



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

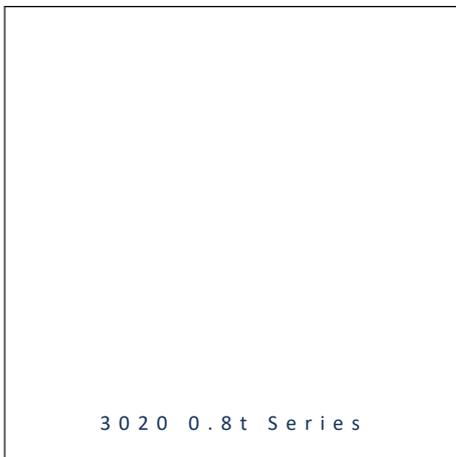


- ▶ PLCC2 SMD
- ▶ 3020HC 0.8t Series
- ▶ Natural White (5000K)

NOW58S33 (CRI 90)



Release Date: 29 March 2021 Version: A1.0



3020 0.8t Series

3020 0.8t Series

RoHS
Compliant



FEATURES:

- **Package:** PLCC2 White Top View SMD Package
- **Forward Current:** 60mA
- **Forward Voltage (typ.):** 3.2V
- **Luminous Flux (typ.):** 16lm@60mA
- **Colour:** Natural White
- **CCT (typ.):** 5000K
- **Viewing angle:** 120°
- **Materials:**
 - Die: InGaN
 - Resin: Silicon (Yellow Diffused)
 - L/T Finish: Ag
- **Operating Temperature:** -20~+80°C
- **Storage Temperature:** -30~+100°C
- **Grouping parameters:**
 - Forward Voltage
 - Luminous Flux
 - CIE Chromaticity
- **Soldering methods:** IR Reflow Soldering
- **Preconditioning:** MSL3 according to J-STD020
- **Packing:** 8mm tape with max.2000/reel, ø180mm (7")

APPLICATIONS:

- LCD Back Light
- Indicator
- Switch Lights
- General Lighting
- Special Lighting

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I _F	60	mA
Pulse Forward Current (Duty 1/10 @10KHz)	I _{PF}	100	mA
Reverse Current @5V	I _R	50	μA
Power Dissipation	P _D	216	mW
Electrostatic Discharge (HBM)	ESD	500	V
Operating Temperature	T _{OPR}	-20~+80	°C
Storage Temperature	T _{STG}	-30~+100	°C
Colour Rendering Index	CRI	93	---

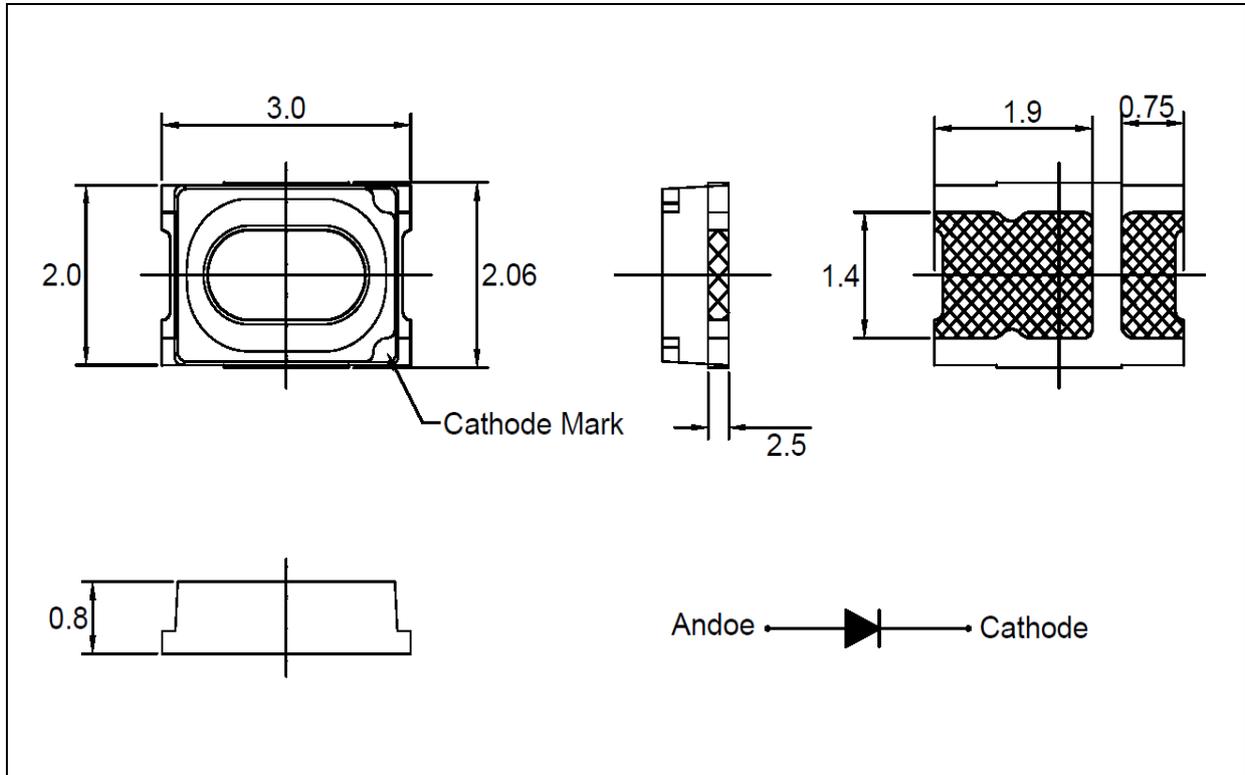
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V _F	2.8	---	3.6	V	I _F =60mA
Luminous Flux	Φ _V	14	16	---	lm	I _F =60mA
Chromaticity Coordinates	X	0.3366	---	0.3551	---	I _F =60mA
	Y	0.3369	---	0.3760		
Colour Temperature	CCT	4745	5000	5310	K	I _F =60mA
Viewing Angle	2θ _{1/2}	---	120	---	deg	I _F =60mA

1. Luminous intensity (Φ_V) ±5%, Forward Voltage (V_F) ±0.05V, Viewing angle(2θ_{1/2}) ±10°

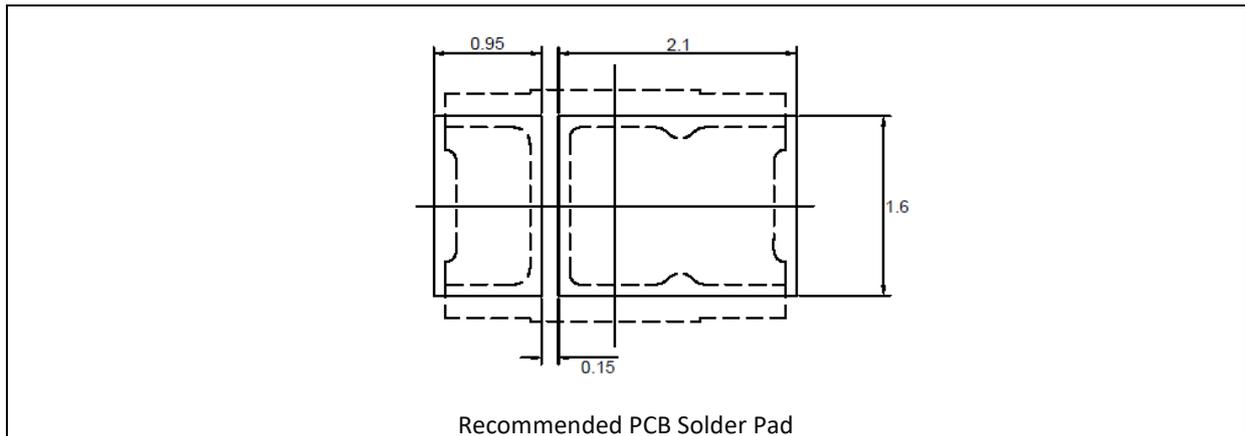
OUTLINE DIMENSION:

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 $\pm 0.5^\circ$.

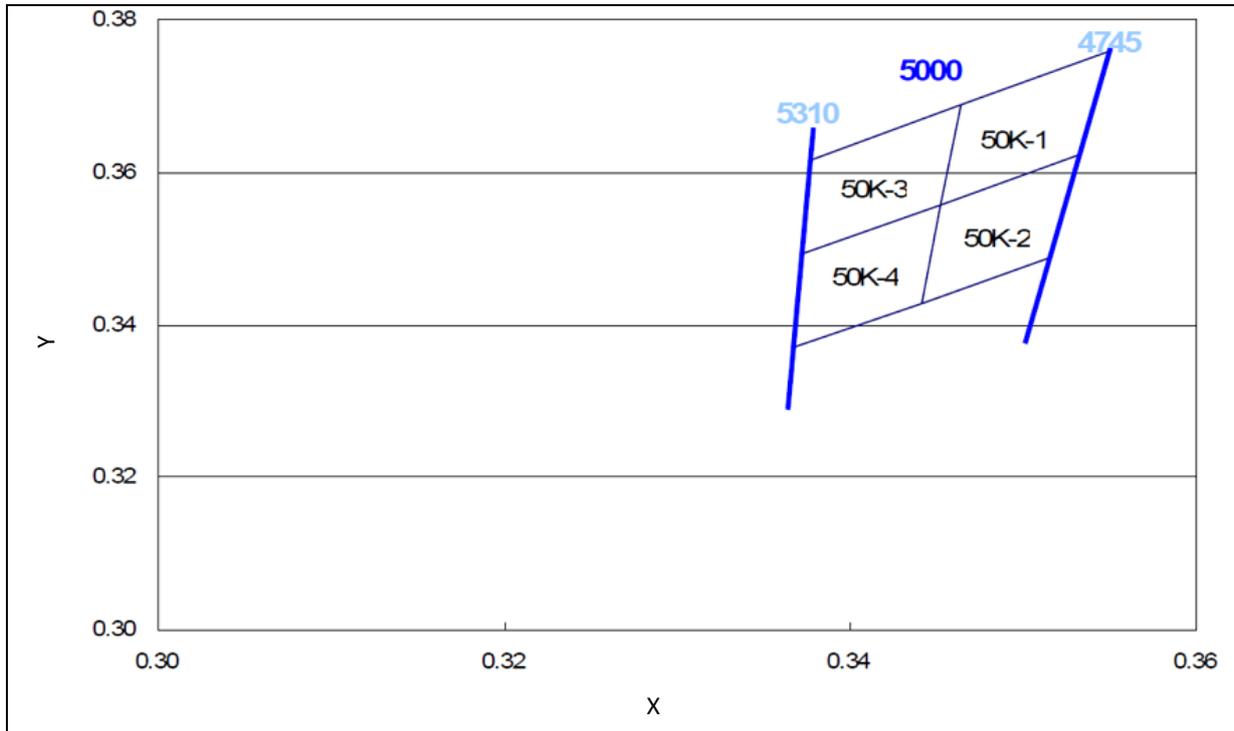
BINNING GROUPS:

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

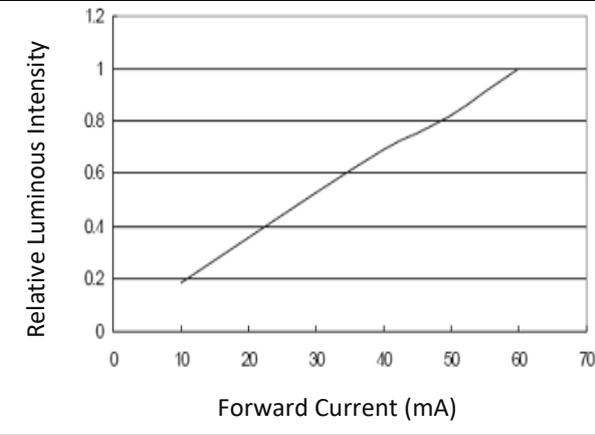
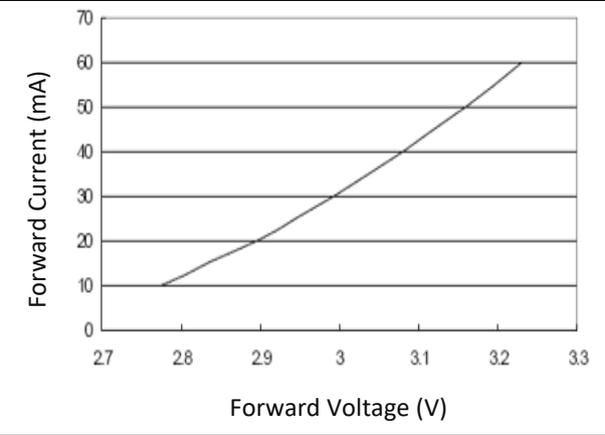
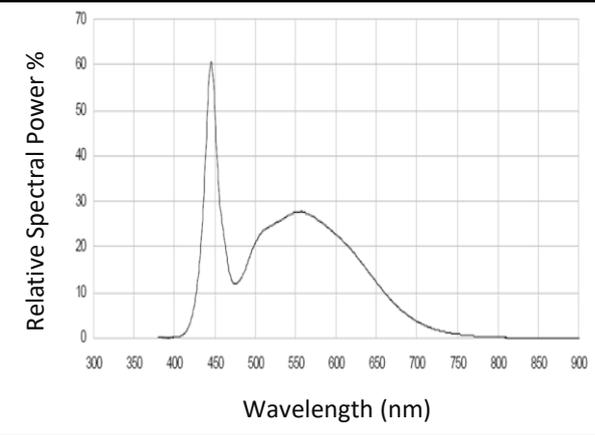
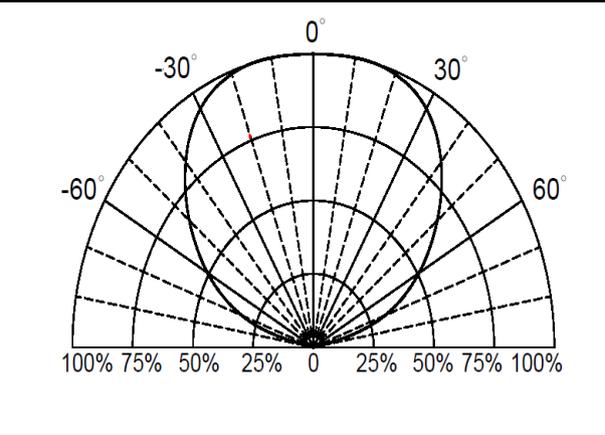
Code	Min.	Max.	Unit
1	2.8	2.9	V
2	2.9	3.0	
3	3.0	3.1	
4	3.1	3.2	
5	3.2	3.3	
6	3.3	3.4	
7	3.4	3.5	
8	3.5	3.6	

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

Code	Min.	Max.	Unit
F14D	14	16	lm
F16D	16	18	
F18D	18	20	
F20D	20	22	

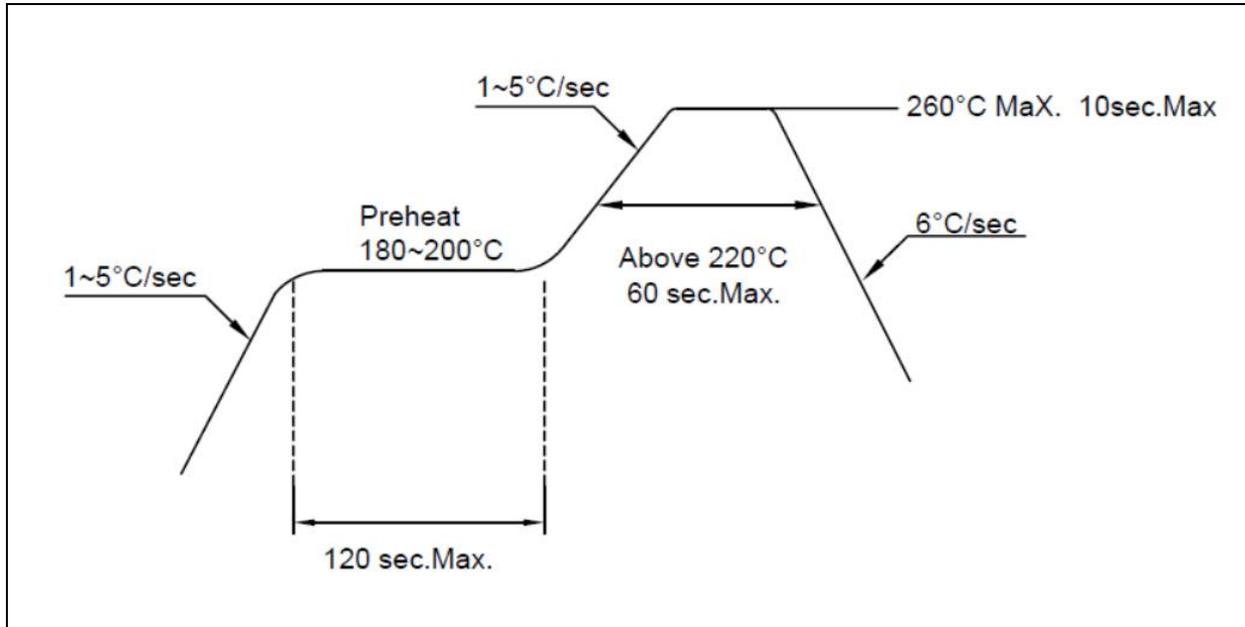
CIE CHROMATICITY DIAGRAM:

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

	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
50K-1	0.3551	0.3760	0.3464	0.3688	0.3452	0.3558	0.3533	0.3642
50K-2	0.3533	0.3624	0.3452	0.3558	0.3441	0.3428	0.3515	0.3487
50K-3	0.3464	0.3688	0.3376	0.3616	0.3371	0.3493	0.3452	0.3558
50K-4	0.3452	0.3558	0.3371	0.3493	0.3366	0.3369	0.3441	0.3428

ELECTRO-OPTICAL CHARACTERISTICS:
Relative Luminous Intensity v.s. Forward Current

Forward Current v.s. Forward Voltage

Relative Spectral Power v.s. Wavelength

Directive Radiation


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.

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 month 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.

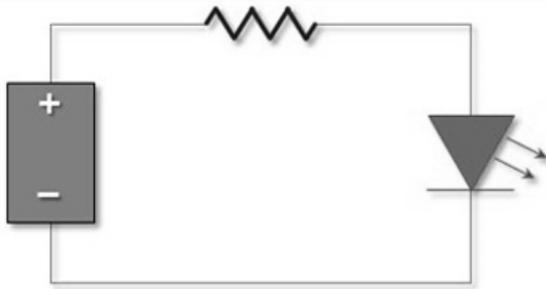
Baking:

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 15hrs 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	13/04/2014	Datasheet set-up.
A1.1	29/03/2021	New datasheet format.