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

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

► PTH/THT Lamp

► 3mm Round 5.3t

► Phototransistor (PT) for matching N0F00L29

N0P47L84 (Bulk)
N0P47L84T (Tape)

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APPLICATIONS:

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

3mm Round Lamp

RoHS Compliant | Pb

FEATURES:

N0P47L84 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.):** 950nm
- **Receiving Angle:** 30°
- **Materials:**
  - Die: Silicon
  - Resin: Epoxy (Black Clear)
- **Operating Temperature:** -40~+85°C
- **Storage Temperature:** -50~+100°C
- **Soldering Methods:** Hand; Soldering Heat (DIP)
- **Packing:** 500pcs/bulk; 2000pcs/tape (Ammo Pack)

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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	H_R	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/cm²
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	---	0.4	---	V	I_c=100µA Ee=0.6mW/cm²
Emitter-Collector Breakdown Voltage	BV_{ECO}	5	7	---	V	I_e=100µA Ee=0mW/cm²
Dark Current	I_D	---	---	100	nA	V_{CE}=10V Ee=0mW/cm²
Photo Current	I_L	1	5	---	mA	V_{CE}=5V Ee=1.0mW/cm²
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:
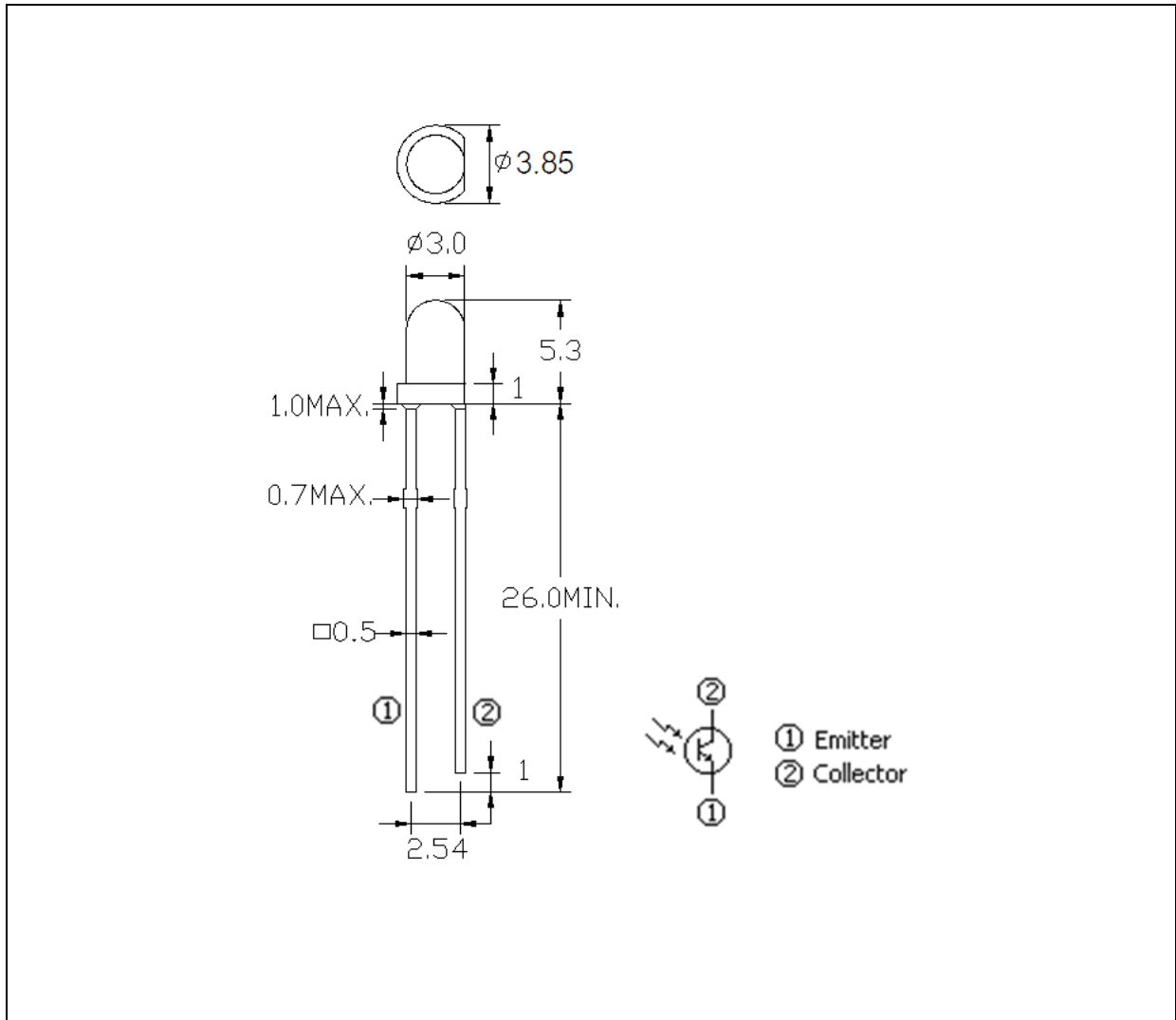
1. All dimensions are in millimetre (mm).
2. Tolerance ±0.2mm, unless otherwise noted.

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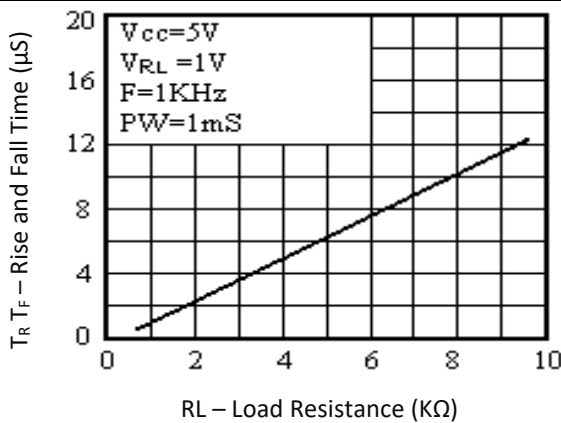
ELECTRO-OPTICAL CHARACTERISTICS:
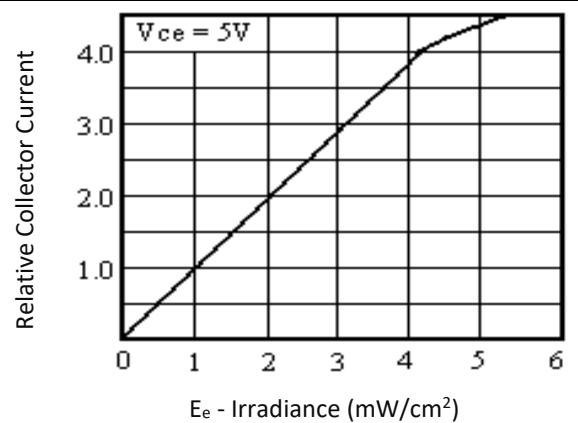
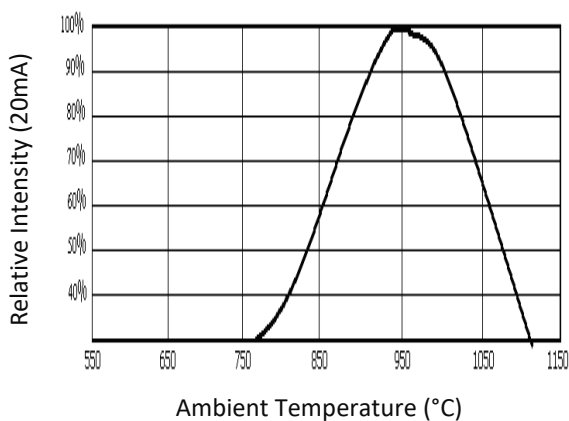| Collector Dark Current v.s. Ambient Temperature	Normalized Collect Current v.s. Ambient Temp.
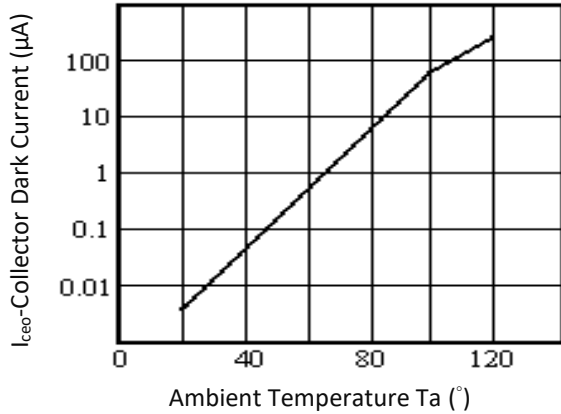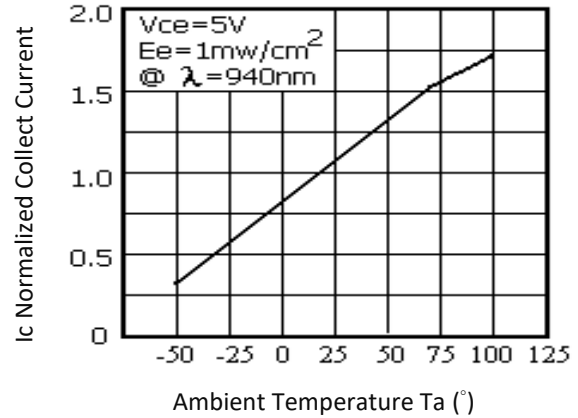
Rise and Fall Time v.s. Load Resistance	Relative Collector Current v.s. Irradiance

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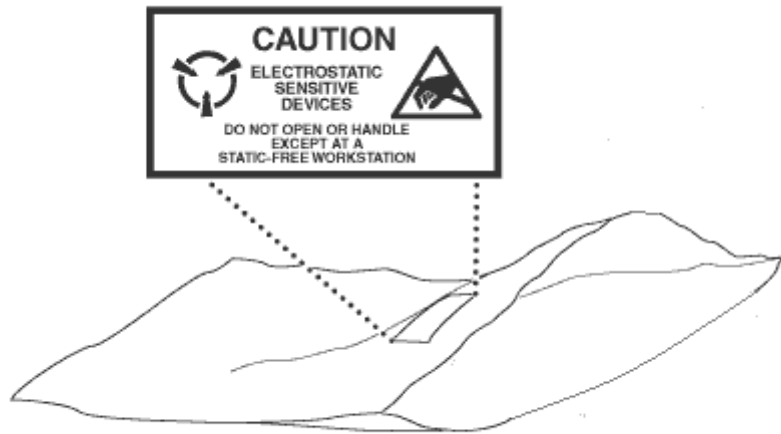1. Maximum reflow soldering: 1 time.
2. Before, during, and after soldering, should not apply stress on the components and PCB board.
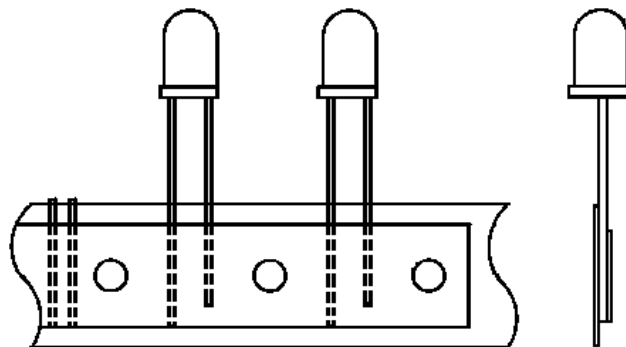
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PACKING SPECIFICATION:

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 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.

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REVISION RECORD:

Version	Date	Summary of Revision
A1.0	16/04/2023	Datasheet set-up.
A1.1	14/12/2023	Revise storage condition.