



BRIGHTTEK
BRIGHTTEK (EUROPE) LIMITED

Brighten up The World With LED!



ISO/TS 16949:2009

BSI EM ISO 14001:2004

QC 900000 IECQ HSP98

PRODUCT DATASHEET



- ▶ EMC 4-PIN SMD
- ▶ 2034 0.52t
- ▶ Cool White (5800K) / PC Amber (1800K)

NOD46S61



Release Date: 31 October 2018 Version: A1.1



2034 EMC Series



FEATURES:

- **Package:** Top View Dual Colour EMC Package
- **Forward Current:** 150/150mA* (*in order of White/Amber)
- **Forward Voltage (typ.):** 3.1/3.1V
- **Luminous Flux (typ.):** 74/56lm@150mA
- **Colour:** Cool White/PC Amber
- **Colour Temperature (CCT):** 5800/1800K
- **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:** 1000V
- **Grouping parameters:**
 - Forward Voltage
 - Luminous Flux
 - CIE Chromaticity
- **Soldering methods:** Reflow Soldering
- **MSL Level:** MSL3 according to J-STD020
- **Packing:** 8mm tape with Max. 2000/reel, ø178mm (7")

APPLICATIONS:

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

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C, RH=60%)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I _F	150/150*	mA
Pulse Forward Current (Duty 1/10, width≤100μS)	I _{PF}	225	mA
Power Dissipation	P _D	525	mW
Reverse Voltage	V _R	5	V
Reverse Current @10V	I _R	10	μA
Junction Temperature	T _j	120	°C
Electrostatic Discharge (HBM)	ESD	1000	V
Thermal Resistance (Junction to Solder Point)	R _{THJSP}	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
Colour Rendering Index	CRI	80/---	---

*in order of White/Amber

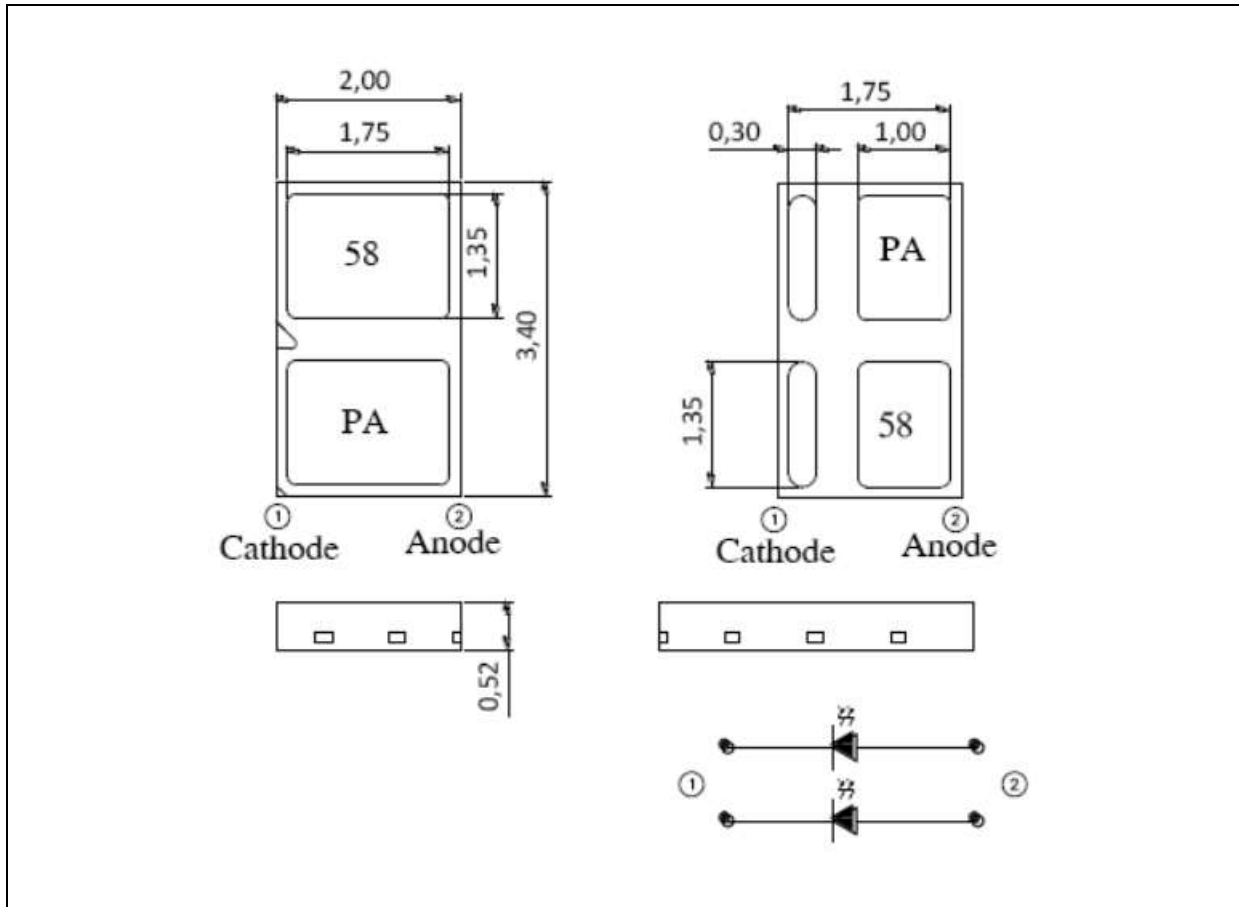
Electrical & Optical Characteristics (Ta=25°C, RH=60%)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V _F	2.9/2.9*	3.1/3.1	3.5/3.5	V	I _F =150mA
Luminous Flux	Φ _v	70/50	74/56	85/65	lm	I _F =150mA
Chromaticity Coordinates	X	---	0.3249/ 0.5750	---	---	I _F =150mA
	Y	---	0.3343/ 0.4190	---		
Colour Temperature	CCT	5500/1600	5850/1800	6240/2100	K	I _F =150mA
Viewing Angle	2θ _{1/2}	---	120	---	deg	I _F =150mA

1. Luminous flux (Φ_v) ±7%, Forward Voltage (V_F) ±0.1V
2. *in order of White/Amber

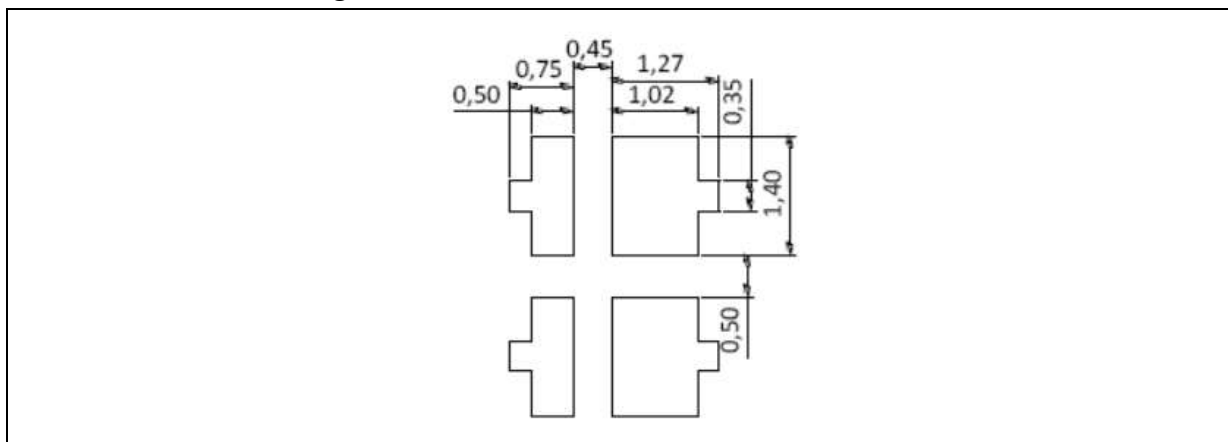
OUTLINE DIMENSION:

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:

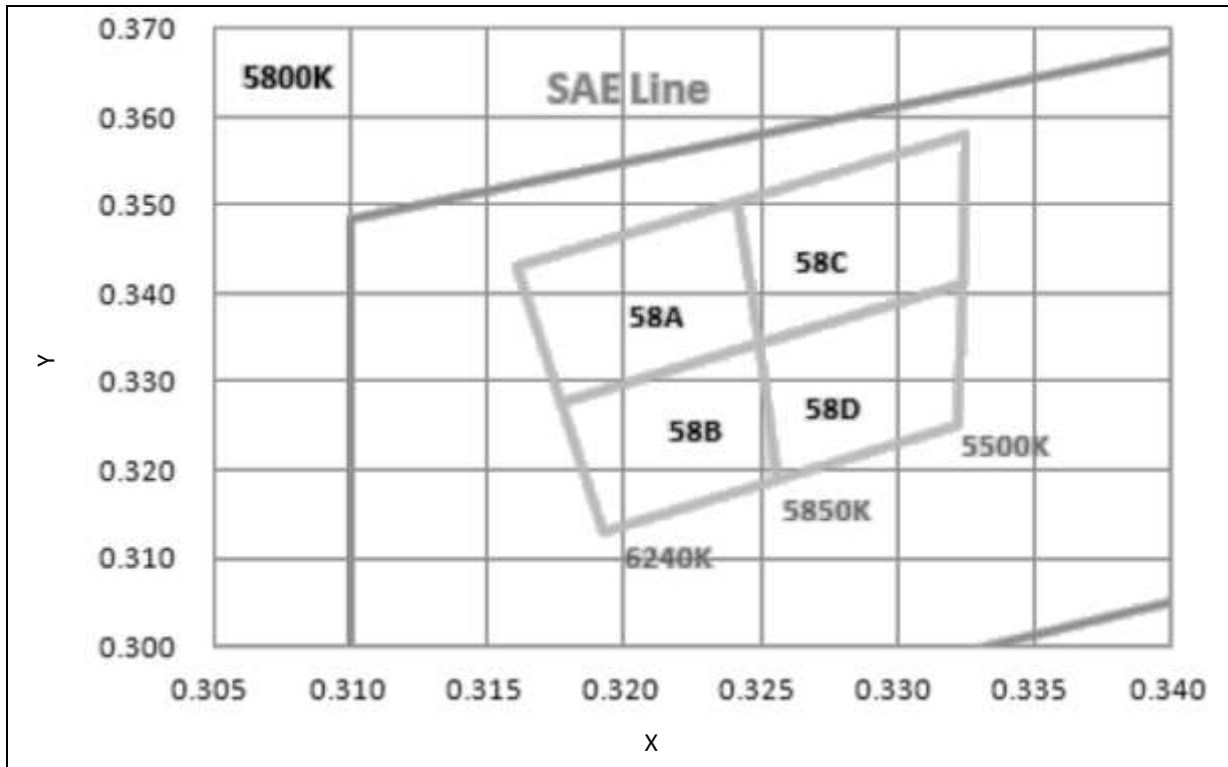
 Forward Voltage Classifications ($I_F = 150\text{mA}$):

Code		Min.	Max.	Unit
Cool White / PC Amber	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 ($I_F = 150\text{mA}$):

Code		Min.	Max.	Unit
Cool White	1W	70	75	lm
	1X	75	80	
	5A	80	85	
PC Amber	1Q	50	55	lm
	1R	55	60	
	1S	60	65	

CIE CHROMATICITY DIAGRAM (COOL WHITE):

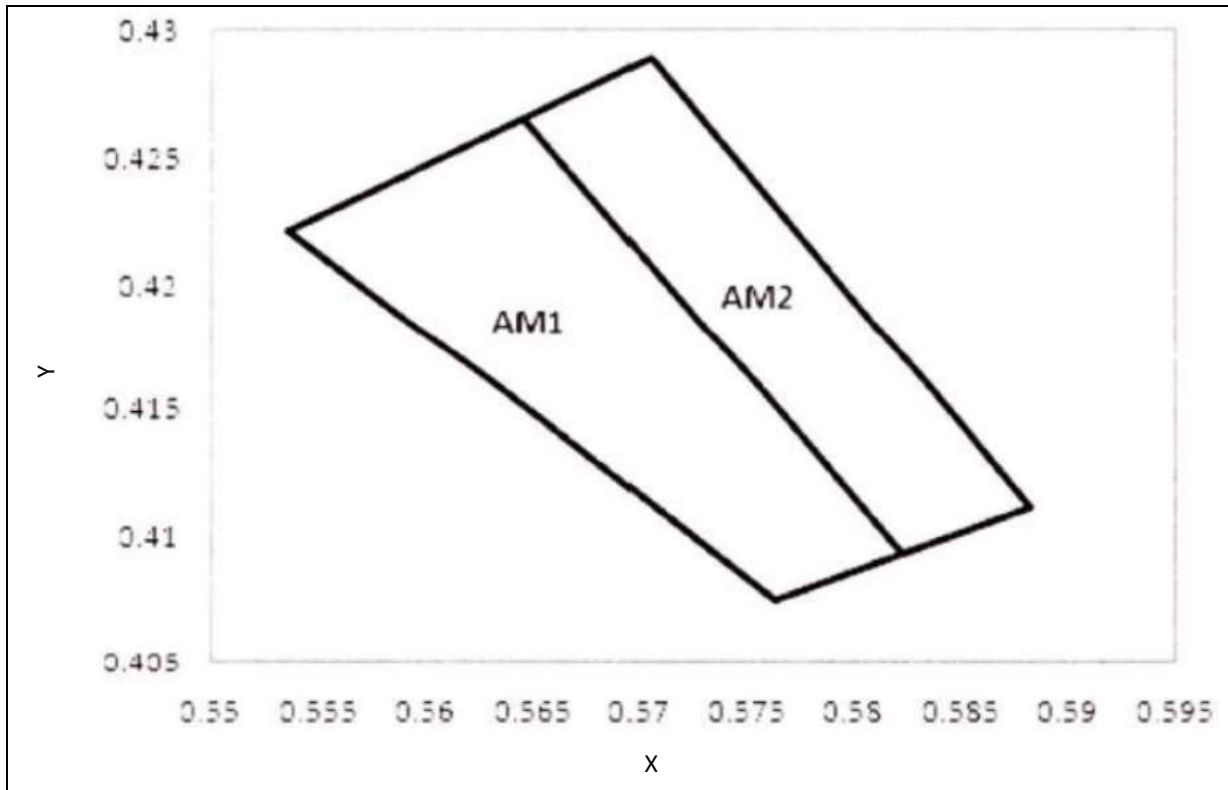


Chromaticity Coordinates Classifications ($I_F = 150\text{mA}$):

	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
58A	0.3161	0.3431	0.3241	0.3505	0.3249	0.3343	0.3177	0.3276
58B	0.3177	0.3276	0.3249	0.3343	0.3256	0.3190	0.3192	0.3130
58C	0.3241	0.3505	0.3325	0.3579	0.3324	0.3410	0.3249	0.3343
58D	0.3249	0.3343	0.3324	0.3410	0.3322	0.3250	0.3256	0.3190

- Tolerance ± 0.005 .

CIE CHROMATICITY DIAGRAM (PC AMBER):



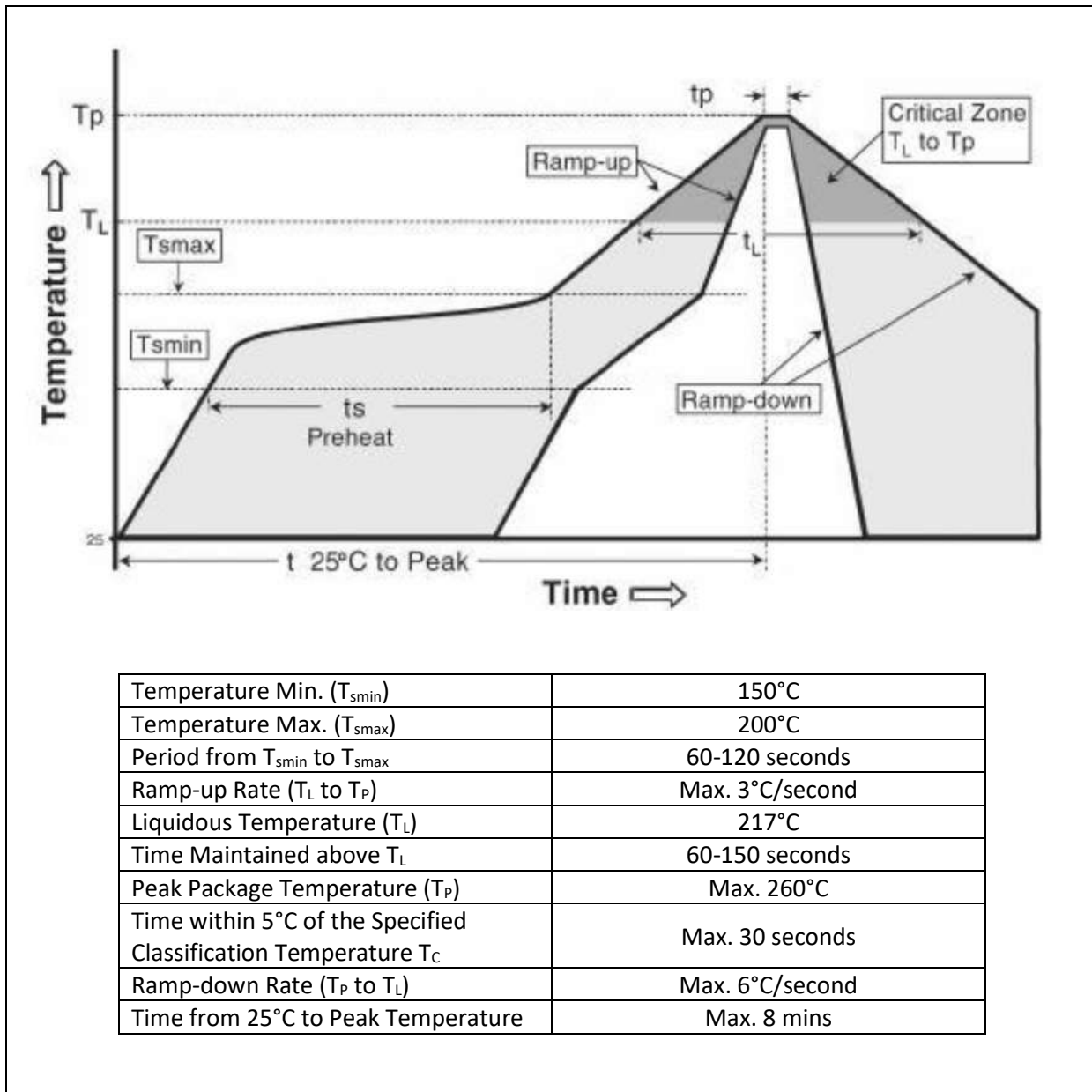
Chromaticity Coordinates Classifications ($I_F = 150\text{mA}$):

	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
AM1	0.5764	0.4075	0.5536	0.4221	0.5646	0.4265	0.5824	0.4093
AM2	0.5824	0.4093	0.5646	0.4265	0.5705	0.4289	0.5883	0.4111

- Tolerance ± 0.005 .

RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

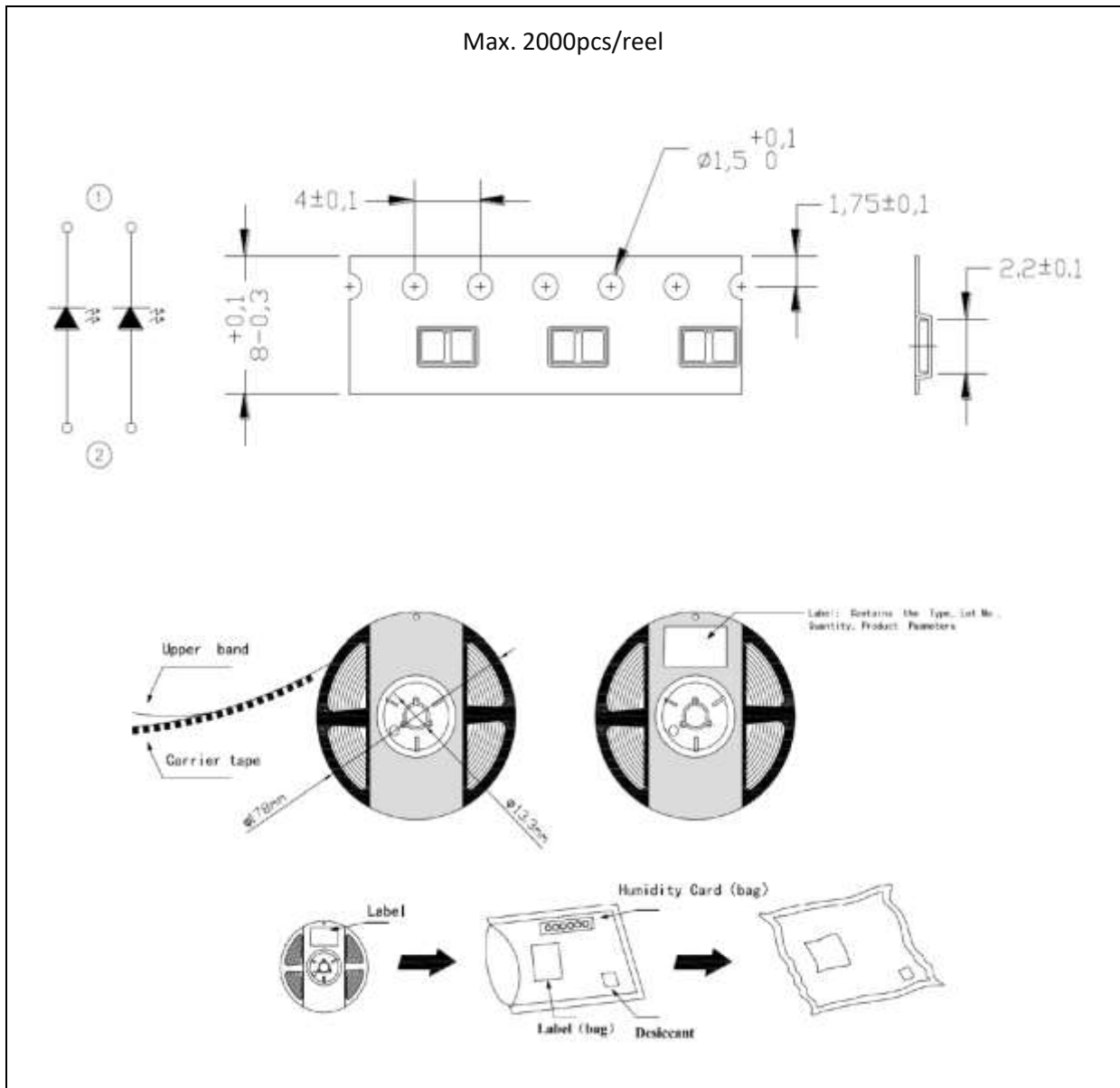


Note:

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 and apply baking at 60°C±5°C for 15hrs before use.

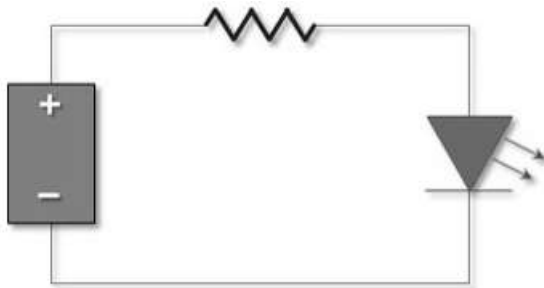
Baking:

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 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 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	31/10/2018	Datasheet set-up.