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 Round 5.3t
- Phototransistor (PT) for matching N0F00L29

Release Date: 14 December 2023 Version: A1.1

N0P08L56 (Bulk)
N0P08L56T (Tape)

3mm Round Lamp

3mm Round Lamp

RoHS Compliant

FEATURES:

N0P08L56 consist of NPN silicon phototransistor mounted in clear lens, is mechanically and spectrally matched to infrared emitting diode N0F00L29 or similar.

- **Package:** PTH/THT LED Lamp 3mm Round 5.3t
- **Wavelength of Max. Sensitivity (typ.):** 900nm
- **Receiving Angle:** 30°
- **Materials:**
  - Die: Silicon
  - Resin: Epoxy (Water Clear)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -50~+100°C
- **Soldering Methods:** Hand; Soldering Heat (DIP)
- **Packing:** 500pcs/bulk; 2000pcs/tape (Ammo Pack)

APPLICATIONS:

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

CHARACTERISTICS:

Absolute Maximum Characteristics (Ta=25°C)

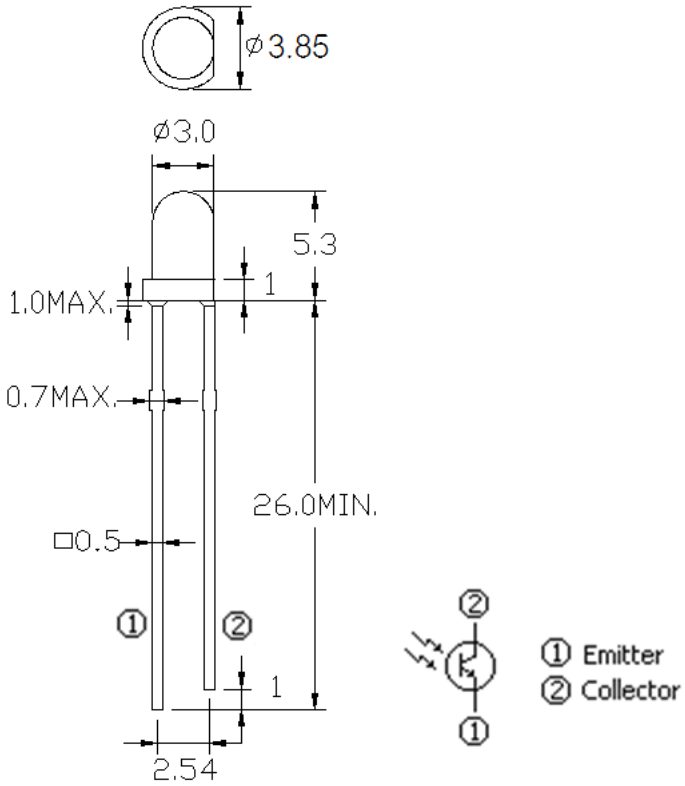
Parameter	Symbol	Ratings	Unit
Emitter-Collector Breakdown Voltage	BV_{ECO}	5	V
Collector-Emitter Sustaining Voltage	V_{CE}	30	V
Power Dissipation	P_D	100	mW
Operating Temperature	T_{OPR}	-40~+85	°C
Storage Temperature	T_{STG}	-50~+100	°C
Relative Humidity at 85°C	hr	85	%

Electrical & Optical Characteristics (Ta=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Collector-Emitter Sustaining Voltage	V_{CE}	30	60	---	V	I_c=0.5mA Ee=0mW/cm^2
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	---	0.4	---	V	I_c=100μA Ee=0.6mW/cm^2
Emitter-Collector Breakdown Voltage	BV_{ECO}	5	7	---	V	I_e=100μA Ee=0mW/cm^2
Dark Current	I_D	---	---	100	nA	V_{CE}=10V Ee=0mW/cm^2
Photo Current	I_L	1	4	---	mA	V_{CE}=5V Ee=1.0mW/cm^2
Rise Time (10% to 90%)	T_R	---	10	---	μS	V_{CC}=5V I_L=800μA RL=1K OHM
Fall Time (90% to 10%)	T_F	---	15	---	μS	

OUTLINE DIMENSION:

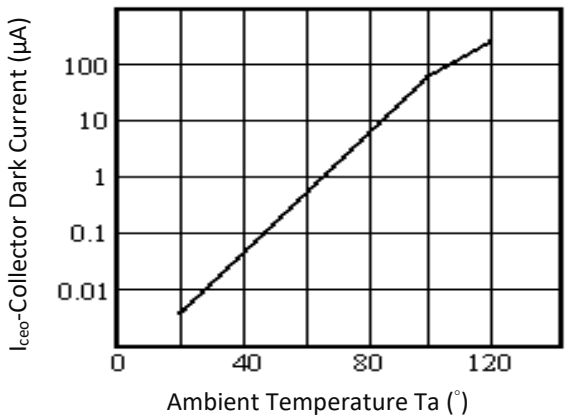
Package Dimension:



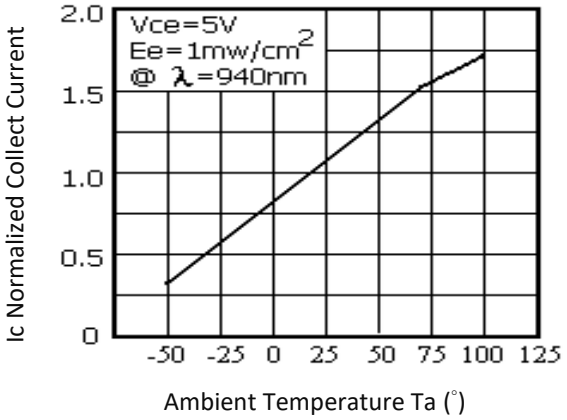
1. All dimensions are in millimetre (mm).
2. Tolerance ±0.2mm, unless otherwise noted.

ELECTRO-OPTICAL CHARACTERISTICS:

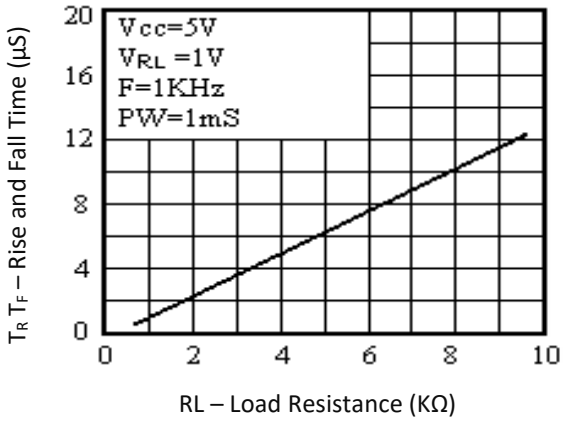
Collector Dark Current v.s. Ambient Temperature



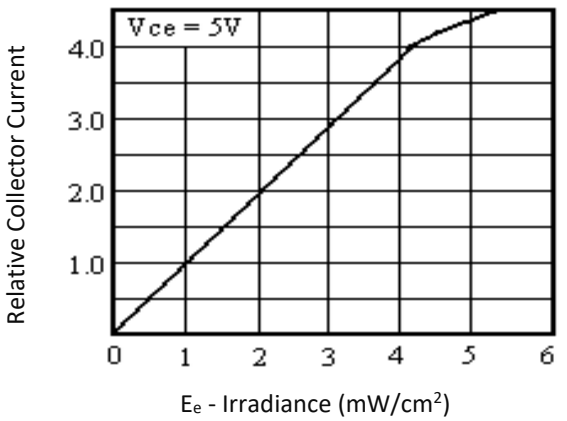
Normalized Collect Current v.s. Ambient Temp.



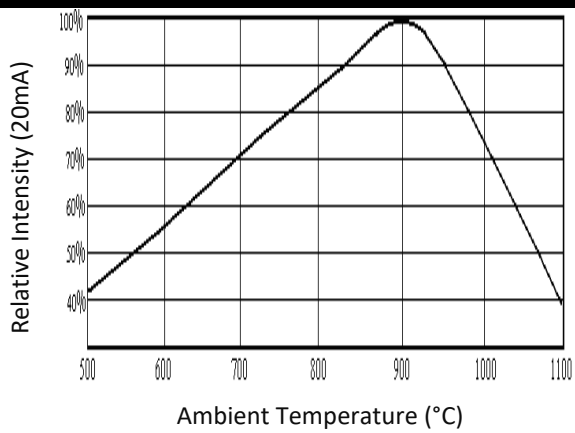
Rise and Fall Time v.s. Load Resistance



Relative Collector Current v.s. Irradiance



Phototransistor Relative Curves

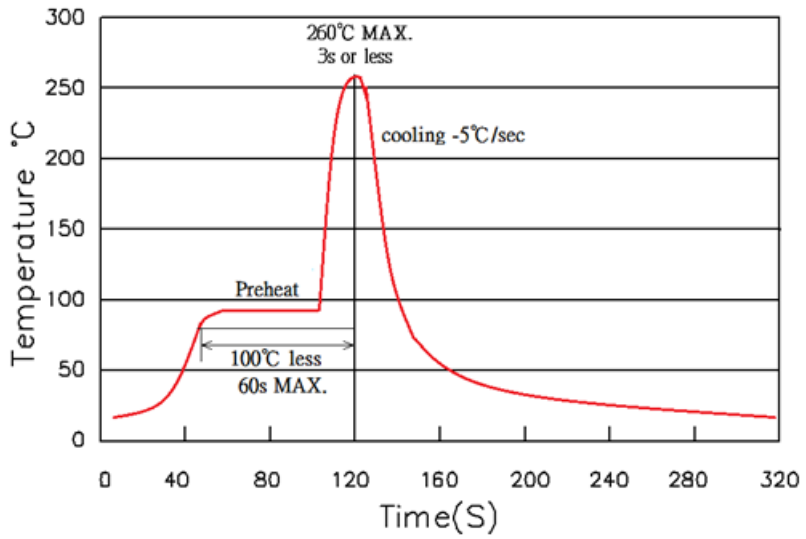


RECOMMENDED SOLDERING PROFILE:

Hand Solder (Solder Iron):

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

Soldering Heat (DIP):



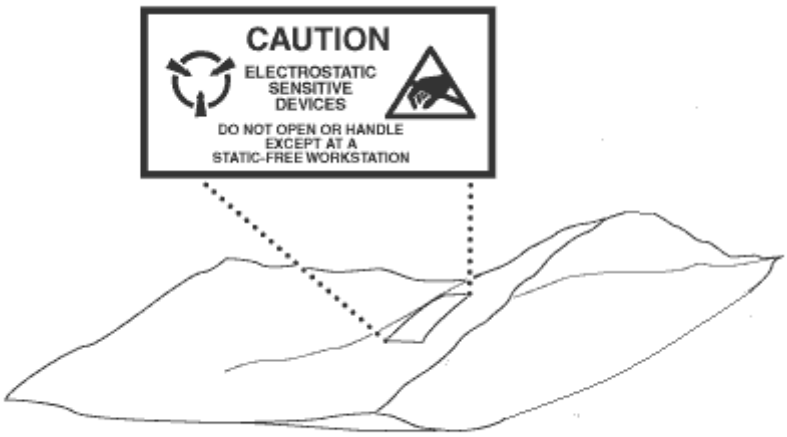
Note:

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

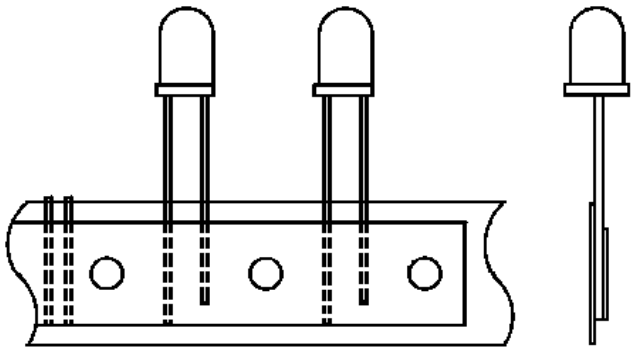
PACKING SPECIFICATION:

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.

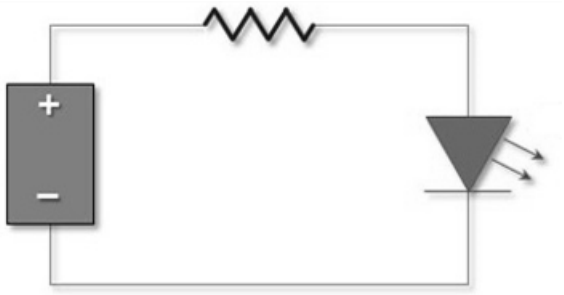
Baking:

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	16/04/2023	Datasheet set-up.
A1.1	14/12/2023	Revise storage condition.