



**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

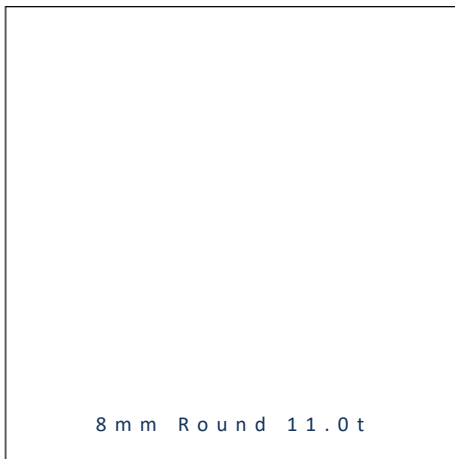


- ▶ THT Lamp
- ▶ 8mm Round 11.0t
- ▶ Red / Green / Blue

NOM59L91



Release Date: 03 October 2021 Version: A1.1



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### THT Lamp Series

**RoHS**  
Compliant



#### FEATURES (Red/Green/Blue):

- **Package:** Through Hole RGB THT Lamp
- **Forward Current:** 20/20/20mA\*
- **Forward Voltage (typ.):** 2.1/3.1/3.1V
- **Luminous Flux (typ.):** 2800/6100/1600mcd@20mA
- **Colour:** Red/Green/Blue
- **CCT/Wavelength:** 625/525/469nm
- **Viewing angle:** 120/120/120°
- **Materials:**
  - AlGaInP/InGaN/InGaN
  - Resin: Epoxy (White Diffused)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+85°C
- **Grouping parameters:**
  - Forward voltage
  - Luminous intensity
  - Dominant Wavelength
- **Soldering methods:** Wave soldering
- **Preconditioning:** MSL 3 according to JEDEC
- **Packing:** In bulk

#### APPLICATIONS:

- Switch Light
- Decoration Lighting
- Signal Lighting
- Display

\* in order of Red/Green/Blue

**CHARACTERISTICS:**


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

Parameter	Symbol	Ratings	Unit
Forward Current	I <sub>F</sub>	30/30/30*	mA
Pulse Forward Current (duty 1/10; width 0.1ms)	I <sub>MAX</sub>	50/50/50	mA
Reverse Voltage	V <sub>R</sub>	5/5/5	V
Reverse Current @5V	I <sub>R</sub>	10/10/10	μA
Power Dissipation	P <sub>D</sub>	100/100/120	mW
Operating Temperature	T <sub>OPR</sub>	-40~+85	°C
Storage Temperature	T <sub>STG</sub>	-40~+85	°C
Soldering Temperature	T <sub>SOL</sub>	260 for 5s	°C

1. \* In the order of Red/Green/Blue.

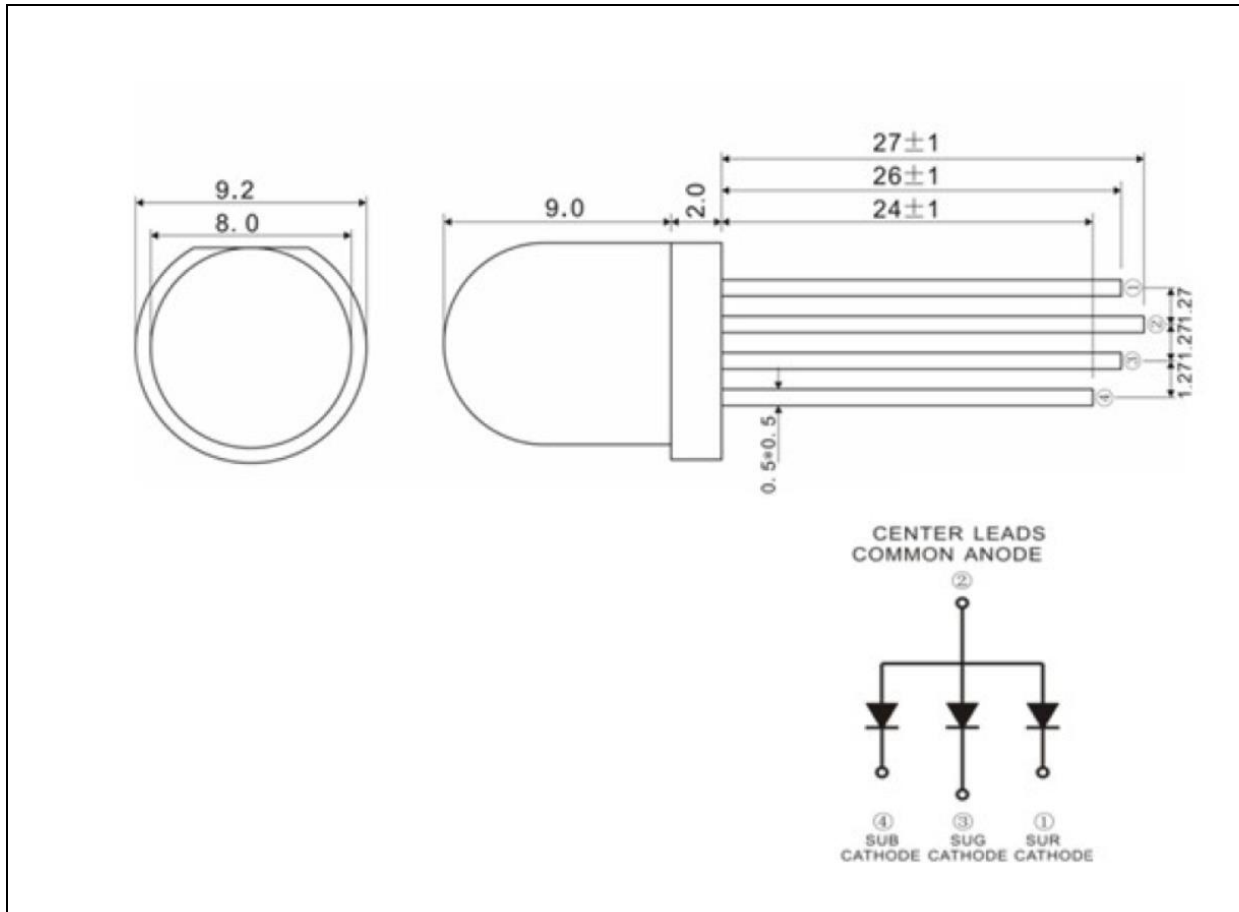
## Electrical &amp; Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Red - Forward Voltage	$V_F$	1.8	---	2.4	V	$I_F=20mA$
Red - Luminous Intensity	$I_V$	1930	---	3800	mcd	$I_F=20mA$
Red - Wavelength	$\lambda_D$	620	---	630	nm	$I_F=20mA$
Spectral Line Half-Width	$\Delta\lambda$	---	15	---	nm	$I_F=20mA$
Green - Forward Voltage	$V_F$	2.8	---	3.4	V	$I_F=20mA$
Green - Luminous Intensity	$I_V$	4800	---	7500	mcd	$I_F=20mA$
Green - Wavelength	$\lambda_D$	520	---	530	nm	$I_F=20mA$
Spectral Line Half-Width	$\Delta\lambda$	---	30	---	nm	$I_F=20mA$
Blue - Forward Voltage	$V_F$	2.8	---	3.4	V	$I_F=20mA$
Blue - Luminous Intensity	$I_V$	980	---	2410	mcd	$I_F=20mA$
Blue - Wavelength	$\lambda_D$	464	---	474	nm	$I_F=20mA$
Spectral Line Half-Width	$\Delta\lambda$	---	25	---	nm	$I_F=20mA$
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	$I_F=20mA$

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

**OUTLINE DIMENSION:**

Package Dimension:

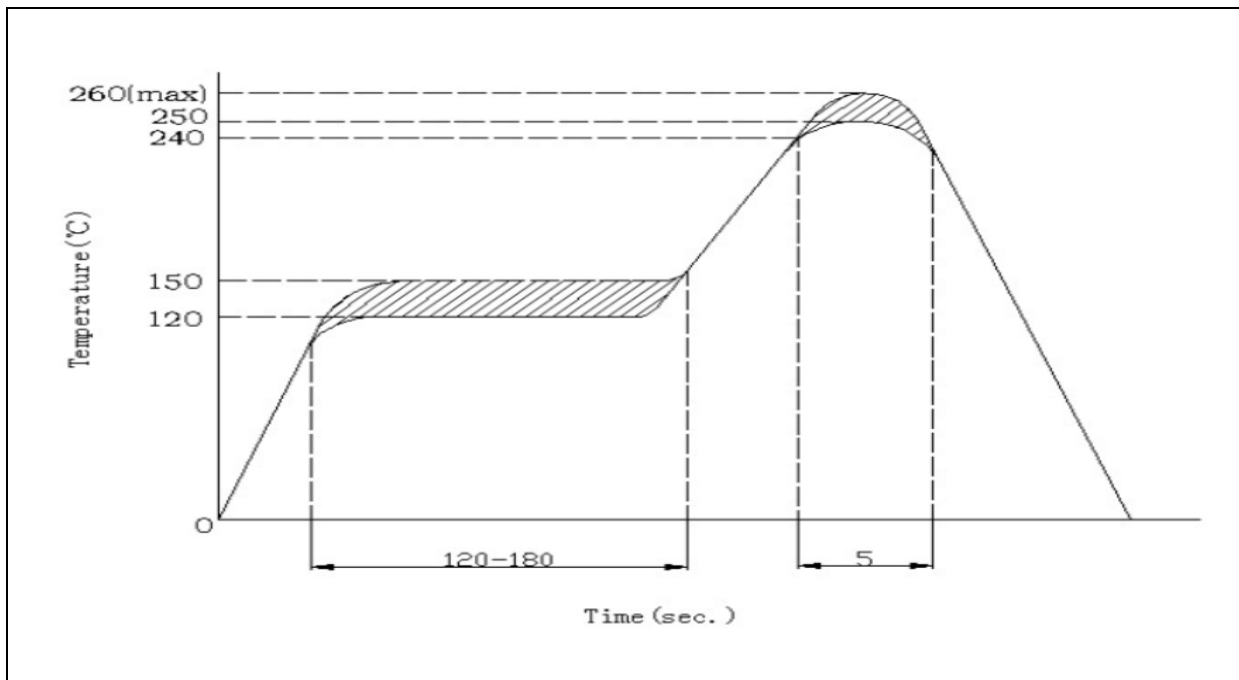


1. All dimensions are in millimetre (mm).
2. Tolerance  $\pm 0.1$ mm, unless otherwise noted.

## RECOMMENDED SOLDERING PROFILE:

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- Manual Soldering:  
The tip temperature of soldering iron doesn't exceed 260°C; soldering time don't exceed 3s and soldering position must be 3mm out of led colloid ◦
- Wave Solder:



Note:

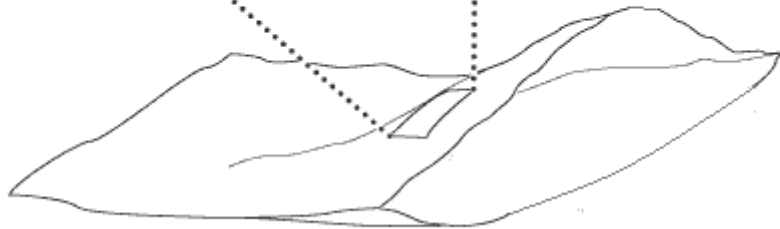
1. Recommended reflow temperature is 240°C; the maximum soldering temperature should be limited to 260°C.
2. Maximum reflow soldering: 1 time.
3. Before, during, and after soldering, should not apply stress on the components and PCB board.

**PACKING SPECIFICATION:**

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Bulk Dimension:

Max.500pcs/bulk



## PRECAUTIONS OF USE:

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### 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 in <10% R.H. storage and apply baking before use.

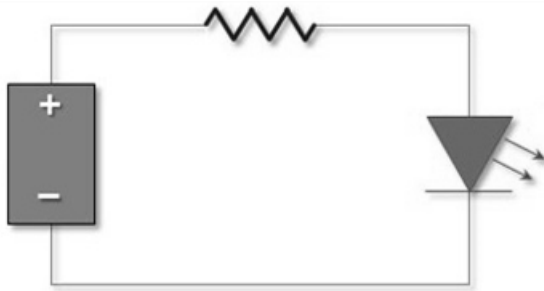
### Baking:

It is required 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:**

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Version	Date	Summary of Revision
A1.0	29/09/2021	Datasheet set-up.
A1.1	03/10/2021	New datasheet format