BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED !

ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

PRODUCT DATASHEET

- ▶ PLCC2 Top View
- ▶ 2835 0.70t Series
- ▶ Natural White 4500K

Release Date: 04 March 2025 Version: A1.1

N0W69S57

2835 0.70t Series

RoHS Compliant

FEATURES:

- **Package:** PLCC2 SMT Mid-Power Top View Package
- **Forward Current:** 60mA
- **Forward Voltage (typ.):** 3.2V
- **Luminous Flux (typ.):** 25lm@60mA
- **Colour:** Natural White
- **Colour Temperature (typ.):** 4500K
- **Viewing Angle:** 120°
- **Materials:**
  - Resin: Silicon (Yellow Diffused)
  - L/T Finish: Ag plated
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+85°C
- **Grouping Parameters:**
  - Forward Voltage
  - Luminous Flux
  - CIE Chromaticity
- **Soldering Methods:** Reflow
- **MSL Level:** 5a according to J-STD020
- **Packing:** 8mm tape with max.4000pcs /reel, ø178mm (7'')

APPLICATIONS:

- Indoor/Outdoor Lighting
- Commercial Lighting
- Architectural Lighting
- LED Backlight
- General Lighting
- Torch

CHARACTERISTICS:

Absolute Maximum Characteristics (T_a=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	60	mA
Pulse Forward Current Duty Factor 10%, Frequency 1kHz	I_{PF}	100	mA
Power Dissipation	P_D	0.2	W
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10	μA
Electrostatic Discharge (HBM)	ESD	1000	V
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-40~+85	°C
Soldering Temperature	T_{SOL}	260 for 5S	°C
Colour Rendering Index	CRI	min.80	---

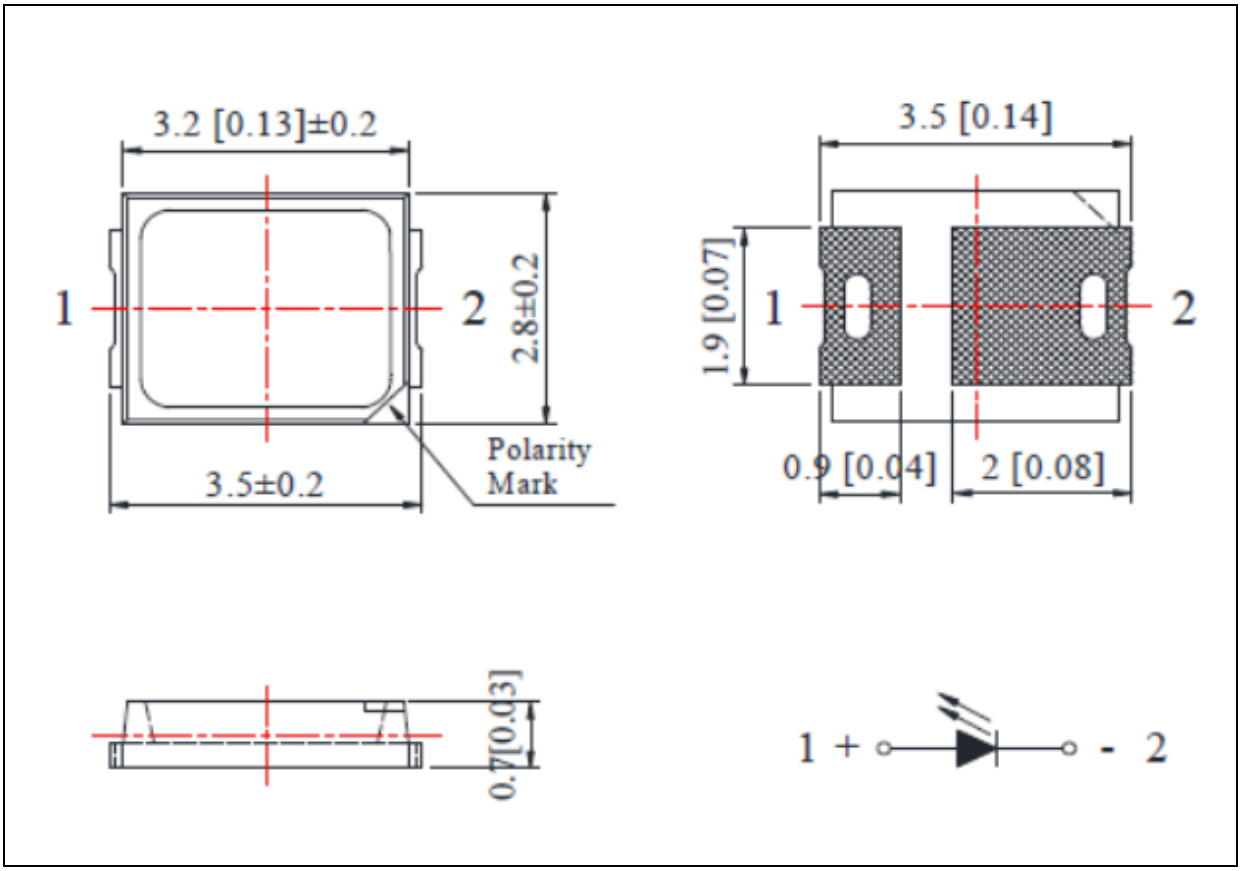
Electrical & Optical Characteristics (T_a=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	2.8	3.2	3.6	V	I_F=60mA
Luminous Flux	Φ_V	20	---	30	lm	I_F=60mA
Chromaticity Coordinates	X	---	0.3700	---	---	I_F=60mA
	Y	---	0.3700	---		
Colour Temperature	CCT	---	4500	---	K	I_F=60mA
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	I_F=60mA

1. Luminous intensity (I_V) ±10%, Forward Voltage (V_F) ±0.1V, Viewing angle($2\theta_{1/2}$) ±5°

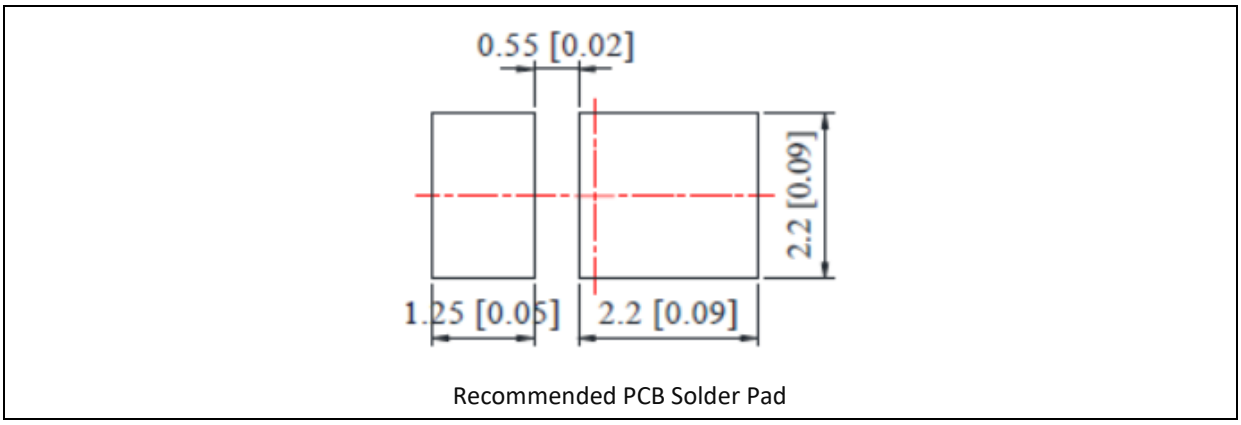
OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance ±0.13mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



Recommended PCB Solder Pad

1. Dimensions are in millimetre (mm).
2. Tolerance ±0.12mm with angle tolerance ±0.5°.

BINNING GROUPS:

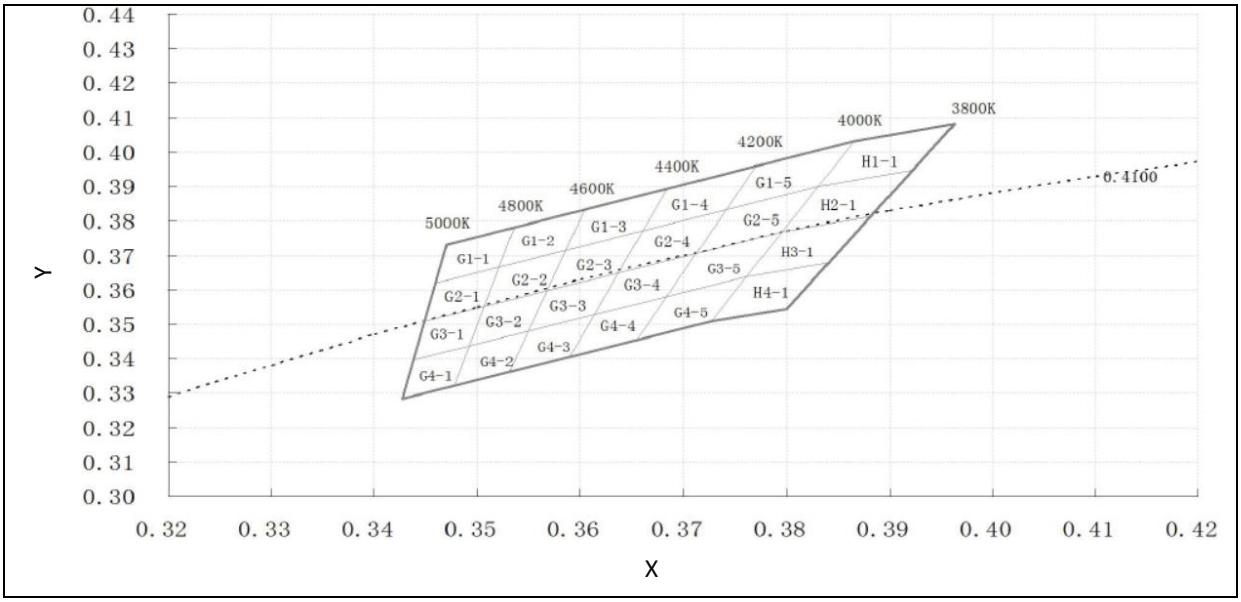
Forward Voltage Classifications (I_F = 60mA):

Code	Min.	Max.	Unit
W5M-QXX	2.8	3.6	V

Luminous Flux Classifications (I_F = 60mA):

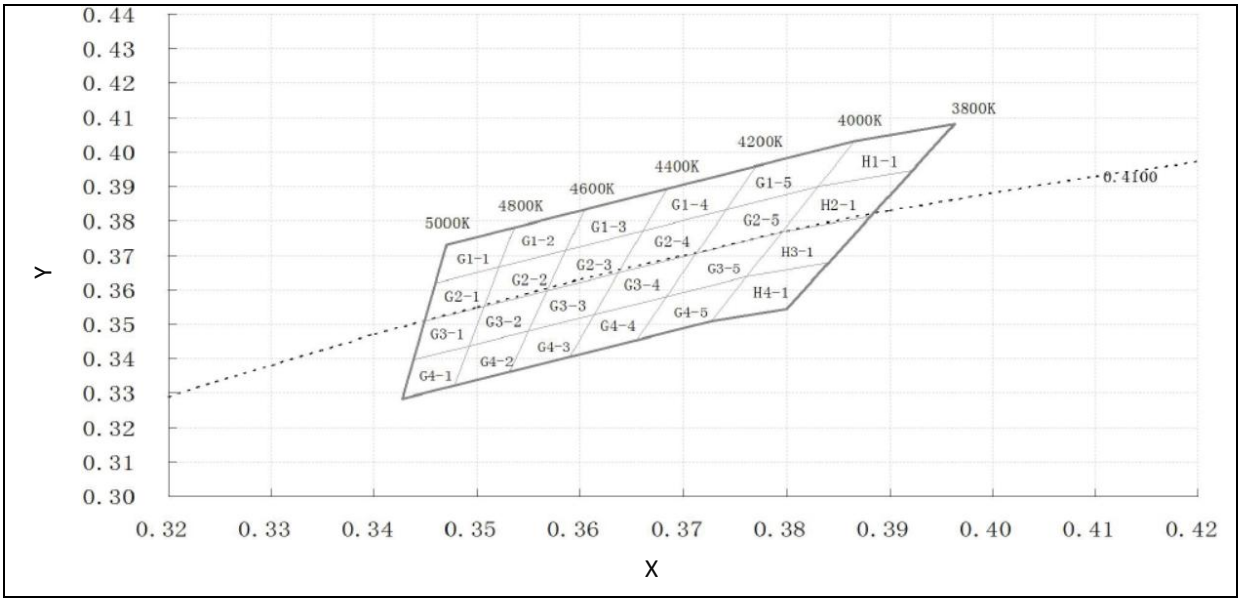
Code	Min.	Max.	Unit
W5M-Q20	20	22	lm
W5M-Q22	22	24	
W5M-Q24	24	26	
W5M-Q26	26	28	
W5M-Q28	28	30	

CIE CHROMATICITY DIAGRAM:



Chromaticity Coordinates Classifications (I_F = 60mA):

	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
G1-1	0.3460	0.3620	0.3520	0.3660	0.3530	0.3780	0.3470	0.3730
G2-1	0.3450	0.3510	0.3510	0.3560	0.3520	0.3660	0.3460	0.3620
G3-1	0.3440	0.3400	0.3500	0.3440	0.3510	0.3560	0.3450	0.3510
G4-1	0.3430	0.3280	0.3480	0.3320	0.3500	0.3440	0.3440	0.3400
G1-2	0.3520	0.3660	0.3590	0.3710	0.3600	0.3830	0.3530	0.3780
G2-2	0.3510	0.3560	0.3570	0.3590	0.3590	0.3710	0.3520	0.3660
G3-2	0.3500	0.3440	0.3550	0.3480	0.3570	0.3590	0.3510	0.3560
G4-2	0.3480	0.3320	0.3530	0.3360	0.3550	0.3480	0.3500	0.3440
G1-3	0.3590	0.3710	0.3660	0.3770	0.3680	0.3890	0.3600	0.3830
G2-3	0.3570	0.3590	0.3640	0.3650	0.3660	0.3770	0.3590	0.3710
G3-3	0.3550	0.3480	0.3610	0.3520	0.3640	0.3650	0.3570	0.3590
G4-3	0.3530	0.3360	0.3590	0.3400	0.3610	0.3520	0.3550	0.3480
G1-4	0.3660	0.3770	0.3740	0.3830	0.3770	0.3960	0.3680	0.3890
G2-4	0.3640	0.3650	0.3710	0.3700	0.3740	0.3830	0.3660	0.3770
G3-4	0.3610	0.3520	0.3680	0.3570	0.3710	0.3700	0.3640	0.3650
G4-4	0.3590	0.3400	0.3650	0.3450	0.3680	0.3570	0.3610	0.3520

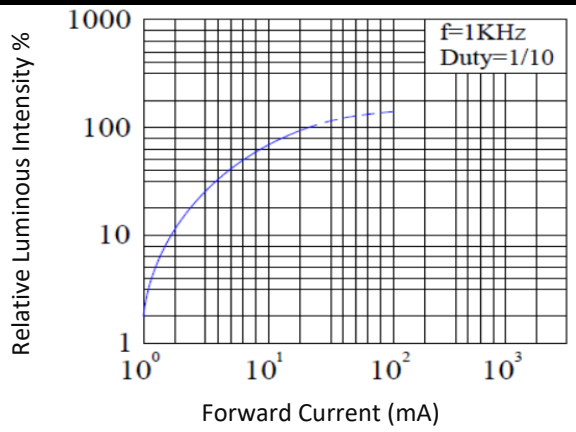


Chromaticity Coordinates Classifications (I_F = 60mA):

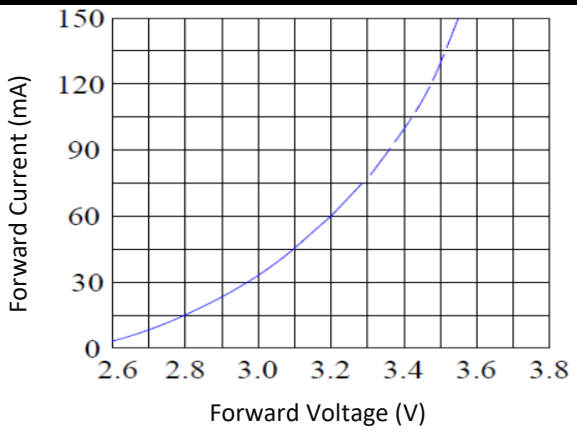
	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
G1-5	0.3740	0.3830	0.3840	0.3900	0.3870	0.4030	0.3770	0.3960
G2-5	0.3710	0.3700	0.3800	0.3770	0.3840	0.3900	0.3740	0.3830
G3-5	0.3680	0.3570	0.3760	0.3630	0.3800	0.3770	0.3710	0.3700
G4-5	0.3650	0.3450	0.3730	0.3510	0.3760	0.3630	0.3680	0.3570
H1-1	0.3830	0.3900	0.3920	0.3940	0.3960	0.4080	0.3870	0.4030
H2-1	0.3800	0.3770	0.3880	0.3810	0.3920	0.3940	0.3830	0.3900
H3-1	0.3760	0.3630	0.3840	0.3670	0.3880	0.3810	0.3800	0.3770
H4-1	0.3730	0.3510	0.3800	0.3540	0.3840	0.3670	0.3760	0.3630

ELECTRO-OPTICAL CHARACTERISTICS:

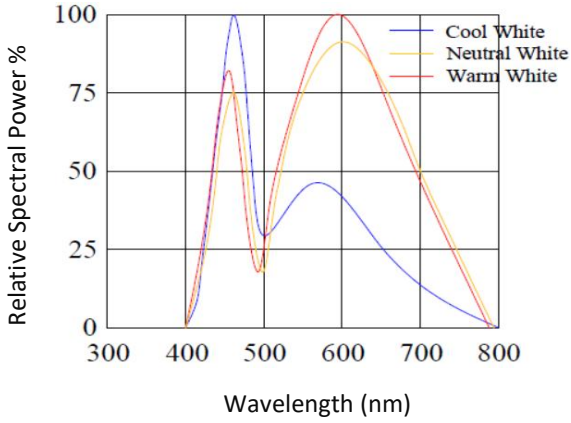
Relative Luminous Intensity v.s. Forward Current



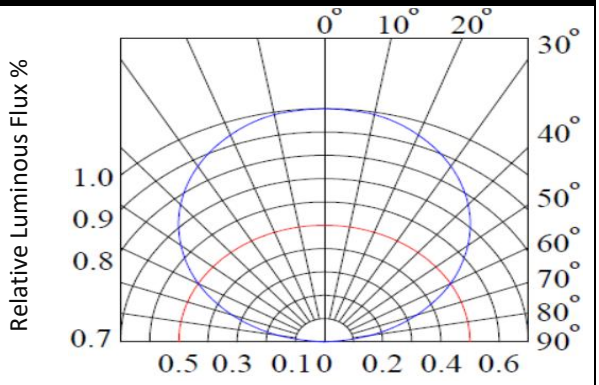
Forward Current v.s. Forward Voltage



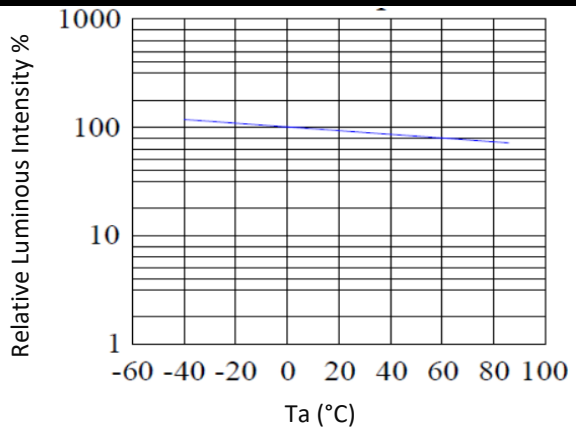
Relative Spectral Power v.s. Wavelength



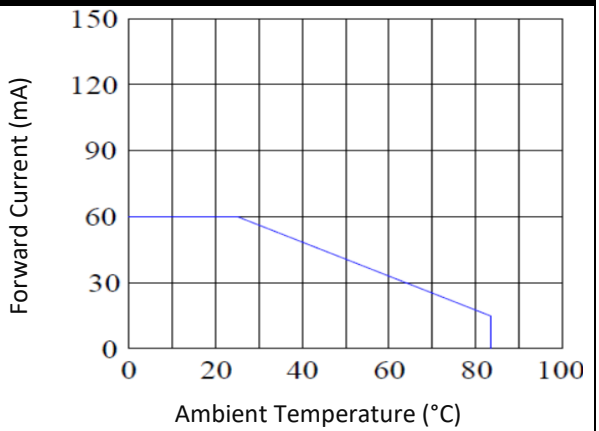
Directive Radiation



Relative Luminous Intensity v.s. Temperature

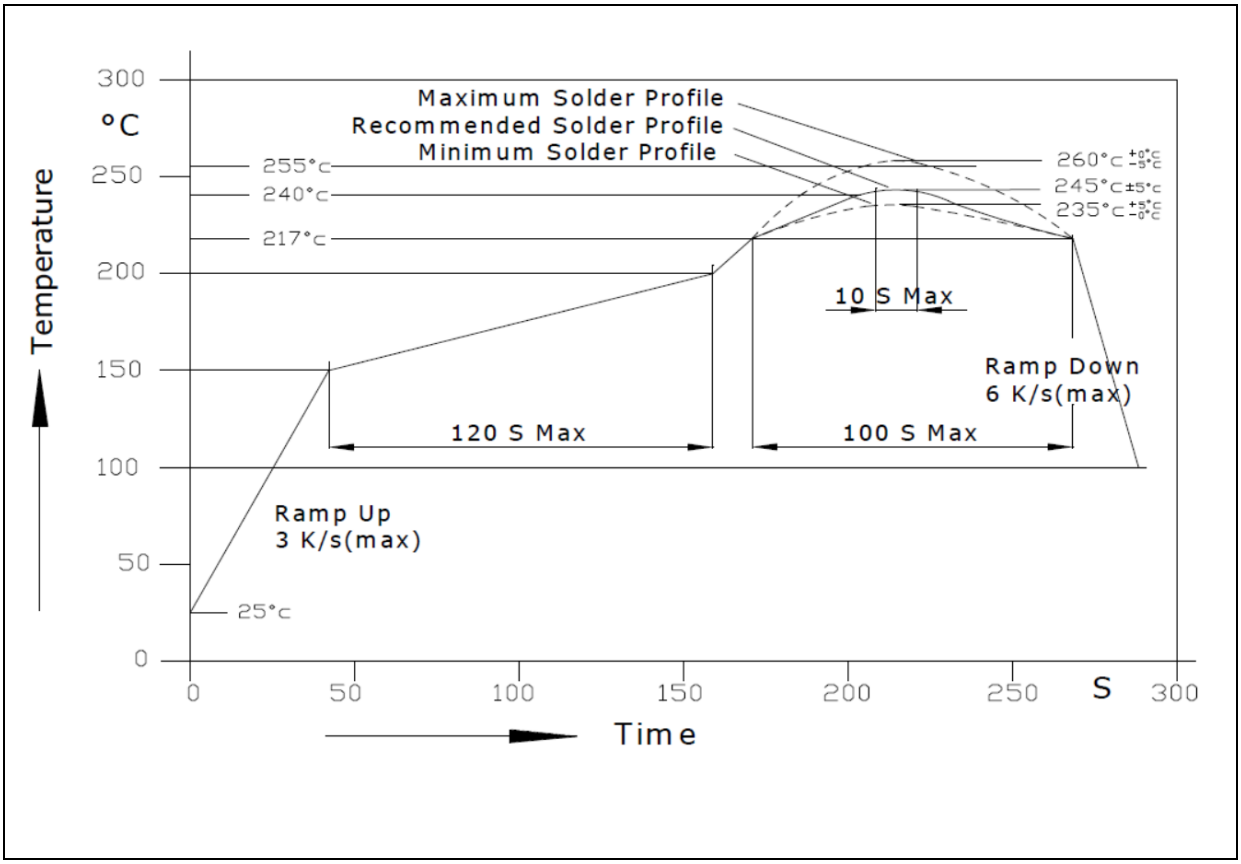


Forward Current Derating Curve



RECOMMENDED SOLDERING PROFILE:

Reflow Lead-free Solder:



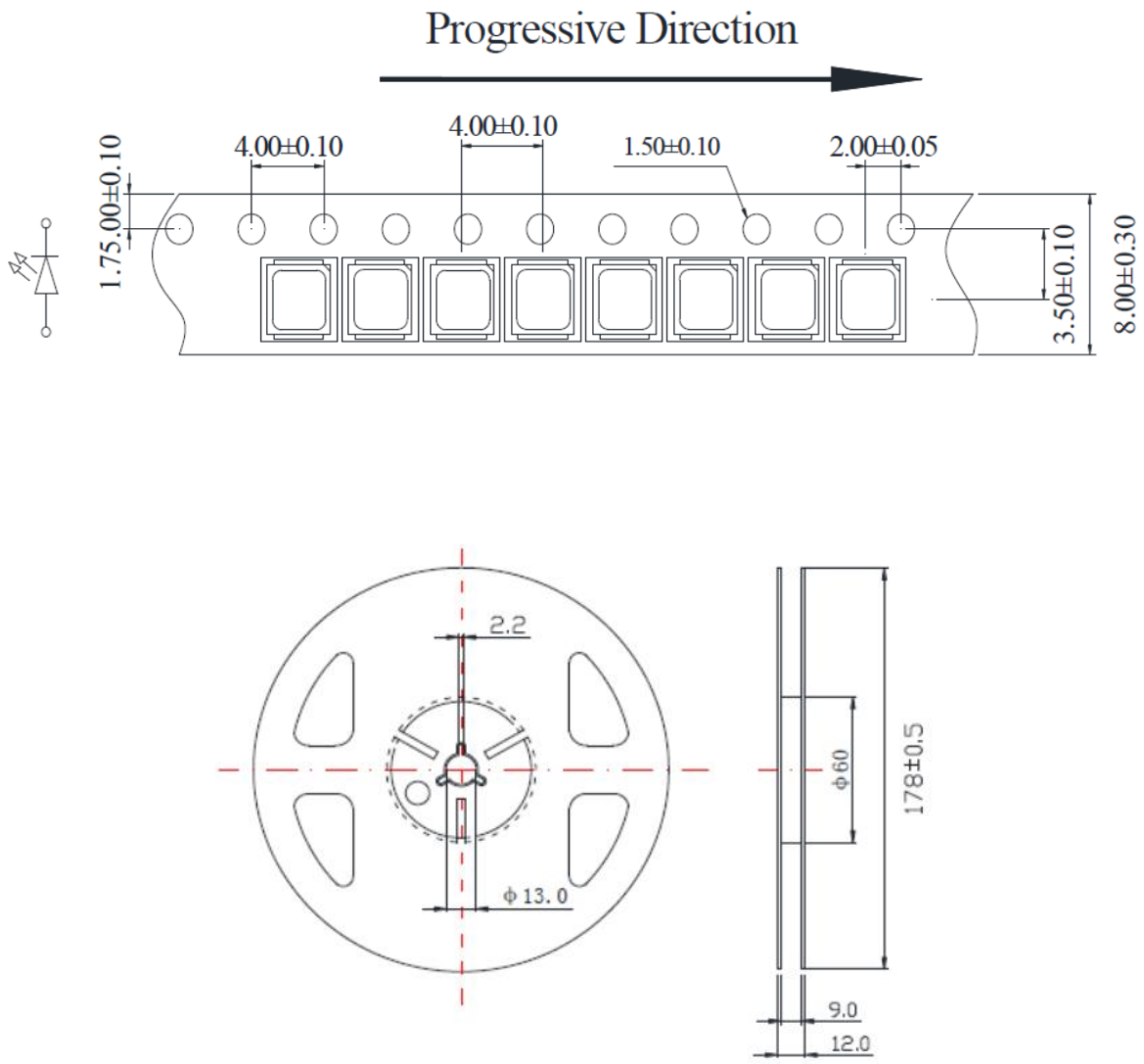
Note:

1. Maximum reflow soldering: 2 times.
2. The recommended reflow temperature is 240°C. The maximum soldering temperature should be limited to 260°C.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

PACKING SPECIFICATION:

Reel Dimension:

Max.4000pcs/reel



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 24 hours. Otherwise, they should be kept in a damp-proof box with descanting agent <10% R.H. and apply baking before use.

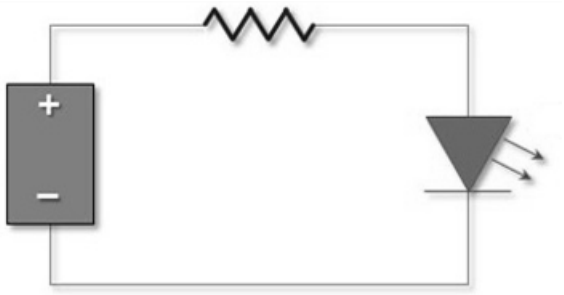
Baking:

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-electrosatic glove is recommended when handing 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	22/03/2022	Datasheet set-up.
A1.1	03/03/2025	New datasheet format.