BRIGHTEK
BRIGHTEK (EUROPE) LIMITED
Brighten Up The World With LED !

PRODUCT DATASHEET

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

► PTH/THT Lamp

► 10mm Round 13.5t

► PC Yellow (580nm)

N0Y45L16SPC
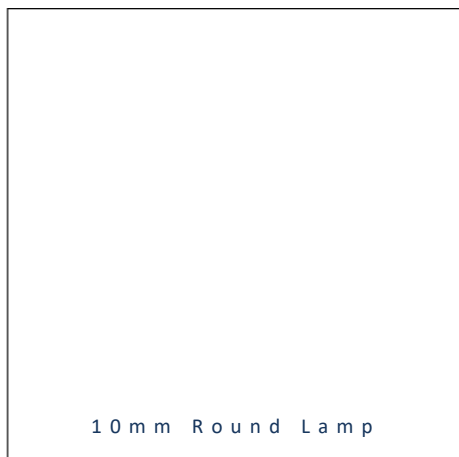
10mm Round Lamp

5mm Round Lamp

RoHS Compliant

FEATURES:

- **Package:** PTH/THT LED Lamp 10mm Round 13.5t with Stopper
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 3.0V
- **Luminous Intensity (typ.):** 16500mcd@20mA
- **Colour:** PC Yellow
- **Dominant Wavelength (typ.):** 580nm
- **Viewing angle:** 25°
- **Electrostatics Discharge (ESD):** 200V
- **Materials:**
  – Die: InGaN
  – Resin: Epoxy (Water Clear)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
  – Forward voltage
  – Luminous intensity
  – Dominant wavelength
- **Soldering methods:** Hand; Soldering Heat (DIP)
- **MSL Level:** acc. to JEDEC Level 3
- **Packing:** Max.500pcs/bulk

APPLICATIONS:

- Indicator
- Switch
- Signal Light

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CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	30	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
Electrostatics Discharge	ESD	200	V
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	2.8	3.0	3.4	V	I_F=20mA
Luminous Intensity	I_V	11000	16500	32000	mcd	I_F=20mA
Chromaticity Coordinates	X	---	0.5000	---	---	I_F=20mA
	Y	---	0.4870	---		
Dominant Wavelength	λ_D	572	580	586	nm	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	---	25	---	deg	I_F=20mA

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

OUTLINE DIMENSION:

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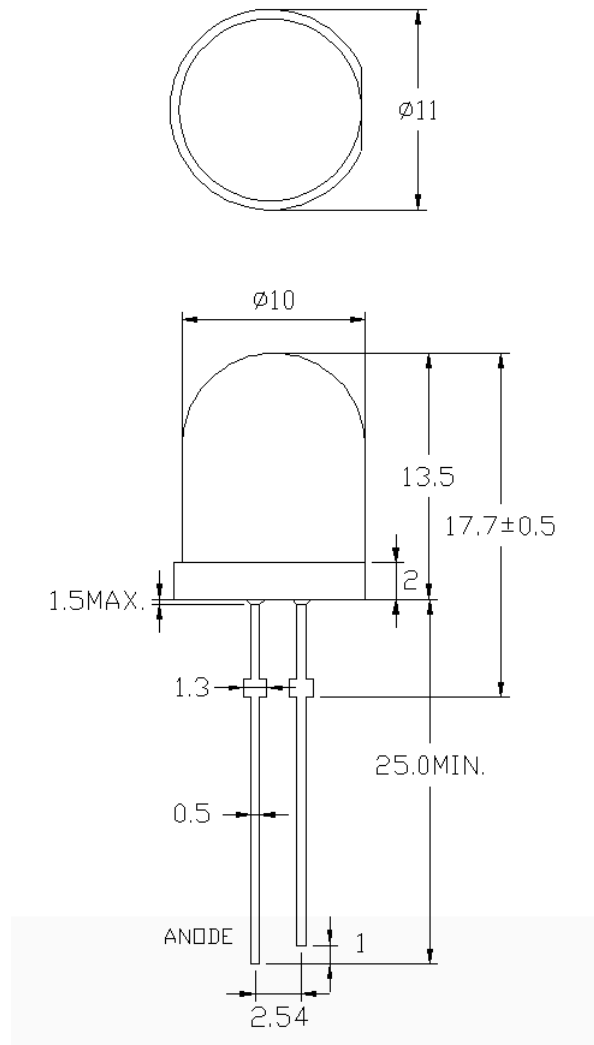
1. All dimensions are in millimetre (mm).
2. Tolerance ±0.25mm, unless otherwise noted.

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BINNING GROUPS:

Forward Voltage Classifications (I_F = 20mA):

Code	Min.	Max.	Unit
J	2.8	3.0	
K	3.0	3.2	V
L	3.2	3.4	

Luminous Intensity Classifications (I_F = 20mA):

Code	Min.	Max.	Unit
22	11000	16500	
23	16500	25000	mcd
24	25000	32000	

Dominant Wavelength Classifications (I_F = 20mA):

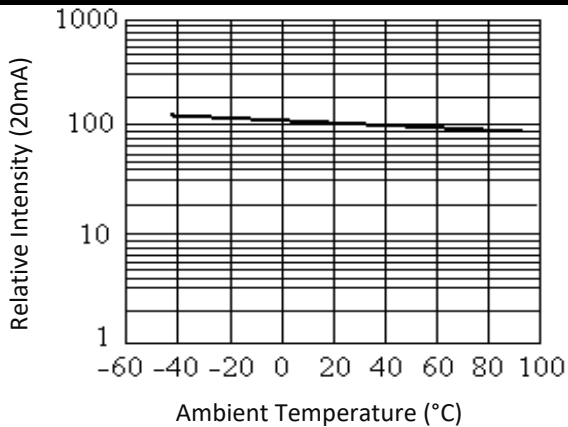| Code	Min.	Max.	Unit
1	572	577	
2	577	581.5	nm
3	581.5	586	

ELECTRO-OPTICAL CHARACTERISTICS:

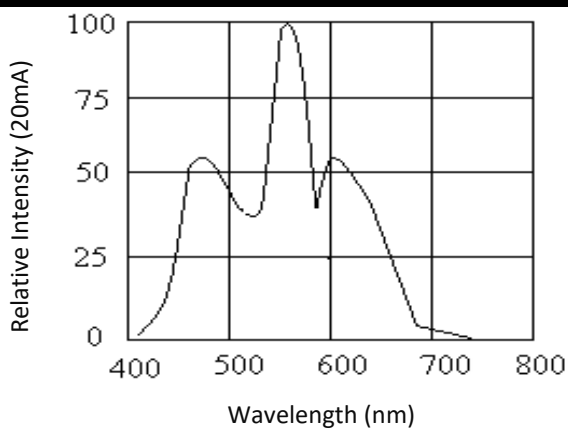| Relative Intensity v.s. Forward Current	Forward Current v.s. Forward Voltage
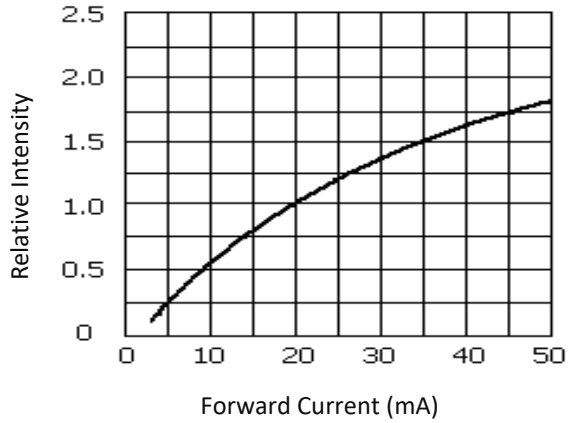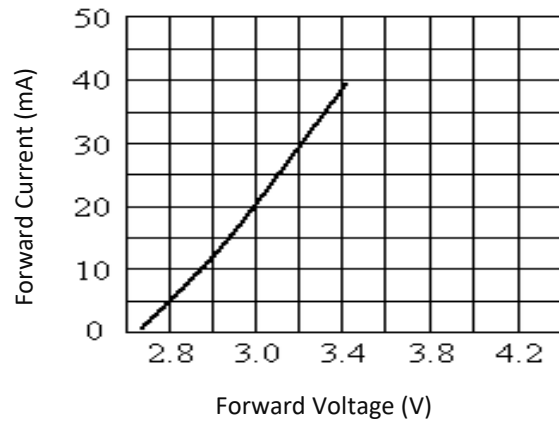
Relative Intensity v.s. Temperature	Forward Current v.s. Temperature
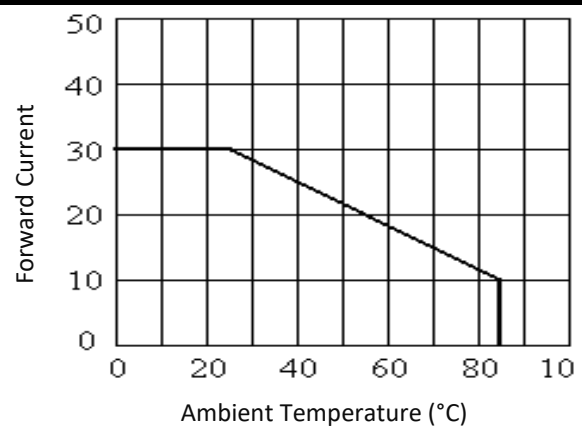
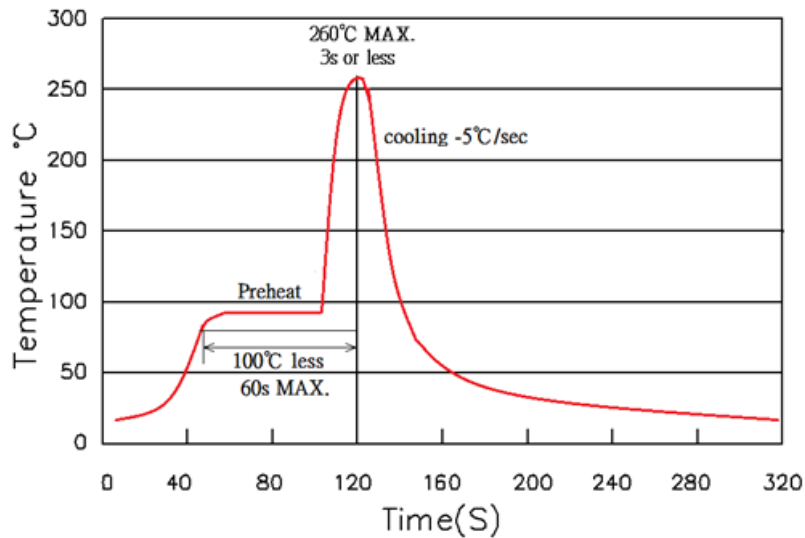| Relative Intensity v.s. Wavelength |
|---|

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RECOMMENDED SOLDERING PROFILE:

Hand Solder (Solder Iron):
- Temperature at tip of iron: 350°C Max.
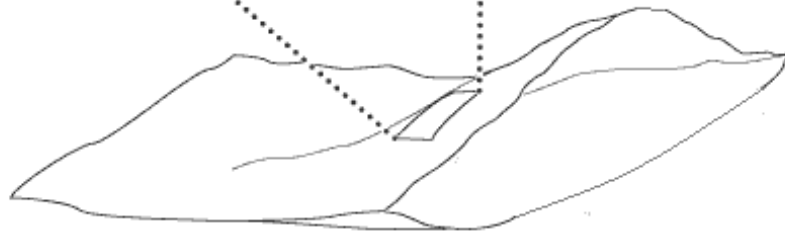- Soldering Time: 3 seconds ± 1 sec.

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:

Max.500pcs/Bulk

CAUTION

ELECTROSTATIC
SENSITIVE
DEVICES

DO NOT OPEN OR HANDLE
EXCEPT AT A
STATIC-FREE WORKSTATION

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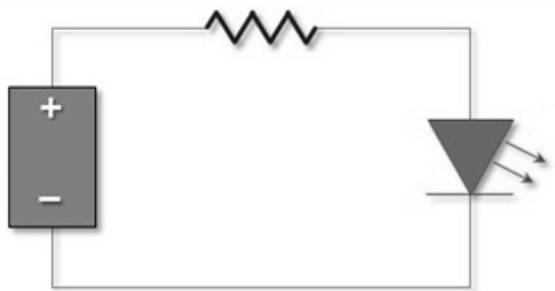
Baking:

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	21/03/2023	Datasheet set-up.

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