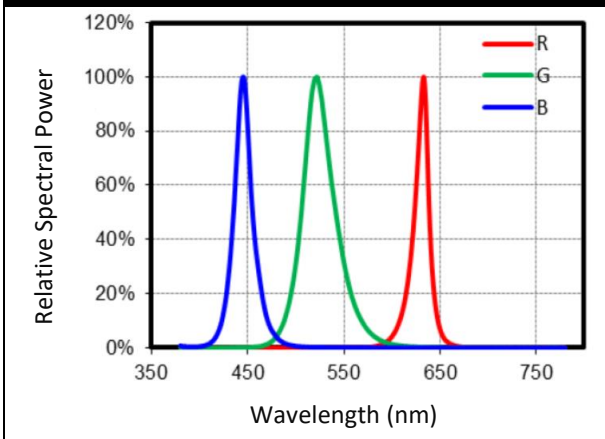
Relative Intensity v.s. Ambient Temperature



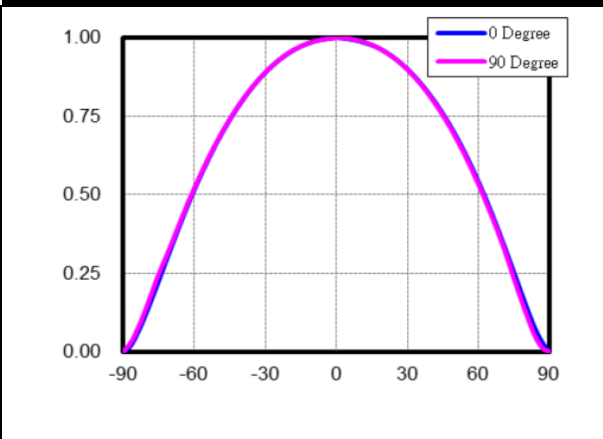
Forward Voltage v.s. Ambient Temperature



Luminous Spectrum

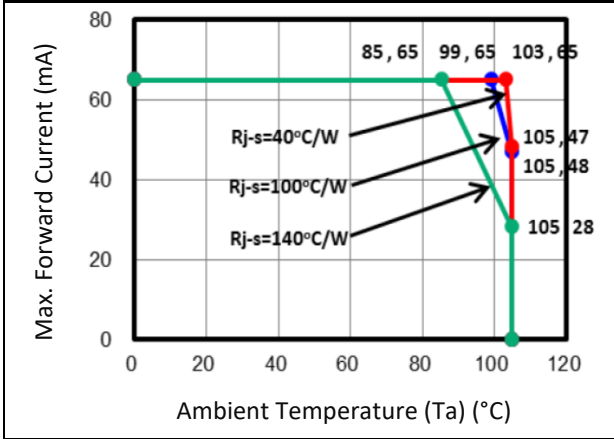


Directive Radiation



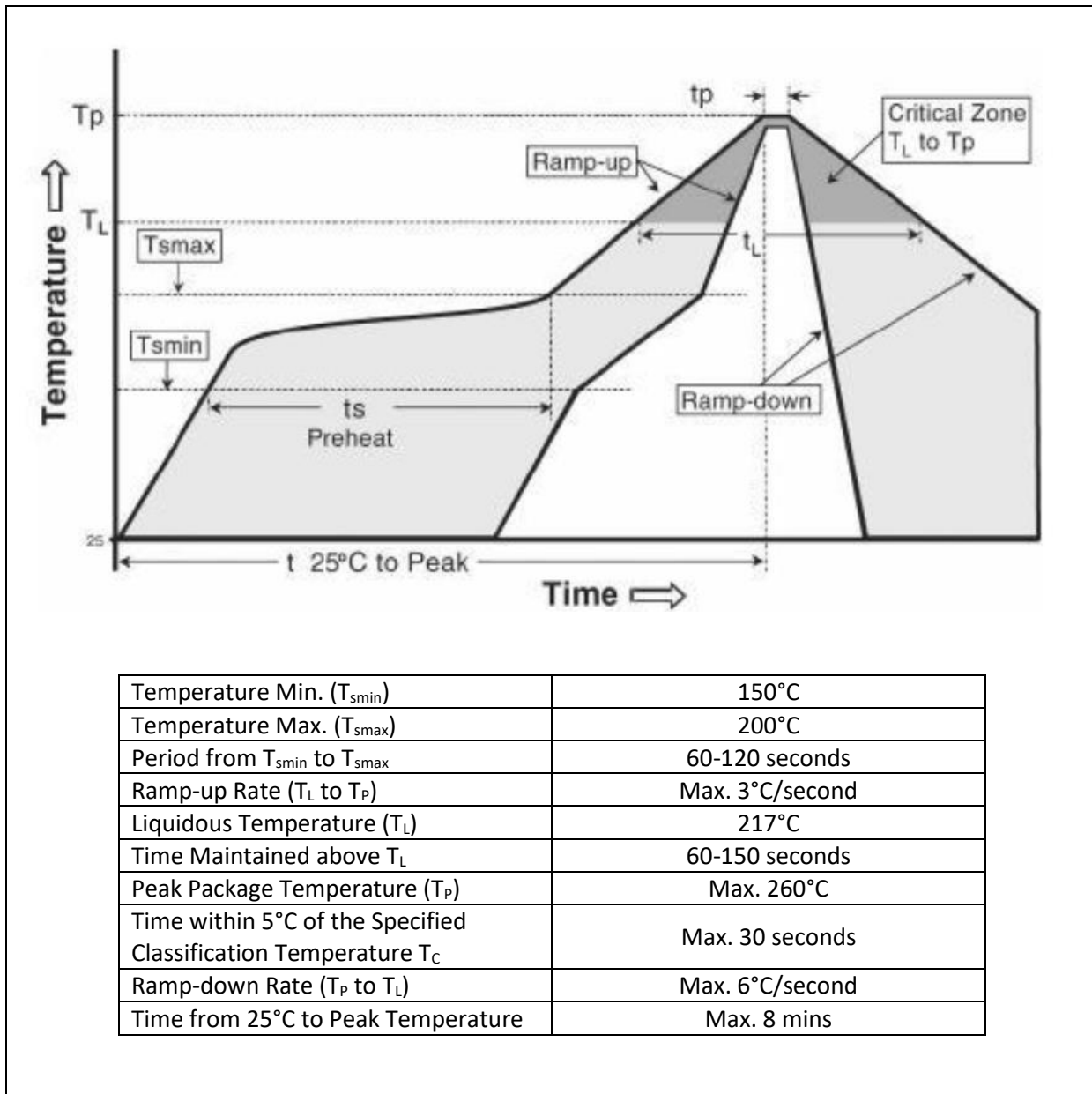
ELECTRO-OPTICAL CHARACTERISTICS:

Ambient Temperature v.s. Max. Forward Current



RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

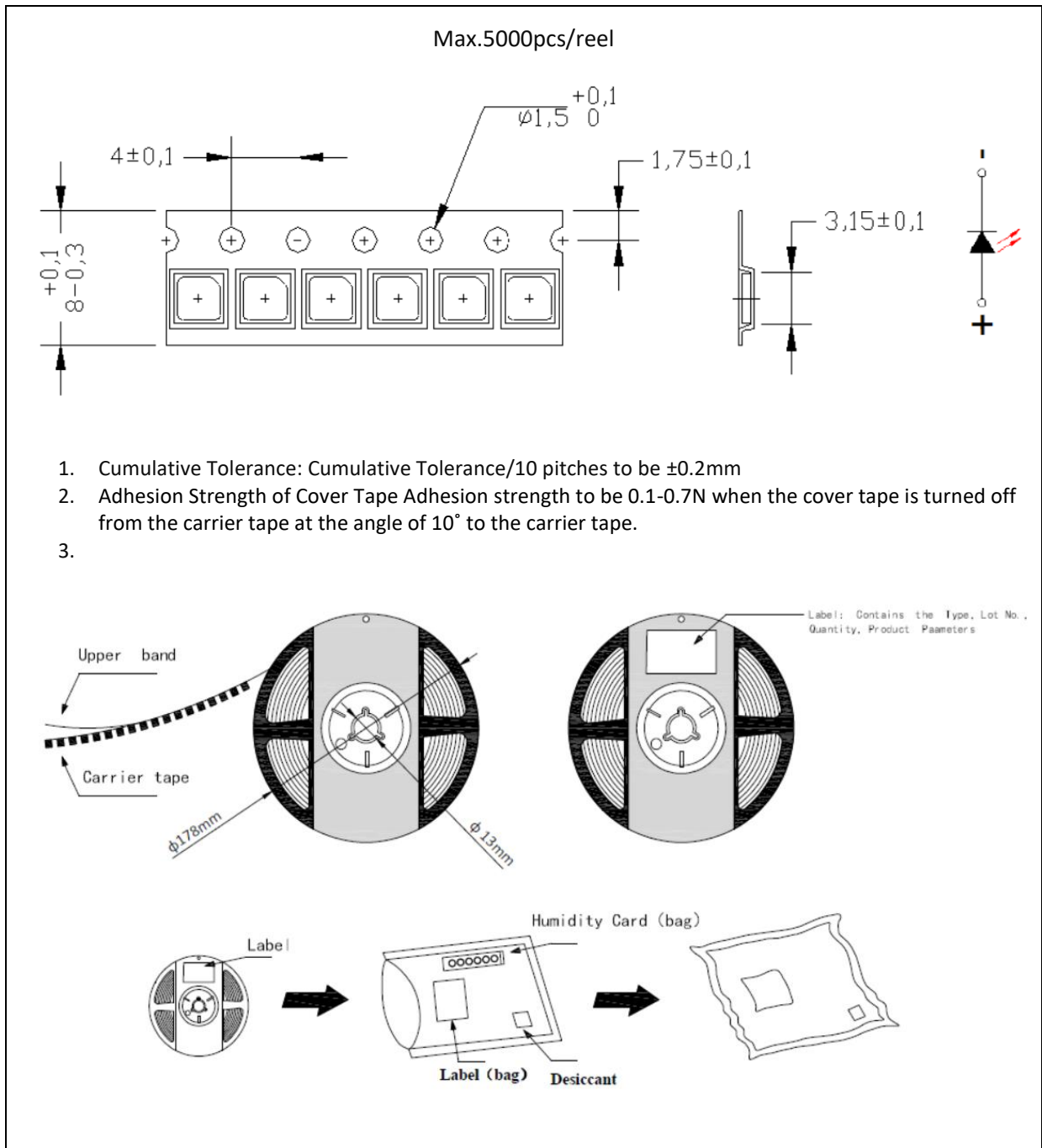


Note:

1. Maximum reflow soldering: 2 times. Between two soldering it should not be longer than 24 hours.
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.

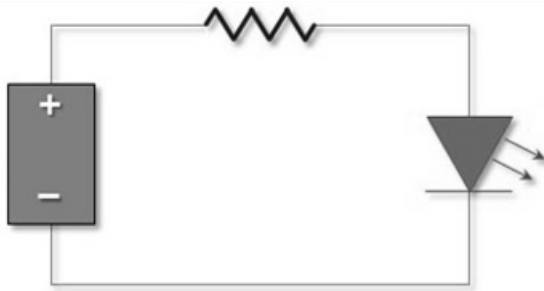
Baking:

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	22/09/2020	Datasheet set-up.