BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED!

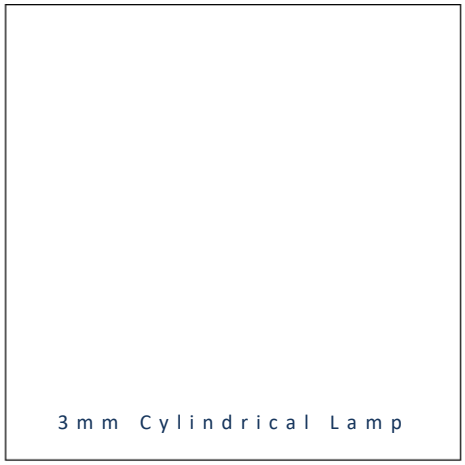
ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

PRODUCT DATASHEET

- ▶ PTH/THT Lamp
- ▶ 3mm Cylindrical 3.8t
- ▶ Red (625nm)

Release Date: 19 December 2023 Version: A1.3

N0R16L90 (Bulk)
N0R16L90T (Taping)



3mm Cylindrical Lamp

3mm Cylindrical Lamp

RoHS Compliant

FEATURES:

- **Package:** PTH/THT Lamp 3mm Cylindrical 3.8t
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 2.0V
- **Luminous Intensity (typ.):** 160mcd @20mA
- **Colour:** Red
- **Dominant Wavelength (typ.):** 625nm
- **Viewing Angle:** 160°
- **Materials:**
  - Die: AlInGaP
  - Resin: Epoxy (Red Diffused)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping Parameters:**
  - Forward voltage
  - Luminous intensity
  - Dominant wavelength
- **Soldering Methods:** Hand; Soldering Heat (DIP)
- **Packing:** 500pcs/Bulk; 2000pcs/Taping

APPLICATIONS:

- Indicator
- Switch
- Signal Light

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

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

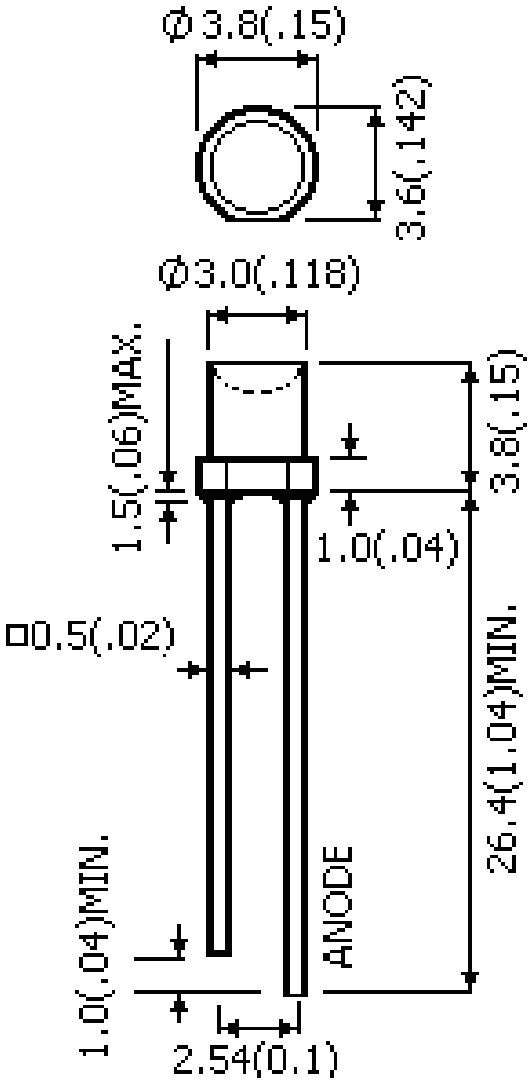
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	1.8	2.0	2.5	V	I_F=20mA
Luminous Intensity	I_V	125	160	220	mcd	I_F=20mA
Dominant Wavelength	λ_D	620	625	630	nm	I_F=20mA
Peak Wavelength	λ_P	---	635	---	nm	I_F=20mA
Spectral Line H-Width	$\Delta\lambda$	---	22	---	nm	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	---	160	---	deg	I_F=20mA

1. Luminous intensity (I_V) ±15%, Forward Voltage (V_F) ±0.1V

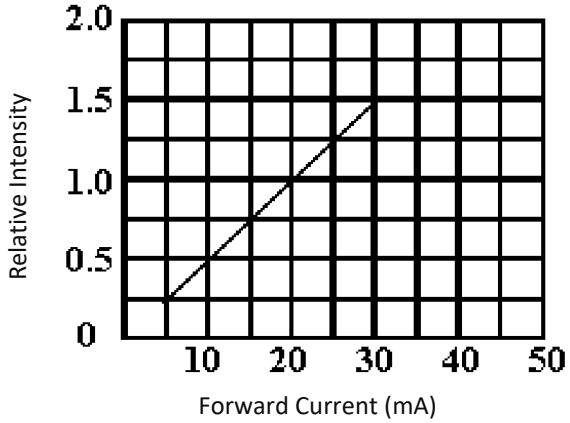
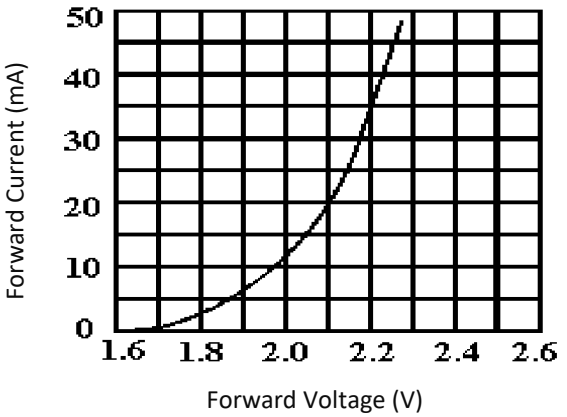
OUTLINE DIMENSION:

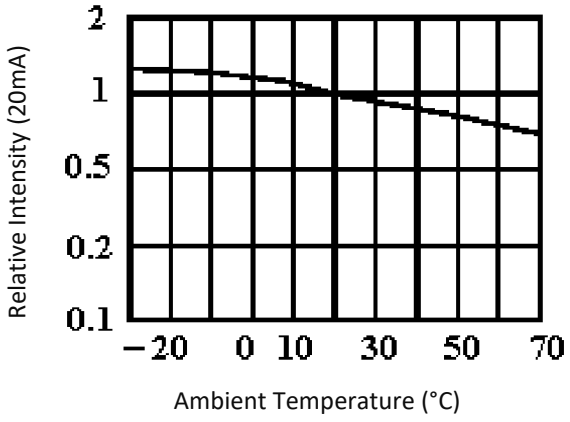
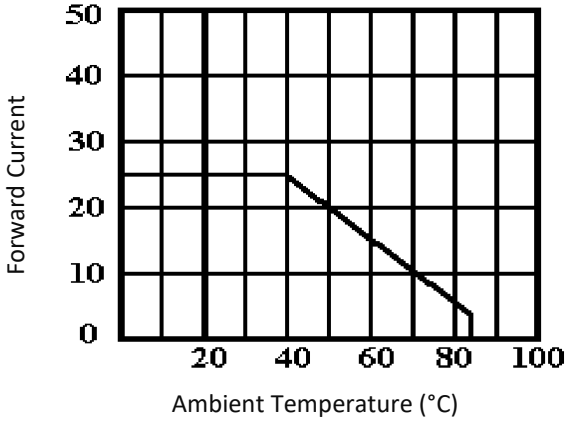
Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance ±0.25mm, unless otherwise noted.

ELECTRO-OPTICAL CHARACTERISTICS:

Relative Intensity v.s. Forward Current	Forward Current v.s. Forward Voltage
	

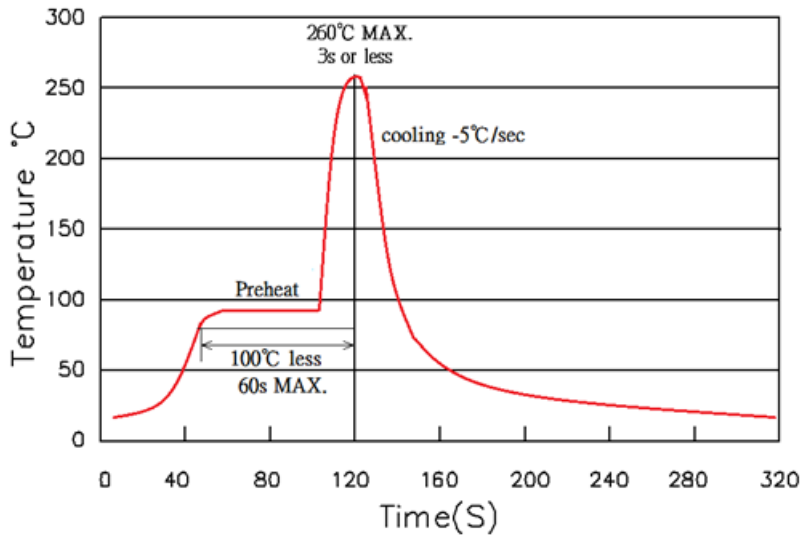
Relative Intensity v.s. Temperature	Forward Current v.s. Temperature
	

RECOMMENDED SOLDERING PROFILE:

Hand Solder (Solder Iron):

- Temperature at tip of iron: 350°C Max.
- Soldering Time: 3 seconds ± 1 sec.

Soldering Heat (DIP):



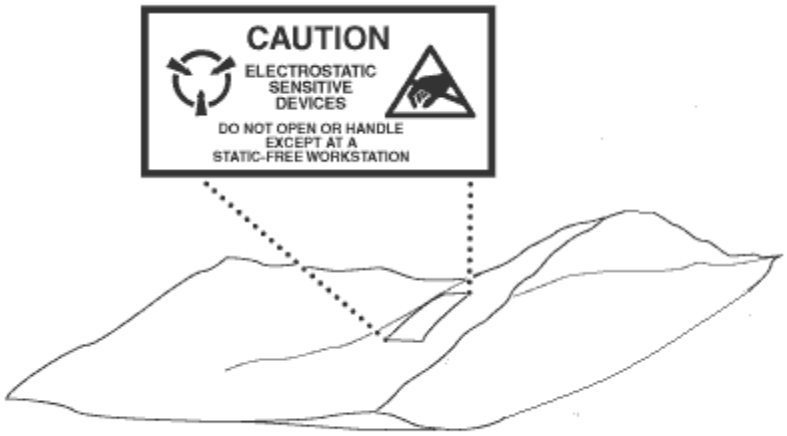
Note:

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

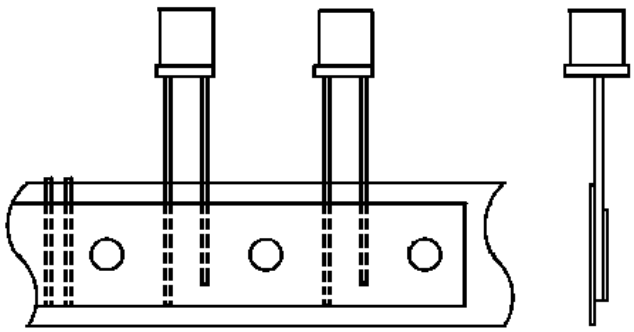
PACKING SPECIFICATION:

Reel Dimension:

500pcs/Bulk



2000pcs/Taping



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

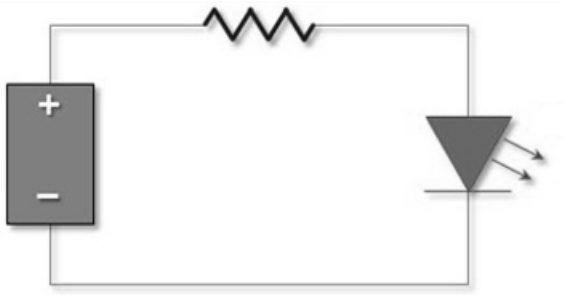
Baking:

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:

- 60±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	04/08/2015	Datasheet set-up.
A1.1	21/09/2015	Update solder profile.
A1.2	24/03/2023	Revise wavelength range.
A1.3	19/12/2023	Revise storage condition.