



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

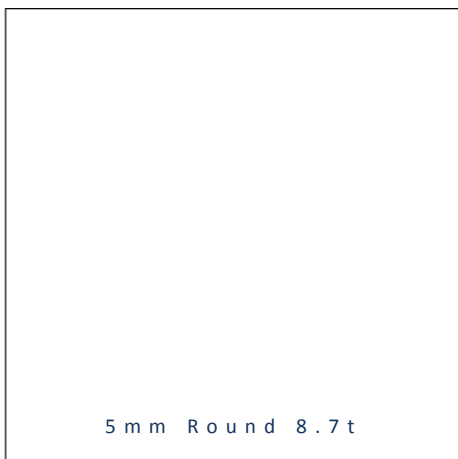


- ▶ PTH Lamp
- ▶ 5mm Round 8.7t
- ▶ Blue (467nm)

NOB28L52 (Bulk)
NOB28L52T (Taping)



Release Date: 01 March 2016 Version: A1.0



APPLICATIONS:

- Indicator
- Indoor Lighting
- Decorative Lighting
- Consumer Goods
- Switch

5mm Round 8.7t



FEATURES:

- **Package:** Water Clear 5mm Round PTH Lamp
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 3.2V
- **Luminous Intensity (typ.):** 6800mcd
- **Colour:** Blue
- **Wavelength:** 467nm
- **Viewing angle:** 15°
- **Materials:**
 - Die: InGaN
 - Resin: Epoxy (Water Clear)
 - L/F Finish: Tin Plating
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping parameters:**
 - Forward voltage
 - Luminous intensity
 - Dominant Wavelength
- **Soldering methods:** Hand; Wave soldering
- **Preconditioning:** acc. to JEDEC Level 3
- **Packing:** 500pcs/Bulk; 2000pcs/Taping

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	30	mA
Peak Forward Current Duty 1/10, width 0.1ms	I_{FP}	80	mA
Reverse Voltage	V_R	5	V
Reverse Current @5V	I_R	10	μA
Power Dissipation	P_D	80	mW
Electrostatics Discharge (HBM)	ESD	1000	V
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-40~+100	°C
Junction Temperature	T_J	110	°C

Electrical & Optical Characteristics (Ta=25°C)

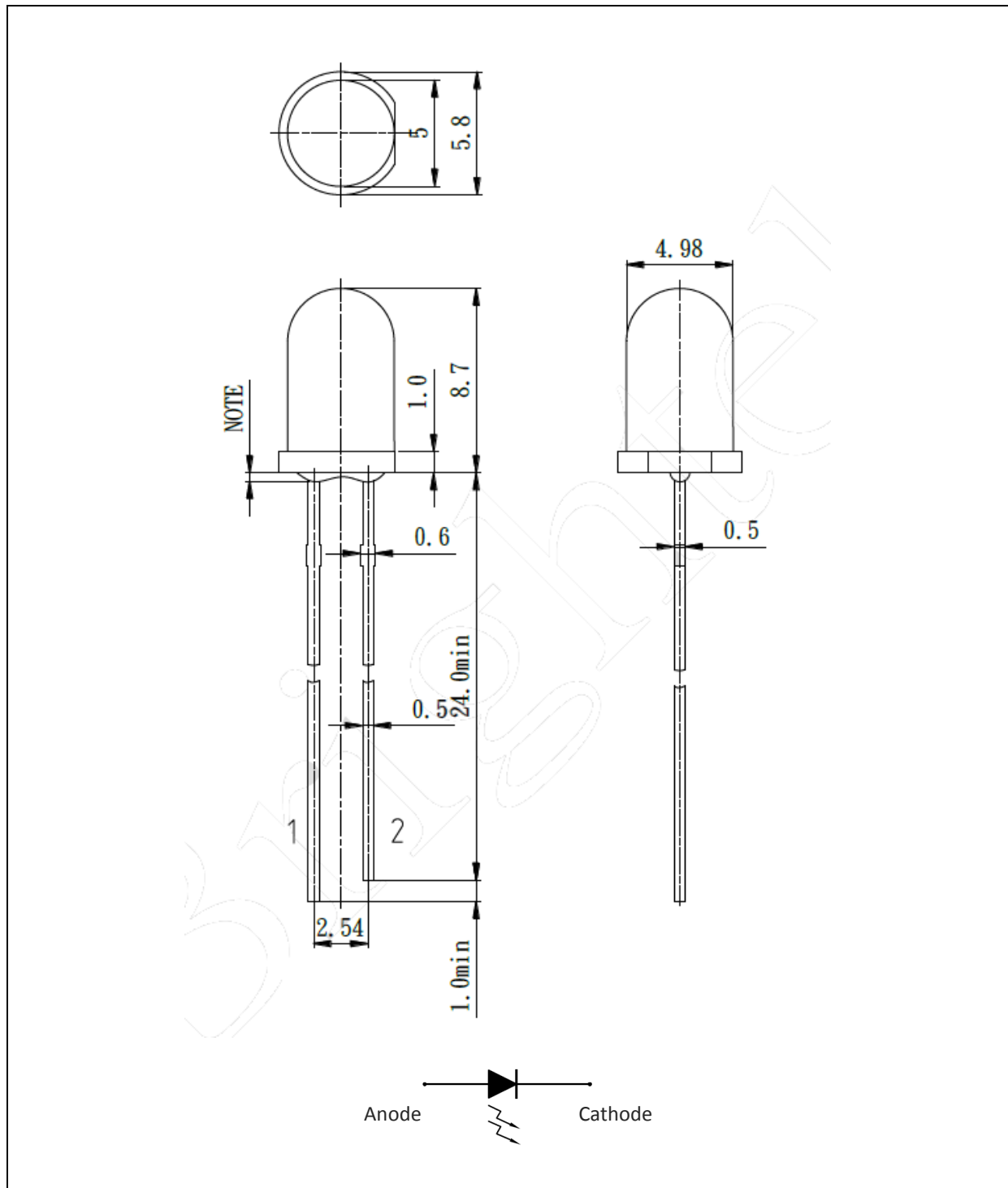
Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	2.8	3.2	3.8	V	$I_F=20mA$
Luminous Intensity	I_V	4900	6800	13800	mcd	$I_F=20mA$
Dominant Wavelength	λ_D	462.5	467	472.5	nm	$I_F=20mA$
Viewing Angle	$2\theta_{1/2}$	---	15	---	deg	$I_F=20mA$

1. Luminous Intensity (I_V) $\pm 10\%$, Forward Voltage (V_F) $\pm 0.1V$, Dominant Wavelength (λ_D) $\pm 1nm$



OUTLINE DIMENSION:

Package Dimension:



1. All dimensions are in millimetre (mm).
2. Tolerance $\pm 0.3\text{mm}$, unless otherwise noted.

BINNING GROUPS:

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

Code	Min.	Max.	Unit
B	2.8	3.0	V
C	3.0	3.2	
D	3.2	3.4	
E	3.4	3.6	
F	3.6	3.8	

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

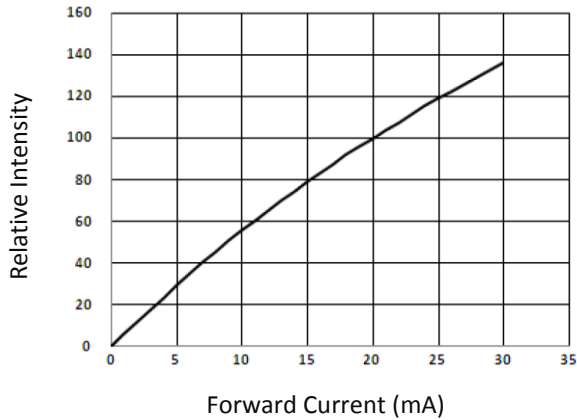
Code	Min.	Max.	Unit
24	4900	6300	mcd
25	6300	8200	
26	8200	10600	
27	10600	13800	

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

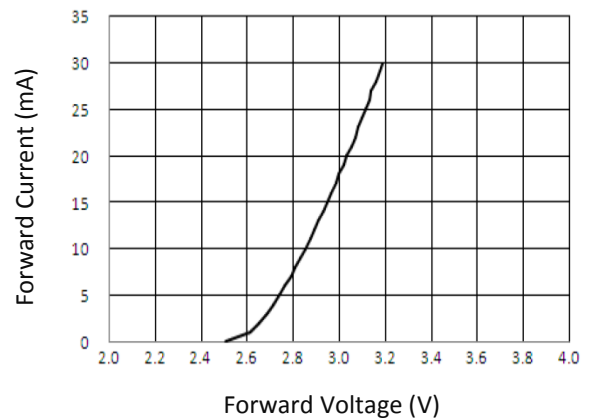
Code	Min.	Max.	Unit
D	462.5	467.5	nm
E	467.5	472.5	

ELECTRO-OPTICAL CHARACTERISTICS:

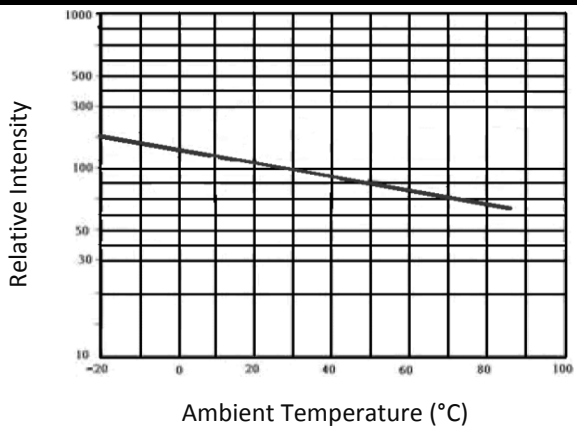
Relative Intensity v.s. Forward Current



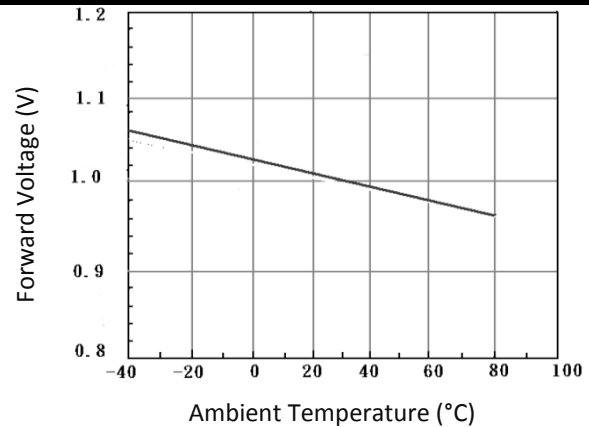
Forward Current v.s. Forward Voltage



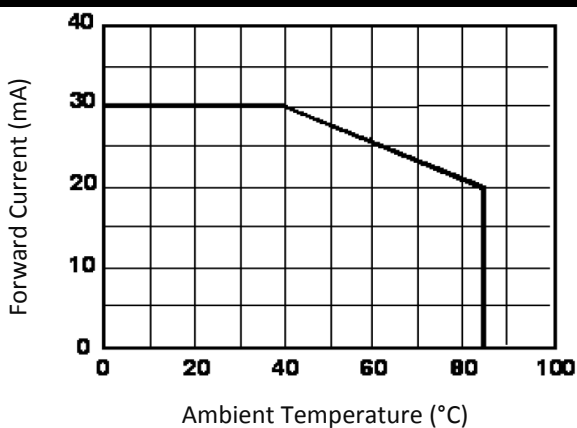
Relative Intensity v.s. Temperature



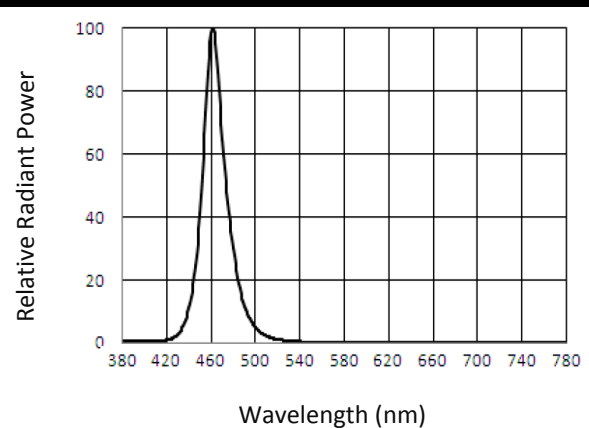
Forward Voltage v.s. Temperature



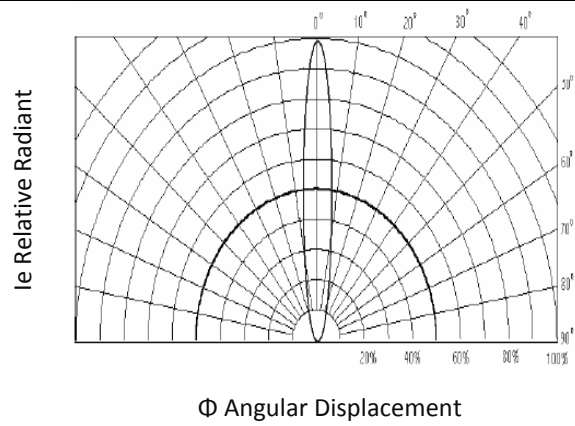
Temperature Derating Chart



Power Spectrum v.s. Wavelength



Relative Intensity v.s. Angular Displacement



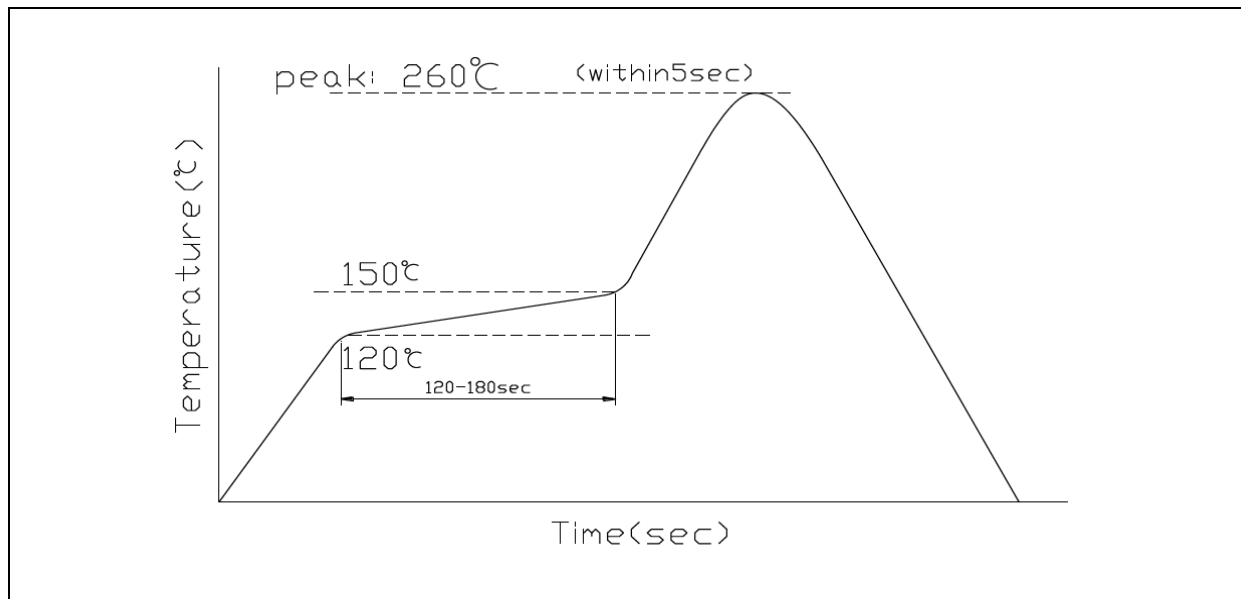


RECOMMENDED SOLDERING PROFILE:

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.

Wave Solder:



Note:

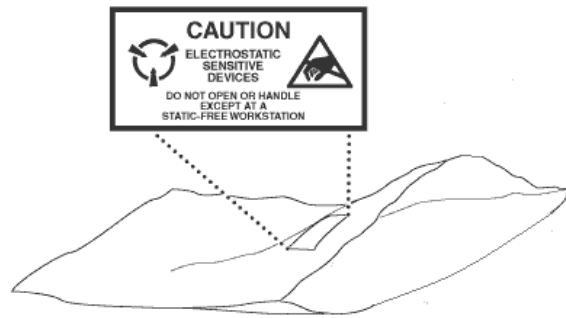
1. Maximum reflow soldering: 1 time.
2. Before, during, and after soldering, should not apply stress on the components and PCB board.



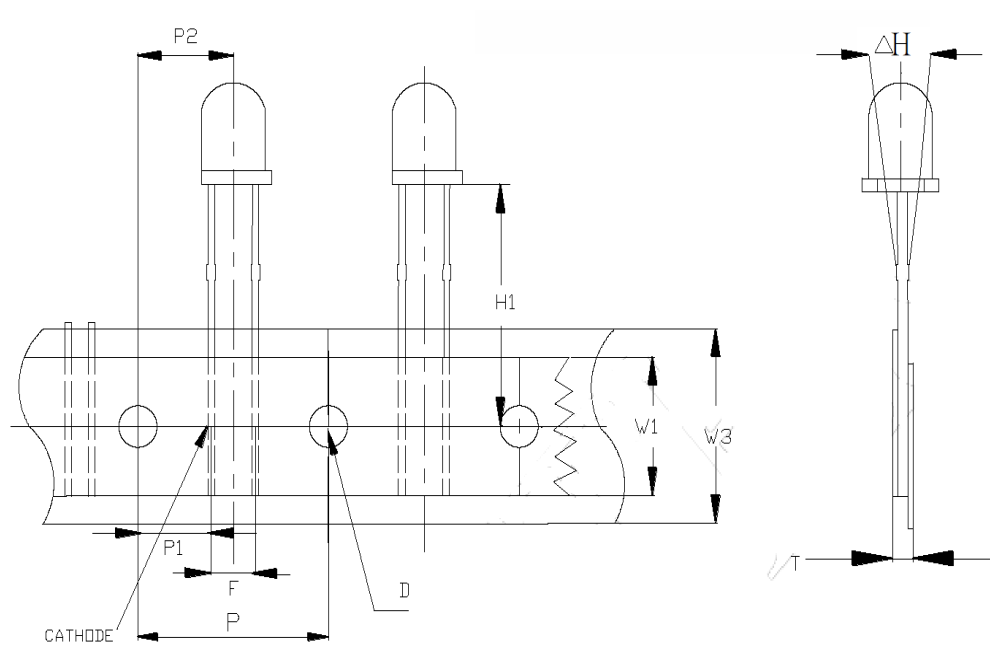
PACKING SPECIFICATION:

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 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:

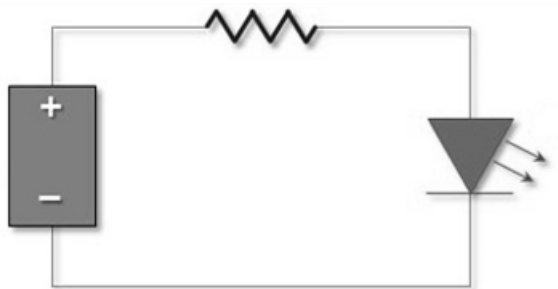
It is recommended to bake the LED before soldering if the pack has been unsealed for longer than 24hrs.

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	01/03/2016	Datasheet set-up.