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
- ▶ 4.1mm Bullet Head 8.7t
- ▶ Infrared IR (850nm)

Release Date: 14 December 2023 Version: A1.1

N0F46L06

Bullet Head Lamp

Bullet Head Lamp

RoHS Compliant

FEATURES:

- **Package:** PTH/THT 4.1mm Bullet Head 8.7t LED Lamp
- **Forward Current:** 20mA
- **Forward Voltage (typ.):** 1.4V
- **Radiant Intensity (typ.):** 74mW/sr@20mA
- **Colour:** Infrared IR
- **Peak Wavelength (typ.):** 850nm
- **Viewing Angle:** 8°
- **Materials:**
  - Die: GaAlAs
  - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -40~+100°C
- **Grouping Parameters:**
  - Forward voltage
  - Luminous intensity
  - Peak wavelength
- **Soldering Methods:** Hand; Soldering Heat (DIP)
- **Packing:** max.500pcs/bulk

APPLICATIONS:

- Remote Control
- Smoke Detector
- Photo Detector
- Alarm
- Computer I/O Peripheral
- Automatic Control System
- Industrial Application

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Forward Current	I_F	100	mA
Peak Forward Current Width 10us Duty 1%	I_{FP}	1	A
Reverse Current @5V	I_R	100	μA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	160	mW
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-40~+100	°C

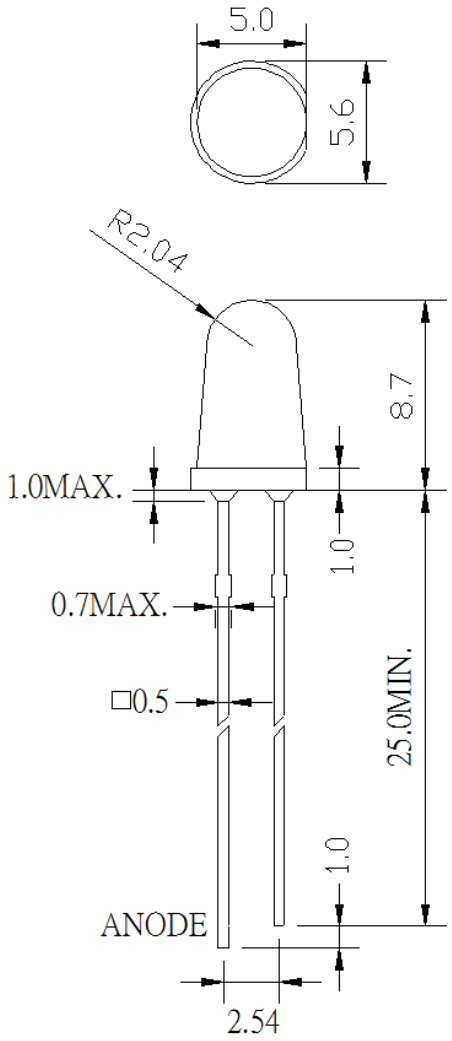
Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	---	1.4	1.7	V	I_F=20mA
Radiant Intensity	I_e	50	75	---	mW/sr	I_F=20mA
Peak Wavelength	λ_P	---	850	---	nm	I_F=20mA
Spectral Line Half Bandwidth	$\Delta\lambda$	---	42	---	nm	I_F=20mA
Viewing Angle	$2\theta_{1/2}$	---	8	---	deg	I_F=20mA
Rise Time	T_R	---	---	15	nS	---
Fall Time	T_F	---	---	10	nS	---

1. Luminous intensity (I_V) ±15%, Forward Voltage (V_F) ±0.1V, Viewing angle($2\theta_{1/2}$) ±5%

OUTLINE DIMENSION:

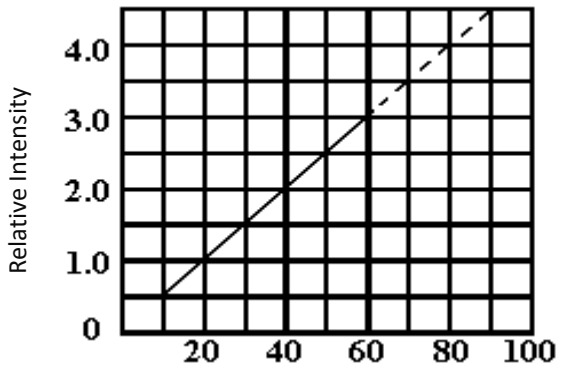
Package Dimension:



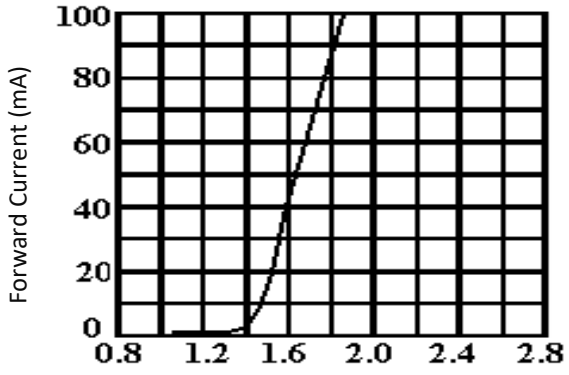
1. All dimensions are in millimetre (mm).
2. Tolerance ±0.2mm, unless otherwise noted.

ELECTRO-OPTICAL CHARACTERISTICS:

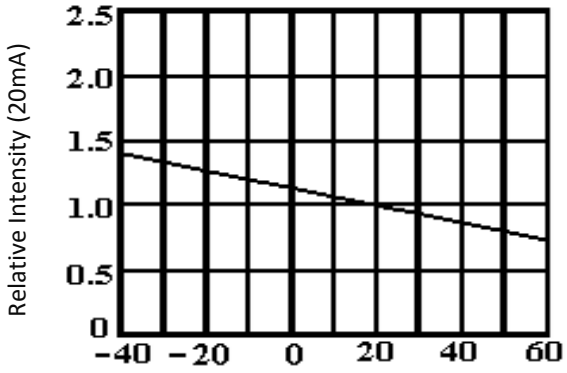
Relative Intensity v.s. Forward Current



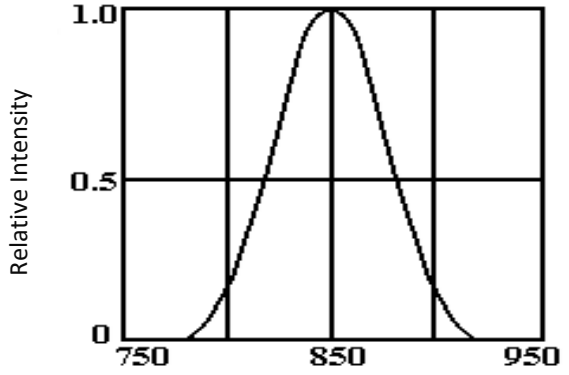
Forward Current v.s. Forward Voltage



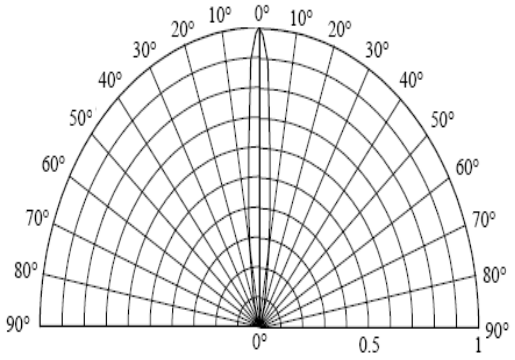
Relative Intensity v.s. Temperature



Relative Intensity v.s. Wavelength



Radiation Angle

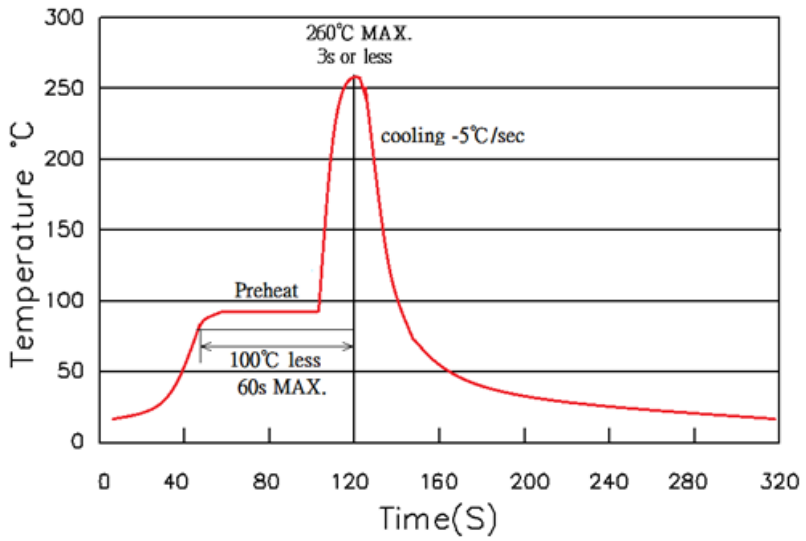


RECOMMENDED SOLDERING PROFILE:

Hand Solder (Solder Iron):

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

Soldering Heat (DIP):



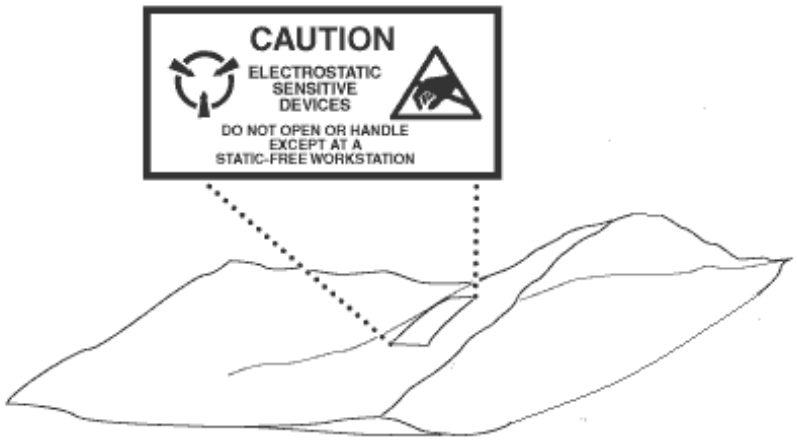
Note:

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



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.

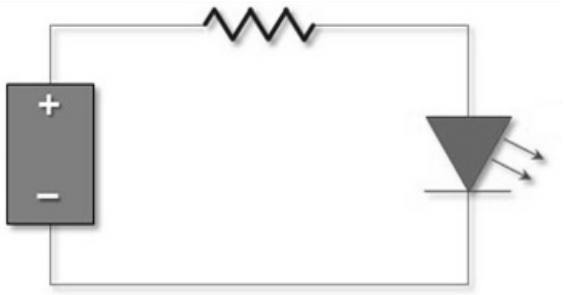
Baking:

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	03/04/2023	Datasheet set-up.
A1.1	14/12/2023	Revise storage condition.