



**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

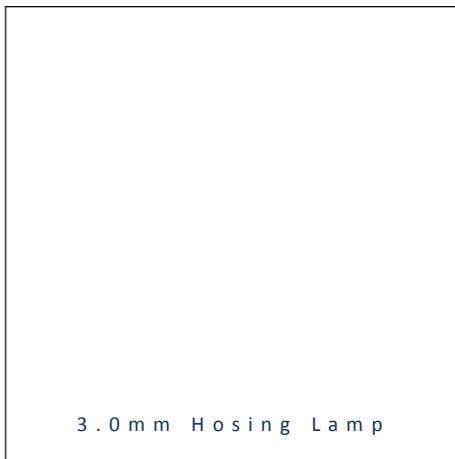


- ▶ PTH Housing Lamp
- ▶ 1x 3.0mm Round
- ▶ Red (625nm)

NOR09H22SV



Release Date: 27 August 2015 Version: A1.0



3.0mm Housing Lamp

### 3.0mm Housing Lamp



#### FEATURES:

- **Package:** PTH Housing Lamp 1x 3.0mm Round
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 2.1V
- **Luminous Intensity (typ.):** 38mcd@20mA
- **Colour:** Red
- **Wavelength:** 625nm
- **Viewing angle:** 76°
- **Materials:**
  - Die: GaAsP on GaP
  - Resin: Epoxy (Red Diffused)
  - Holder: Nylon 66 Black
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
  - Forward voltage
  - Luminous intensity
  - Wavelength
- **Soldering methods:** Hand; Reflow soldering
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 500pcs/Bulk

#### APPLICATIONS:

- Indicator
- Signal
- Side View Application

**CHARACTERISTICS:**


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

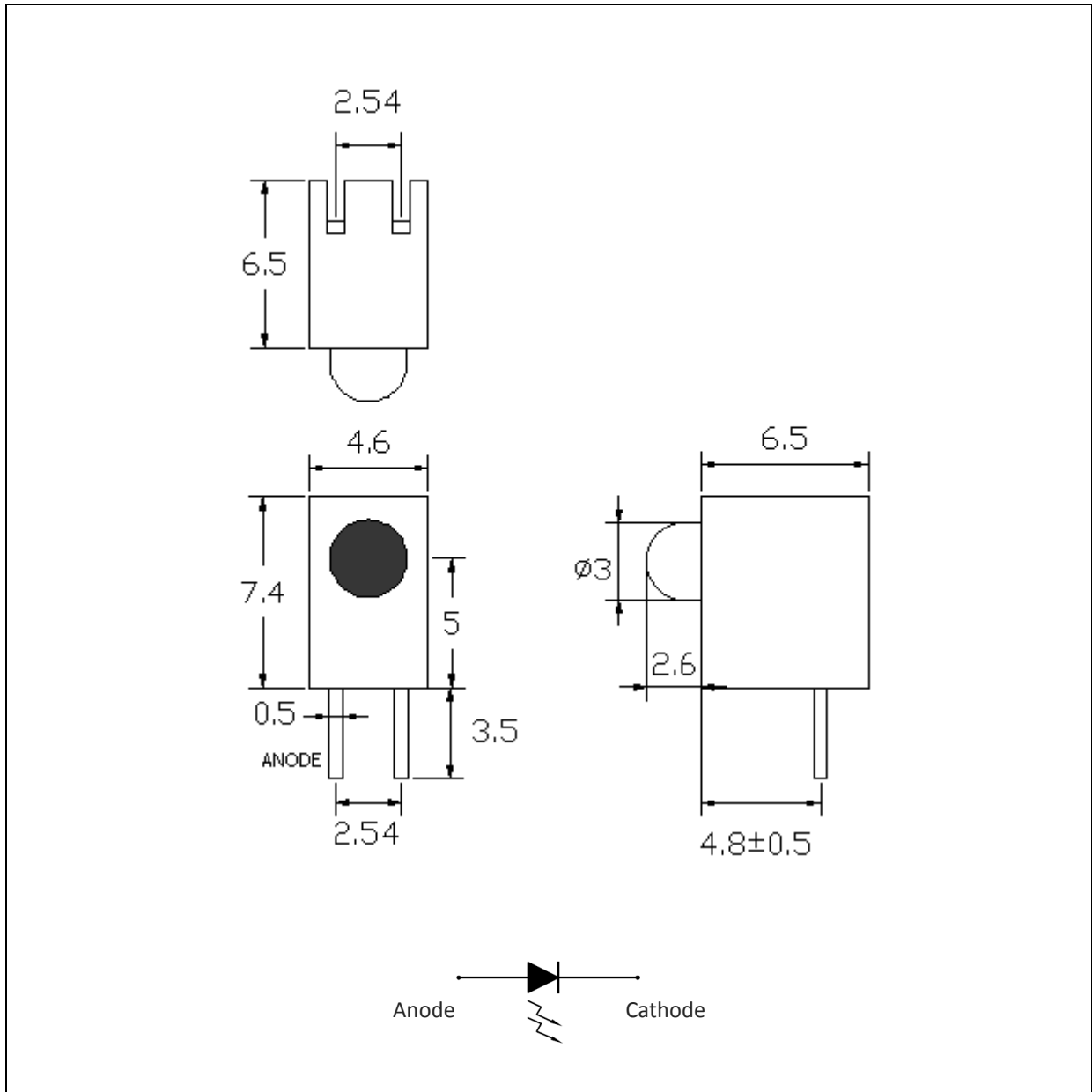
Parameter	Symbol	Ratings	Unit
Forward Current	$I_F$	25	mA
Peak Forward Current Duty 1/10@10KHz	$I_{FP}$	100	mA
Reverse Voltage	$V_R$	5	V
Reverse Current @5V	$I_R$	10	$\mu$ A
Power Dissipation	PD	85	mW
Operating Temperature	$T_{OPR}$	-40~+85	°C
Storage Temperature	$T_{STG}$	-40~+100	°C

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

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	$V_F$	1.9	2.1	2.6	V	$I_F=20mA$
Luminous Intensity	$I_V$	25	38	55	mcd	$I_F=20mA$
Dominant Wavelength	$\lambda_D$	620	625	630	nm	$I_F=20mA$
Peak Wavelength	$\lambda_P$	---	635	---	nm	$I_F=20mA$
Spectral Line Half Bandwidth	$\Delta \lambda$	---	45	---	nm	$I_F=20mA$
Viewing Angle	$2\theta_{1/2}$	---	50	---	deg	$I_F=20mA$

**OUTLINE DIMENSION:**

Package Dimension:



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

**BINNING GROUPS:**


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 Forward Voltage Classifications ( $I_F = 20\text{mA}$ ):

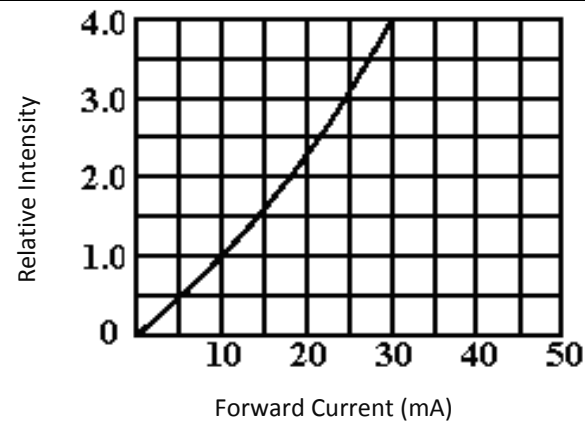
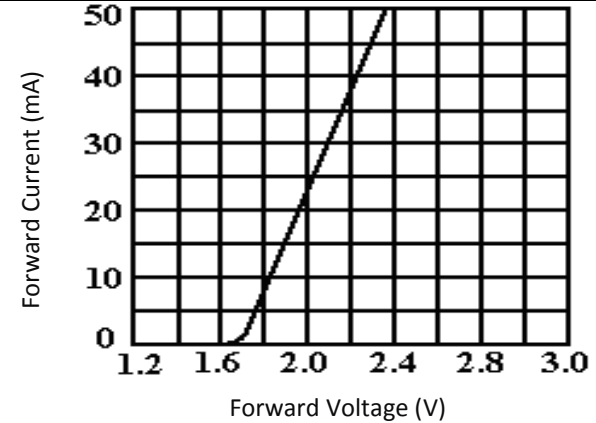
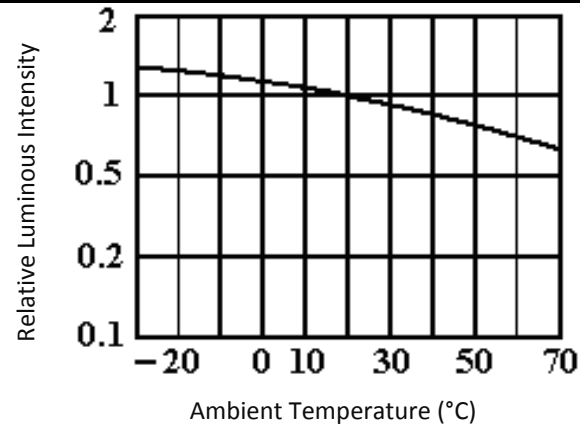
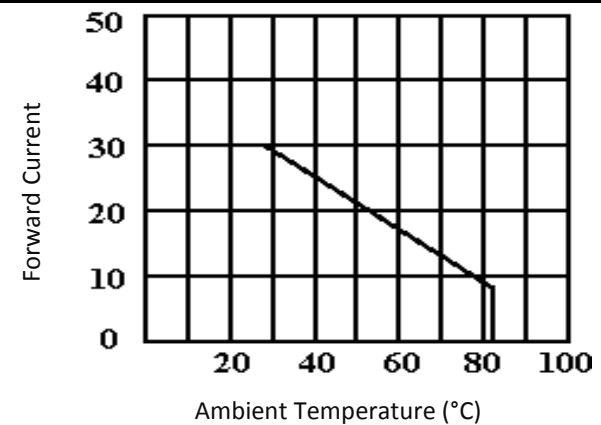
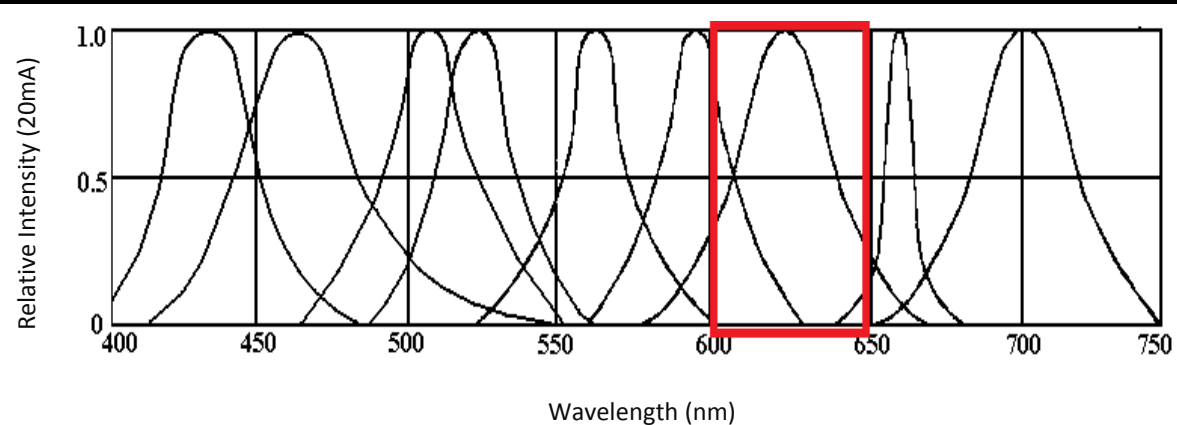
Code	Min.	Max.	Unit
V1	1.9	2.6	V

 Luminous Intensity Classifications ( $I_F = 20\text{mA}$ ):

Code	Min.	Max.	Unit
X1	25	55	mcd

 Wavelength Classifications ( $I_F = 20\text{mA}$ ):

Code	Min.	Max.	Unit
R1	620	630	nm

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

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

**Relative Luminous Intensity v.s. Temperature**

**Forward Current v.s. Temperature**

**Relative Intensity v.s. Wavelength**


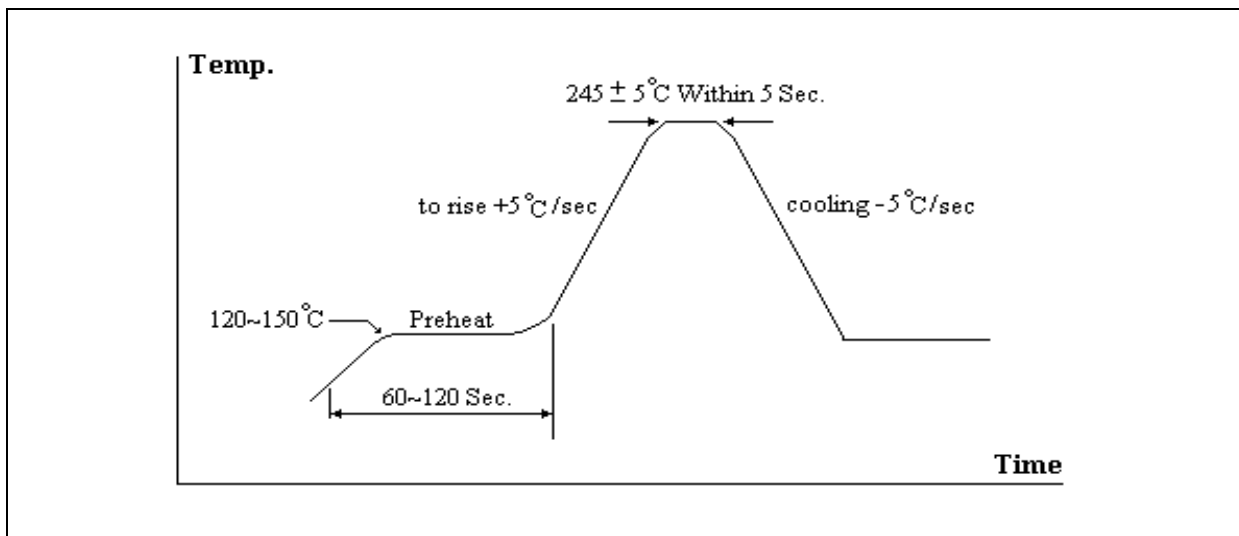
## RECOMMENDED SOLDERING PROFILE:

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### Hand Solder (Solder Iron):

- Temperature at tip of iron: 300°C Max. (25W Max.).
- Soldering Time: 3 seconds  $\pm$  1 sec.
- Maximum reflow soldering: 1 time.

### Reflow Solder:



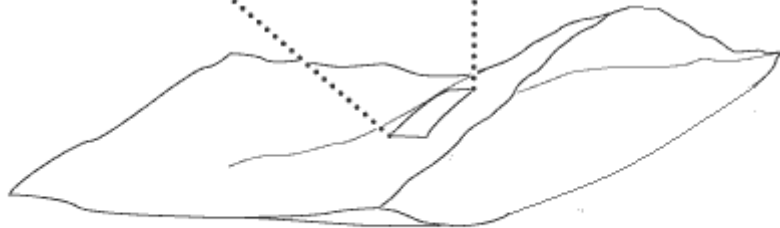
### Note:

1. Maximum reflow soldering: 1 time.
2. Before, during, and after soldering, should not apply stress on the components and PCB board.

**PACKING SPECIFICATION:**

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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 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:**

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Version	Date	Summary of Revision
A1.0	27/08/2015	Datasheet set-up.