



**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
- ▶ 2835 0.5W Series
- ▶ Red (625nm)

NOR15S51



Release Date: 26 November 2014 Version: A1.0



### 2835 0.5W Series

**RoHS**  
Compliant



#### FEATURES:

- **Package:** PLCC2 Mid Power White SMT Package
- **Forward Current:** 150mA
- **Forward Voltage (typ.):** 2.4V
- **Luminous Flux (typ.):** 22lm @150mA
- **Colour:** Red
- **Wavelength:** 625nm
- **Viewing angle:** 120°
- **Materials:**
  - Die: AlGaInP
  - Resin: Silicon (Water Clear)
  - L/T Finish: Ag plated
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
  - Forward voltage
  - Luminous flux
  - Dominant Wavelength
- **Soldering methods:** IR Reflow
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 12mm tape with 2000/reel, ø180mm (7'')

#### APPLICATIONS:

- Decorative Lighting
- Backlighting
- Indicator
- Display

## CHARACTERISTICS:

### Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	$I_F$	150	mA
Peak Forward Current (Duty 1/10; width 10KHz)	$I_{FP}$	300	mA
Reverse Current @5V	$I_R$	10	$\mu$ A
Power Dissipation	$P_D$	420	mW
Electrostatic Discharge	ESD	2000	V
Junction Temperature	$T_j$	115	°C
Operating Temperature	$T_{OPR}$	-40~+85	°C
Storage Temperature	$T_{STG}$	-40~+100	°C
Soldering Temperature	$T_{SD}$	260	°C

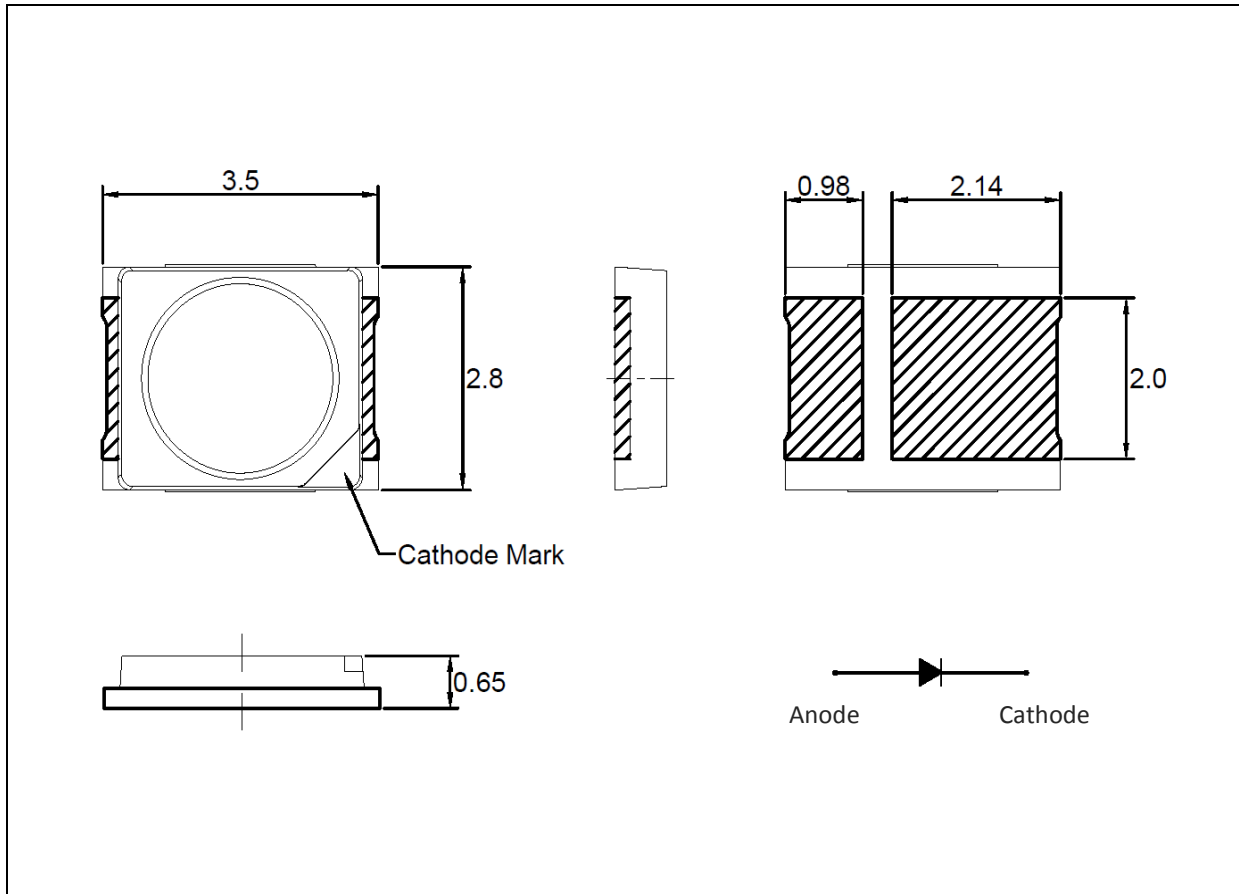
### Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	$V_F$	1.7	2.4	2.8	V	$I_F=150mA$
Luminous Flux	$\Phi_V$	18	22	26	lm	$I_F=150mA$
Dominant Wavelength	$\lambda_D$	620	625	630	nm	$I_F=150mA$
Spectral Half Width	$\Delta\lambda$	---	20	---	nm	$I_F=150mA$
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	$I_F=150mA$

1. Luminous intensity ( $I_v$ )  $\pm 15\%$ , Forward Voltage ( $V_f$ )  $\pm 0.1V$ , Viewing angle( $2\theta_{1/2}$ )  $\pm 5\%$
2. IS standard testing

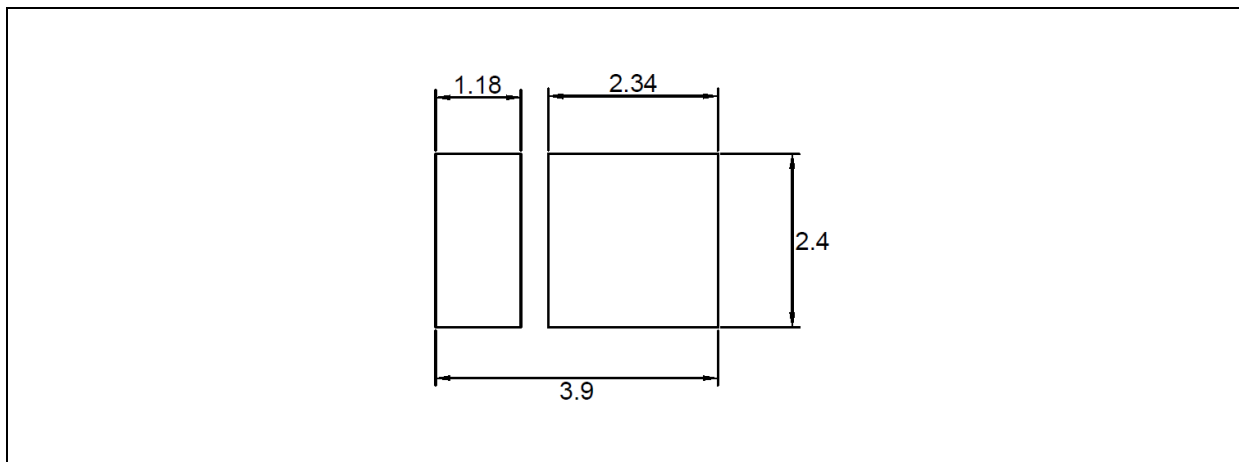
**OUTLINE DIMENSION:**

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.2$ mm, unless otherwise noted.

Recommended Soldering Pad Dimension:



1. Dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.1$ mm with angle tolerance  $\pm 0.5^\circ$ .

**BINNING GROUPS:**


---

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

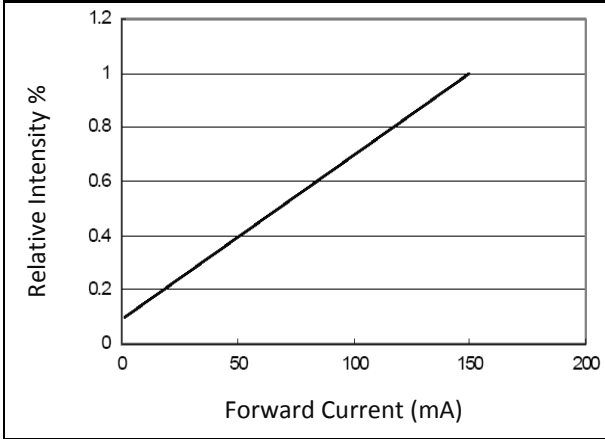
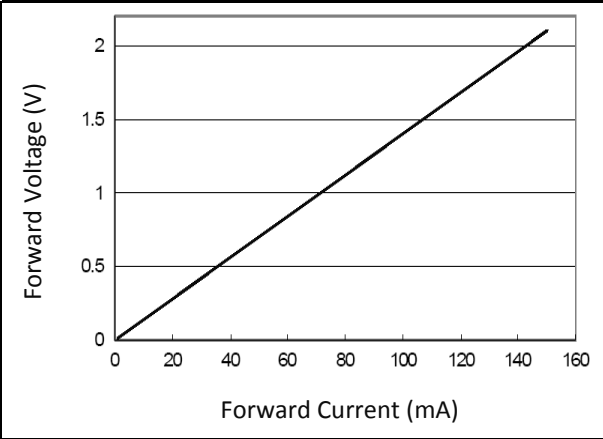
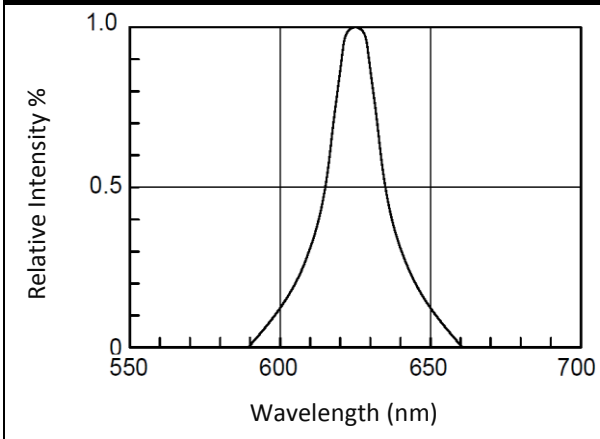
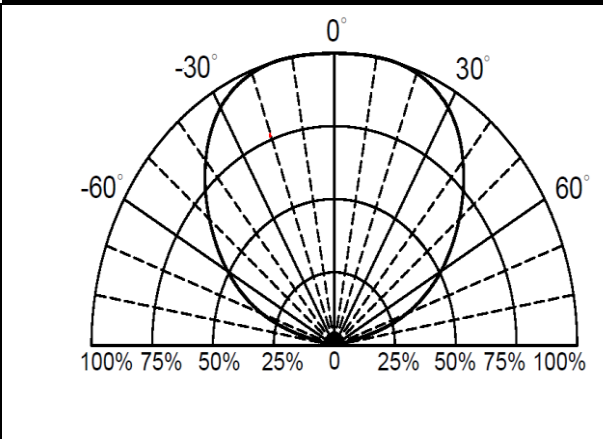
Code	Min.	Max.	Unit
B	1.7	1.8	V
C	1.8	1.9	
D	1.9	2.0	
E	2.0	2.1	
F	2.1	2.2	
G	2.2	2.3	
H	2.3	2.4	
I	2.4	2.5	
J	2.5	2.6	
K	2.6	2.7	
L	2.7	2.8	

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

Code	Min.	Max.	Unit
F18D	18	20	lm
F20D	20	22	
F22D	22	24	
F24D	24	26	

 Dominant Wavelength Classifications ( $I_F = 150\text{mA}$ ):

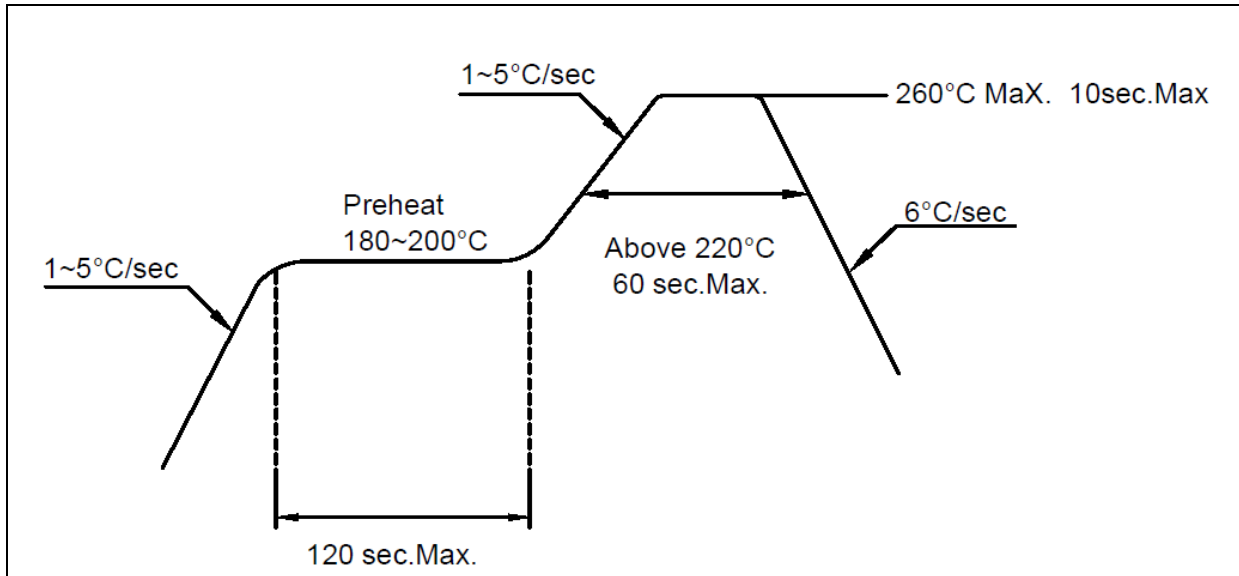
Code	Min.	Max.	Unit
D	620	625	nm
E	625	630	

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

**Forward Voltage v.s. Forward Current**

**Relative Intensity v.s. Wavelength**

**Directive Radiation**


## RECOMMENDED SOLDERING PROFILE:

---

IR Reflow Lead-free Solder:

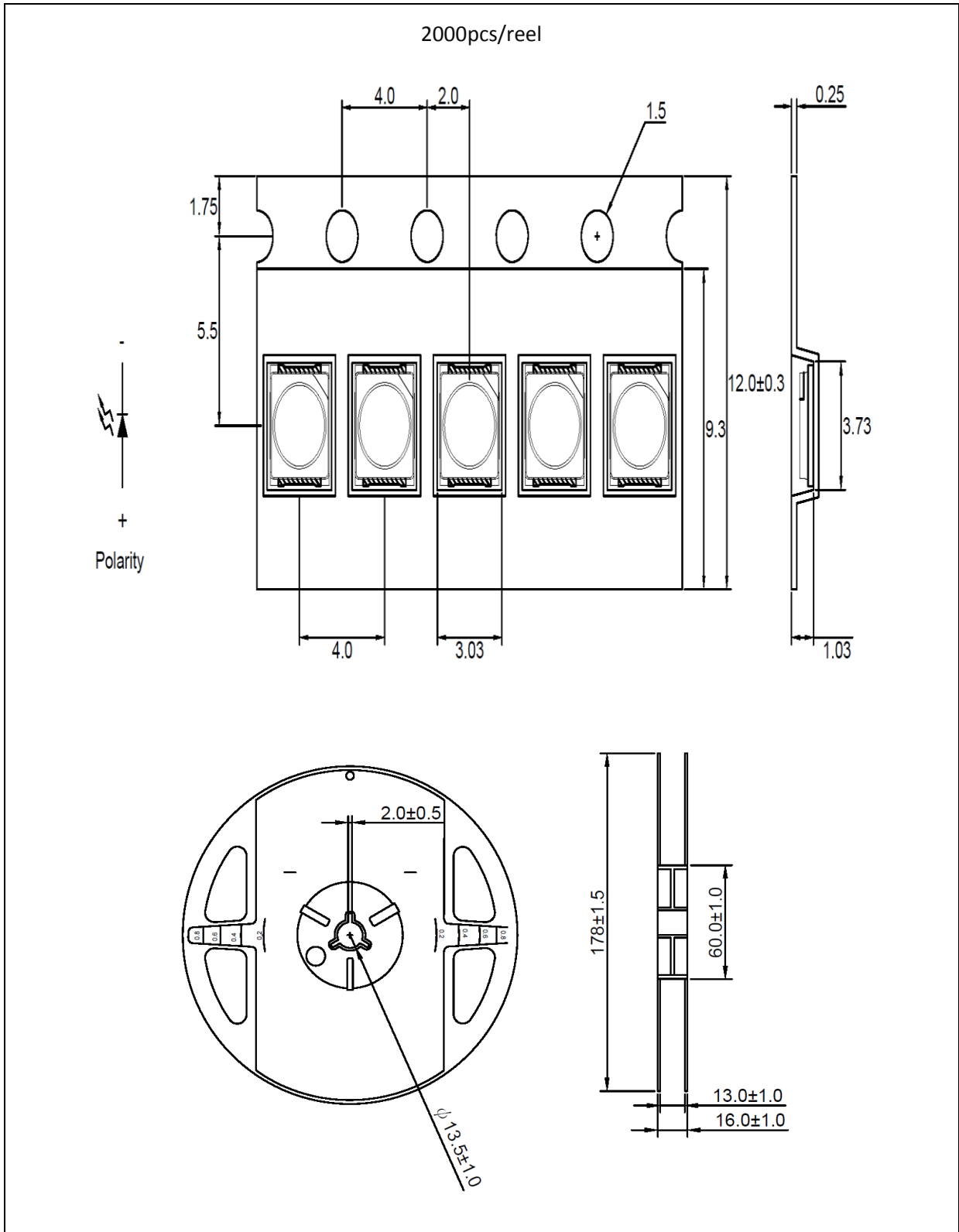


Note:

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

**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 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 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:

- 70±3°C x 24hrs and <5%RH, taped / reel package.
- 100±3°C x 2hrs, bulk (loose) package.
- 130±3°C x 30min, bulk (loose) 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	26/11/2014	Datasheet set-up.