



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-PIN SMD
- ▶ 2034 0.52t
- ▶ Cool White (6500K) / Warm White (2700K)

NOD64S82Z



Release Date: 28 February 2023 Version: A1.0



2034 EMC Series

2034 EMC Series



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.):** 53/48lm@150mA
- **Colour:** Cool White/Warm White
- **Colour Temperature (CCT):** 6500/2700K
- **Viewing angle:** 120°
- **Materials:**
 - Die: InGaN/InGaN
 - Resin: Silicon (Yellow Diffused)
 - Package: EMC
- **Operating Temperature:** -40~+125°C
- **Storage Temperature:** -40~+125°C
- **Electrostatics Discharge:** 8000V
- **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
- Signaling
- Situation Lighting
- Decorative Lighting

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I _F	200/200*	mA
Pulse Forward Current (Duty 1/10, width≤100μS)	I _{PF}	300/300	mA
Power Dissipation	P _D	700	mW
Junction Temperature	T _J	150	°C
Electrostatic Discharge (HBM: ANSI/ESDA/JEDEC JS-001 (HBM, Class 3B))	ESD	8	kV
Thermal Resistance	R _{th(j-sp)}	27/27	°C/W
Operating Temperature	T _{OPR}	-40~+125	°C
Storage Temperature	T _{STG}	-40~+125	°C
Soldering Temperature	T _{SOL}	230/260 for 10S	°C

*in order of Cool White/Warm White

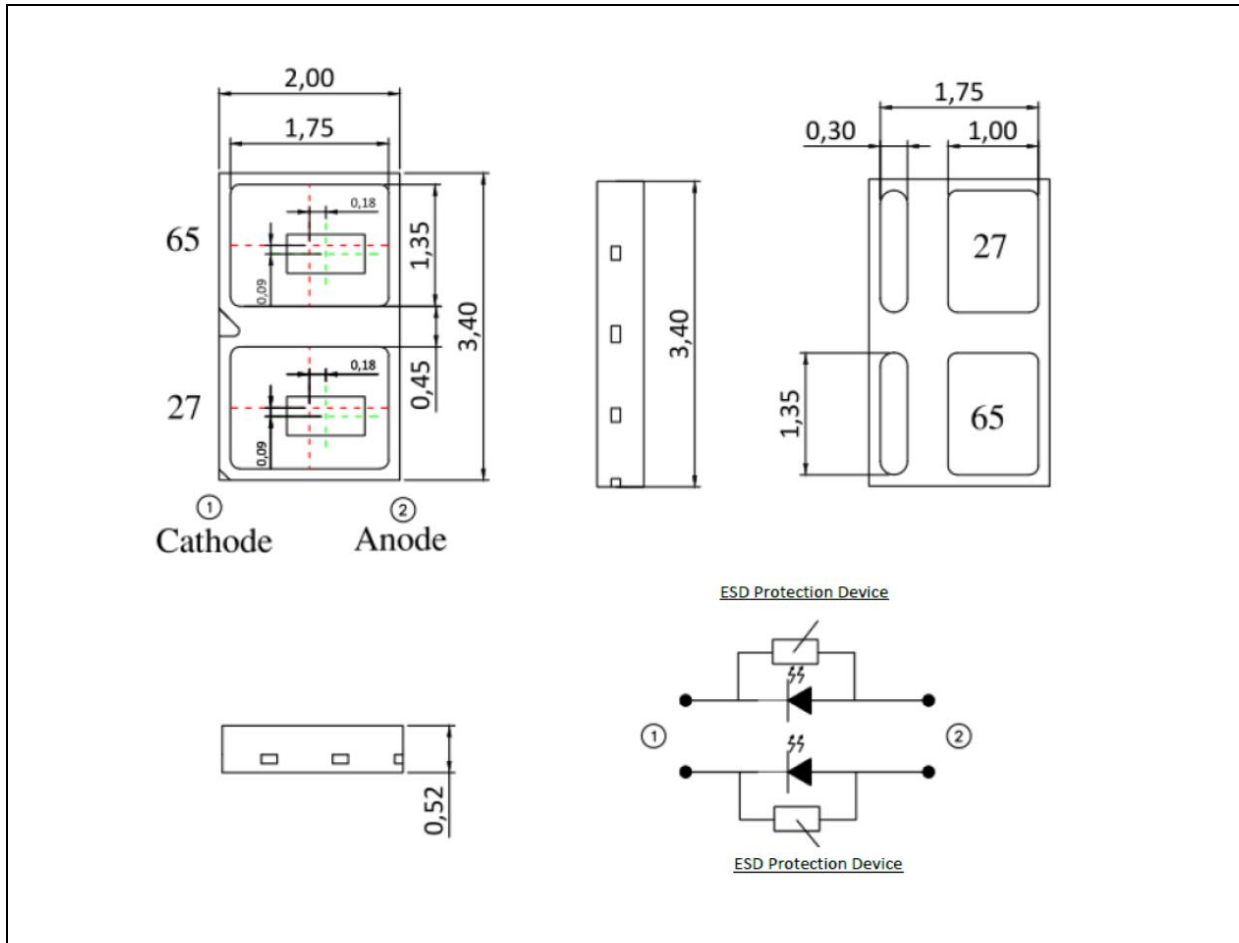
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V _F	3.0/3.0*	---/---	3.5/3.5	V	I _F =150mA
Luminous Flux	Φ _V	45/40	53/48	---/---	lm	I _F =150mA
Chromaticity Coordinates	X	---	0.3130/0.4582	---	---	I _F =150mA
	Y	---	0.3290/0.4099	---		
Colour Temperature	CCT	---/---	6500/2700	---/---	K	I _F =150mA
Viewing Angle	2θ _{1/2}	---	120/120	---	deg	I _F =150mA

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

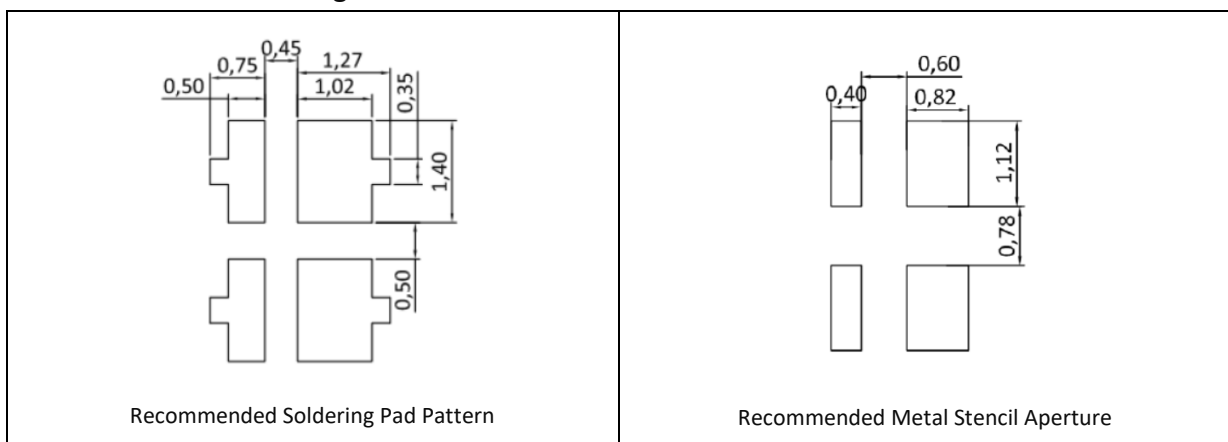
OUTLINE DIMENSION:

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

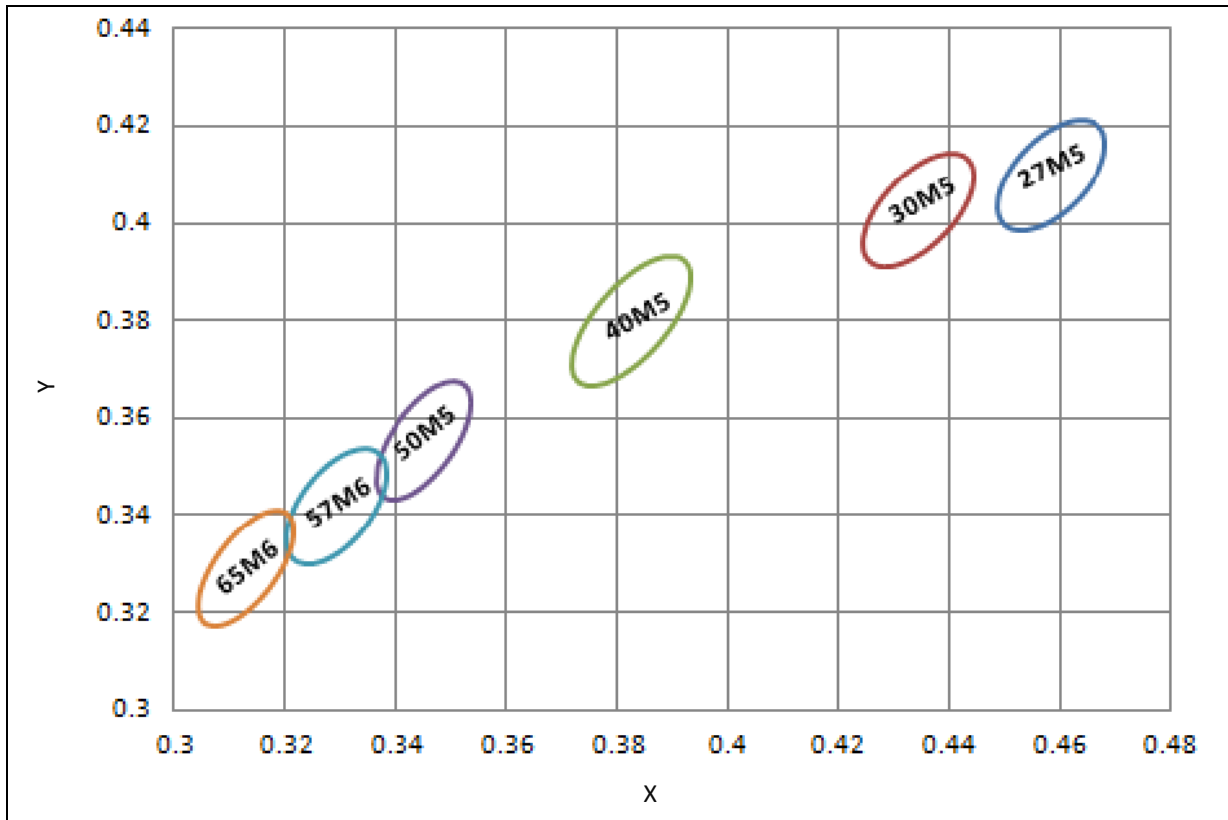
BINNING GROUPS:

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

Code		Min.	Max.	Unit
CW / WW	VA5	3.0	3.5	V

 Luminous Flux Classifications ($I_F = 150\text{mA}$):

Code		Min.	Max.	Unit
CW	1P	45	50	lm
	1Q	50	55	
	1R	55	60	
	1S	60	70	
	1W	70	75	
WW	1N	40	45	lm
	1P	45	50	
	1Q	50	55	
	1R	55	60	
	1S	60	65	

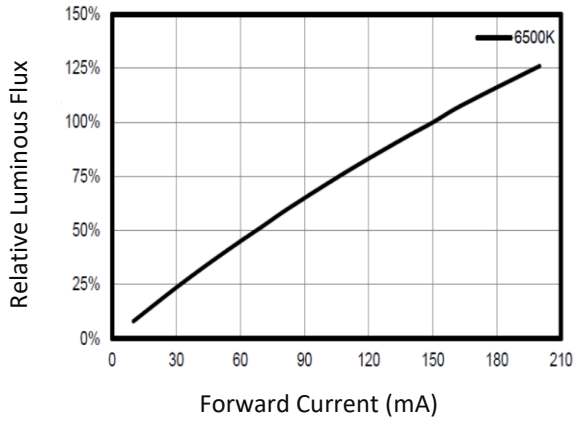
CIE CHROMATICITY DIAGRAM:

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

Code	Centre		Radius		Angle
	X	Y	a	b	Φ
65M5	0.3130	0.3290	0.01115	0.00475	58.34
27M5	0.4582	0.4099	0.01350	0.00700	53.42

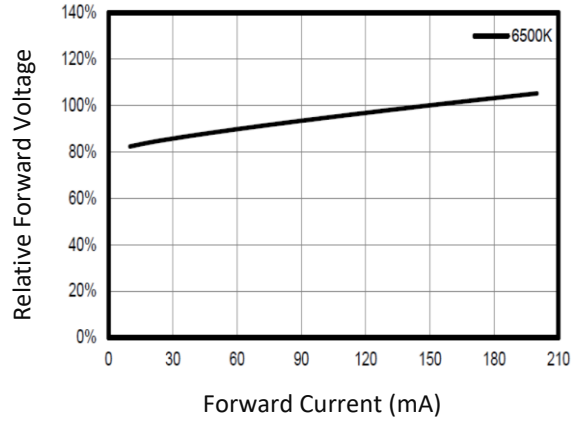
- Tolerance ± 0.005 .

ELECTRO-OPTICAL CHARACTERISTICS (6500K):

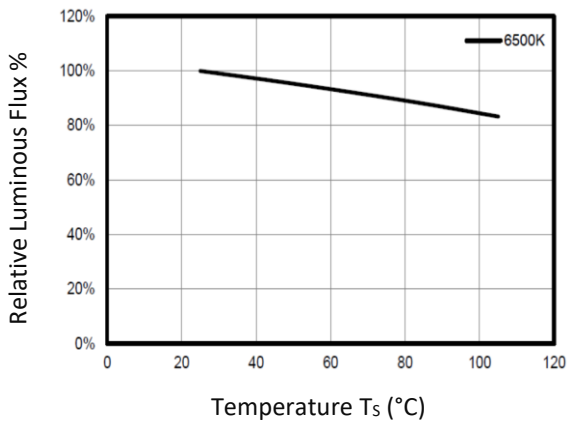
Relative Luminous Flux v.s. Forward Current



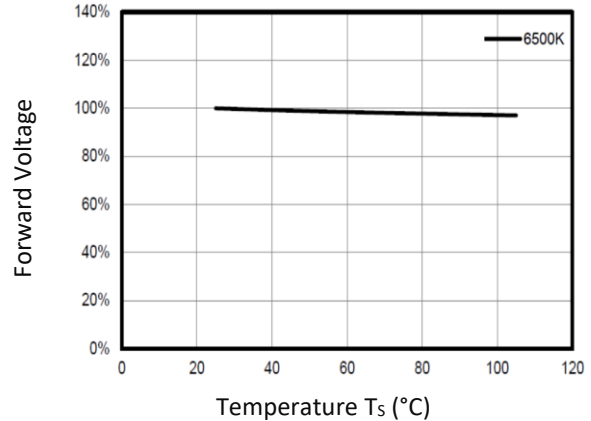
Forward Current v.s. Forward Voltage



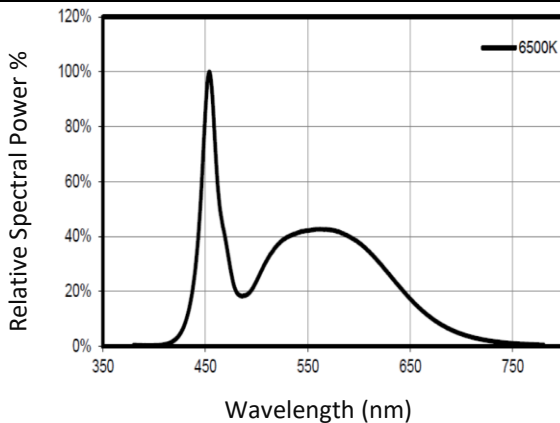
Relative Luminous Flux v.s. Temperature



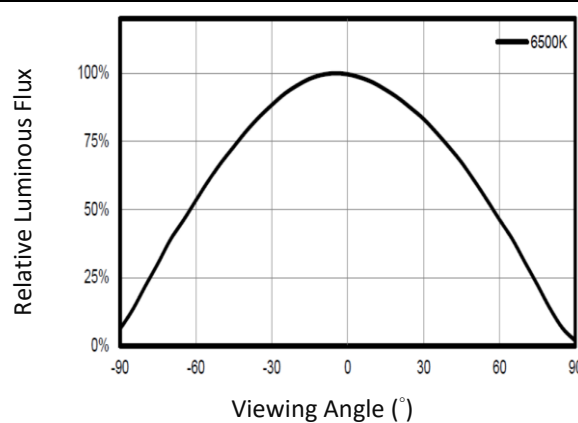
Forward Voltage v.s. Temperature



Relative Spectral Power v.s. Wavelength



Directive Radiation

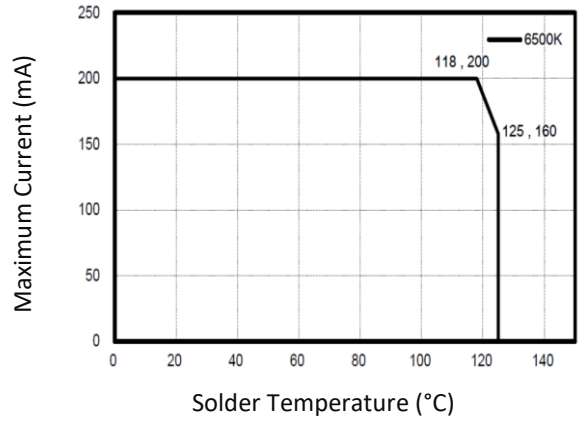


ELECTRO-OPTICAL CHARACTERISTICS (6500K):

Duty Ratio v.s. Allowable Forward Current

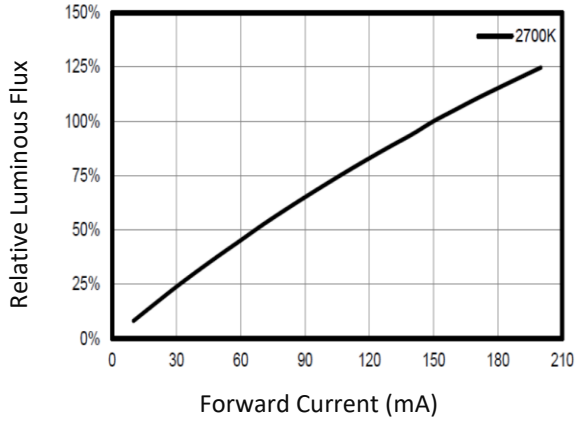


Forward Current Derating Curve

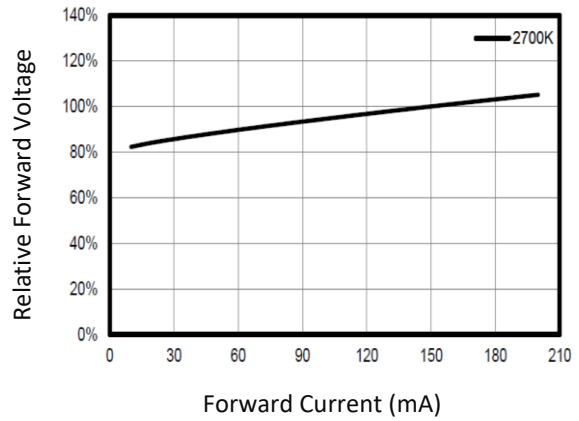


ELECTRO-OPTICAL CHARACTERISTICS (2700K):

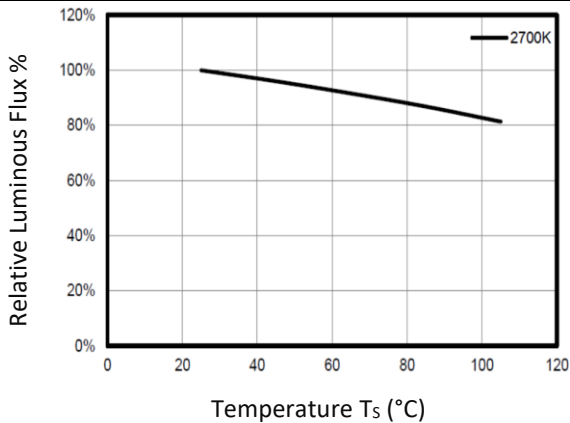
Relative Luminous Flux v.s. Forward Current



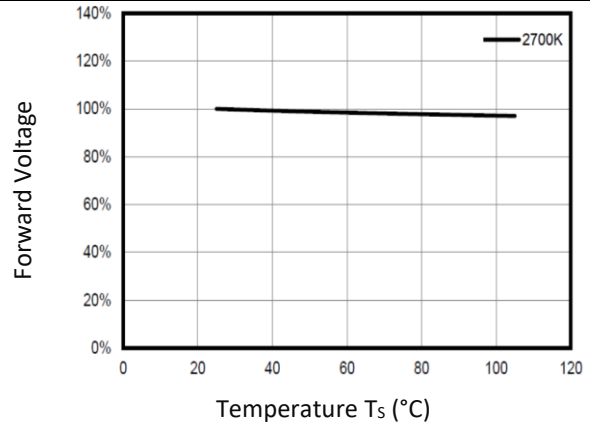
Forward Current v.s. Forward Voltage



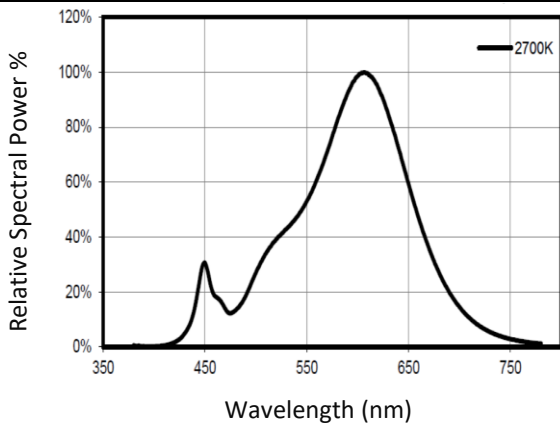
Relative Luminous Flux v.s. Temperature



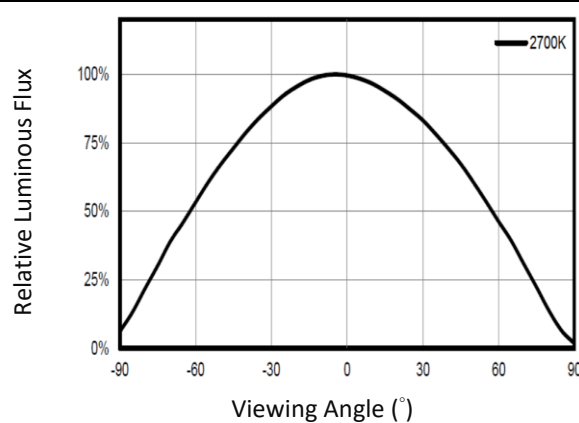
Forward Voltage v.s. Temperature



Relative Spectral Power v.s. Wavelength



Directive Radiation

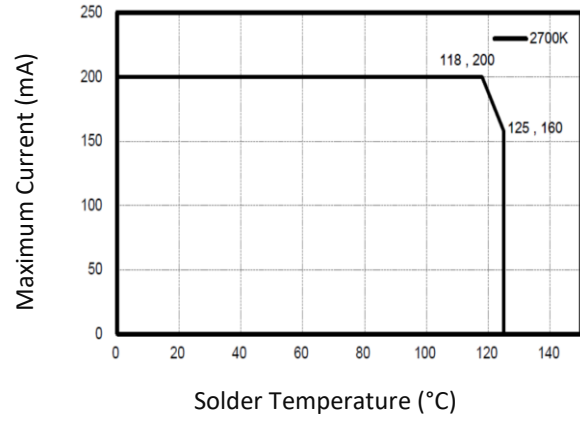


ELECTRO-OPTICAL CHARACTERISTICS (2700K):

Duty Ratio v.s. Allowable Forward Current

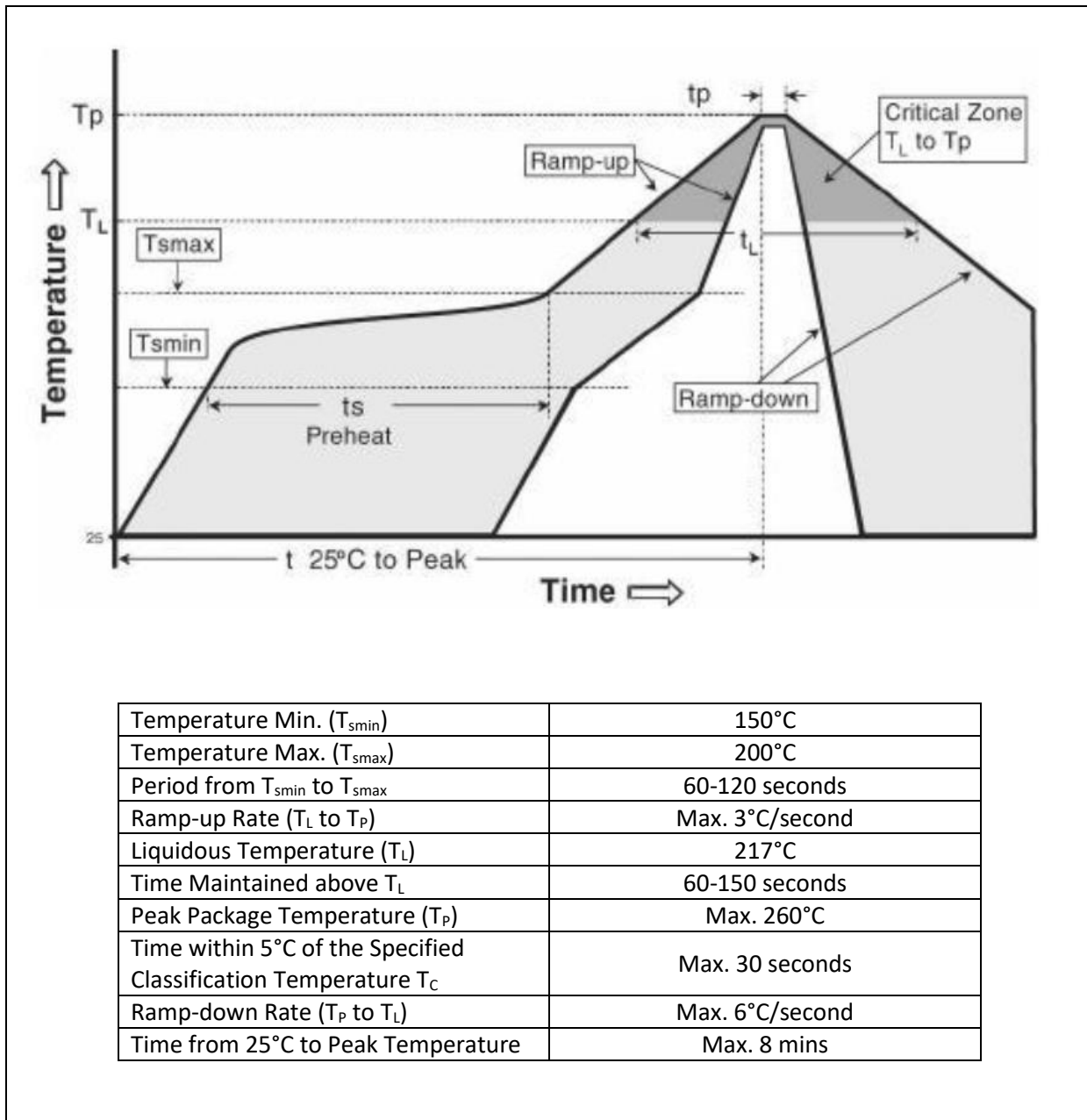


Forward Current Derating Curve



RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:

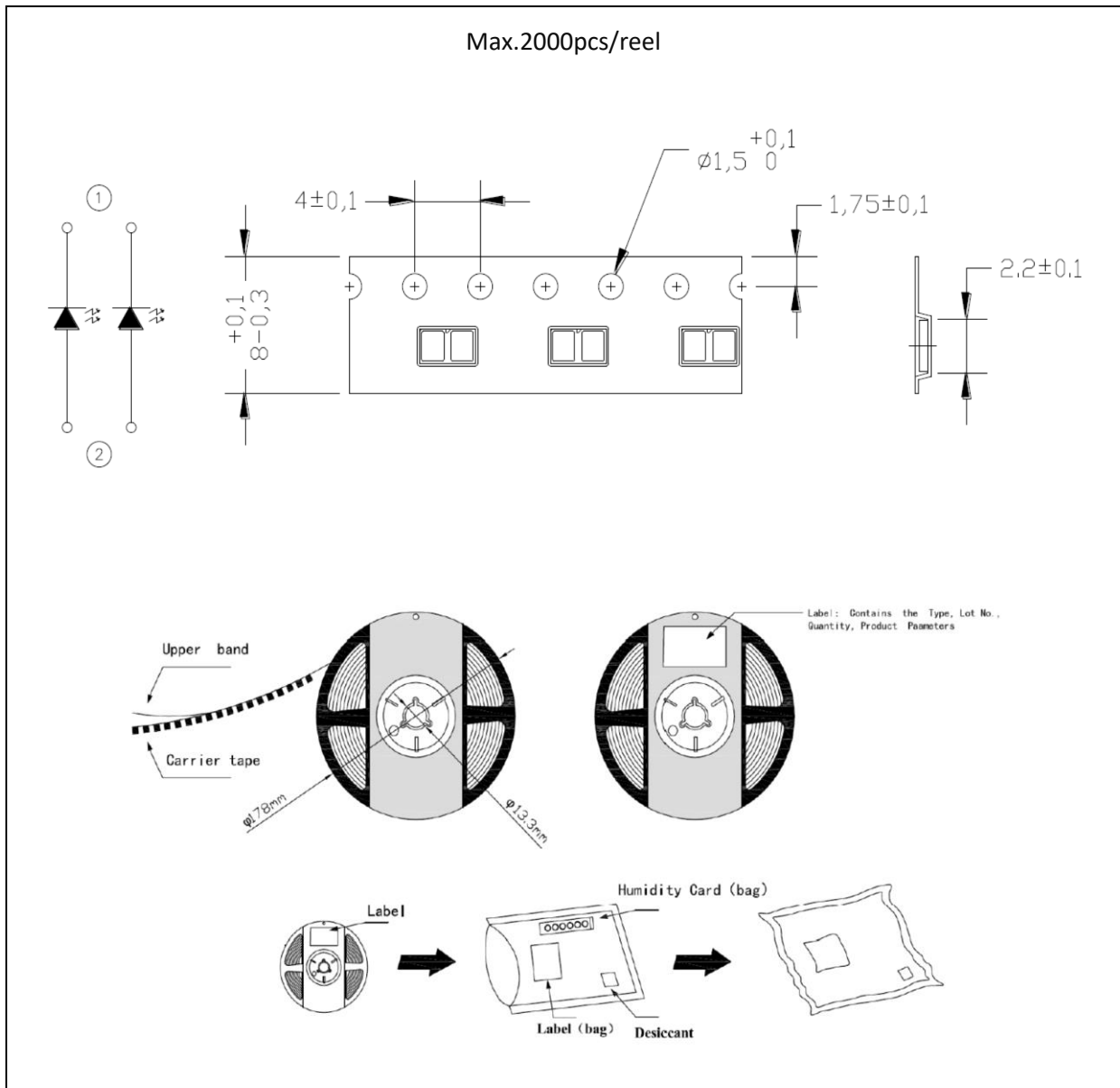


Note:

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 <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-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	28/02/2023	Datasheet set-up.