

# **LG-05PD2D94Q-557K-B-T**

## **DATA SHEET**

SPEC. NO. : SZ21051402  
DATE : 2021/05/14  
REV. : A/0

Approved By:

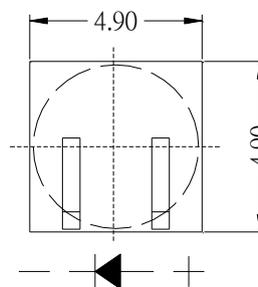
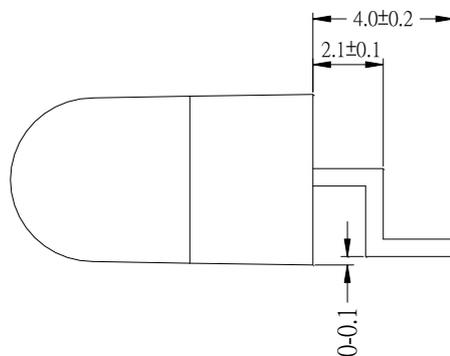
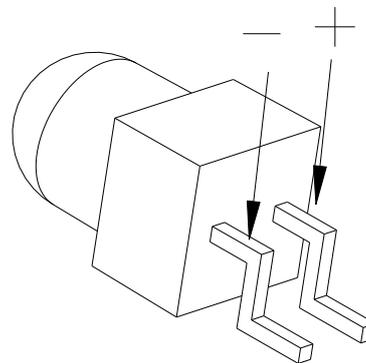
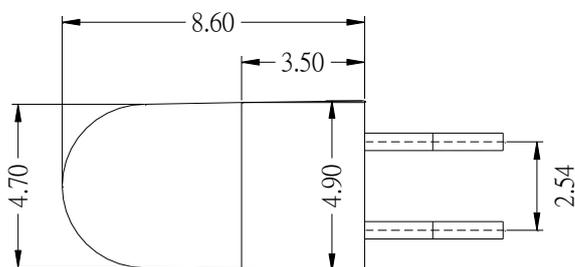
Checked By:

Prepared By:

## Features

- ◆ Pb free product—RoHS compliant
- ◆ High Photo Sensitivity
- ◆ Reliable and rugged
- ◆ Long life – solid state reliability
- ◆ Sensitivity angle: 55 °

## Package Dimension



Part NO.	Chip Material	Lens Color
LG-05PD2D94Q-557K-B-T	Silicon	Black

### Notes:

1. All dimensions are in millimeters.
2. Tolerance is  $\pm 0.20$ mm unless otherwise noted.
3. Protruded resin under flange is 1.0mm max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

## Absolute Maximum Ratings at Ta=25°C

Parameter	MAX.	Unit
Power Dissipation	150	mW
Reverse Voltage	30	V
Electrostatic Discharge (HBM) <sup>*3</sup>	8000	V
Operating Temperature	-40°C to + 85°C	
Storage Temperature	-40°C to + 100°C	
IR Reflow Temperature	245°C for 30 seconds	

### 1. Storage:

The storage ambient for the LEDs should not exceed 30 °C temperature or 70% relative humidity.

It is recommended that LEDs out of their original packaging are used within three months.

For extended storage out of their original packaging, it is recommended that the LEDs be stored in a sealed container with appropriate desiccant or in desiccators with nitrogen ambient.

### 2. Precautions in handling:

- When soldering, leave 2mm of minimum clearance from the resin to the soldering point.
- Dipping the resin to solder must be avoided.
- Correcting the soldered position after soldering must be avoided.
- In soldering, do not apply any stress to the lead frame particularly when heated.
- When forming a lead, make sure not to apply any stress inside the resin.
- Lead forming must be done before soldering.
- It is necessary to cut the lead frame at normal temperature.

### 3. Caution in ESD:

Static Electricity and surge damages the LED. It is recommend to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.

## Electrical Optical Characteristics at Ta=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Range Of Spectral Bandwidth	$\lambda_{0.5}$	840	---	1100	nm	---
Reverse Light Current	$I_L$	65	84	---	$\mu\text{A}$	$V_R=5\text{V}$ $E_e=1\text{mW}/\text{cm}^2$ $\lambda_p=940\text{nm}$
Reverse Dark Current	$I_D$	---	---	30	nA	$V_R=10\text{V}$ $E_e=0\text{mW}/\text{cm}^2$
Reverse Voltage	$V_{(R)}$	30	---	---	V	$I_R=100\mu\text{A}$
Forward Voltage	$V_F$	---	---	1.5	V	$I_F=10\text{mA}$
Viewing Angle	$2\theta_{1/2}$	---	55	---	Deg.	(Note 1)
Rise Time/ Fall Time	tr/tf	---	50	---	ns	$V_R=10\text{V}$ $R_L=1\text{k}\Omega$
Total Capacitance	$C_T$	---	25	---	pF	$V_R=5\text{V}$ $E_e=0\text{mW}/\text{cm}^2$ $f=1.0\text{MHz}$

### Note:

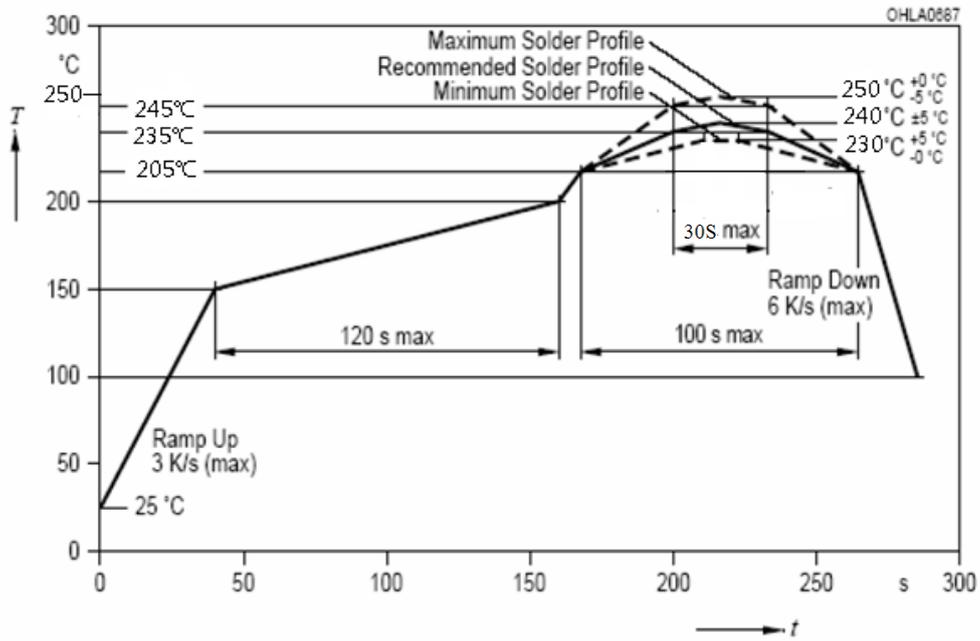
- $\theta_{1/2}$  is the off-axis angle at which the Reverse Light Current is half the axial Reverse Light Current.
- The  $I_L$  guarantee should be added  $\pm 15\%$  tolerance.

## Infrared Photo Diode Specification

- Commodity: Infrared Photo diode
- Intensity Bin Limits ( $V_R=5\text{V}$ ,  $E_e=1\text{mW}/\text{cm}^2$ ,  $\lambda_p=940\text{nm}$ )

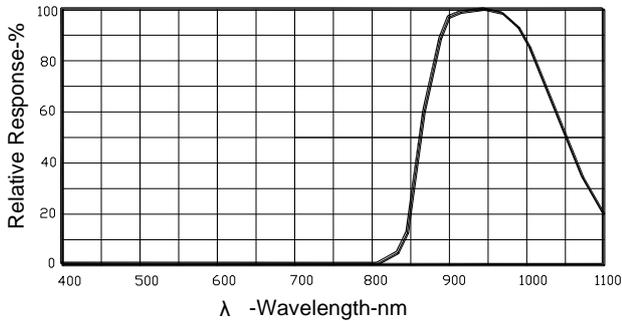
BIN CODE	Min.(uA)	Max.(uA)
38	65	84
39	84	110

### Suggest IR Reflow Condition For Lead Free:

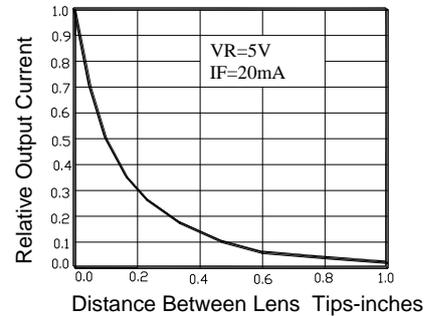


## Typical Electrical / Optical Characteristics Curves (25°C Ambient Temperature Unless Otherwise Noted)

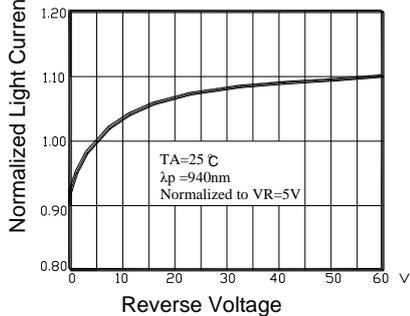
Relative Response vs. Wavelength



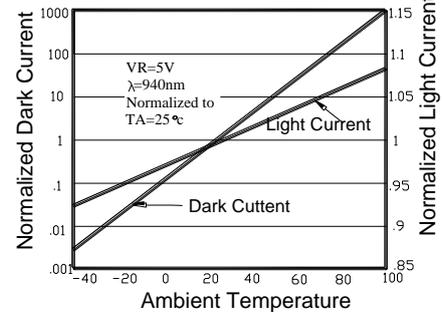
Coupling Characteristics



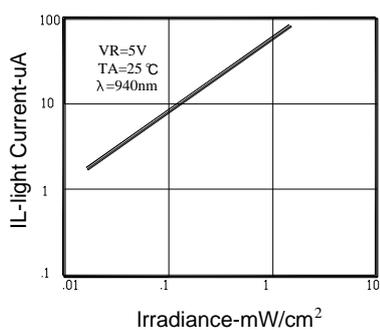
Normalized Light Current vs Reverse Voltage



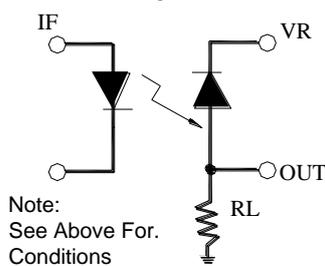
Normalized Light and Dark Current vs Ambient Temperature



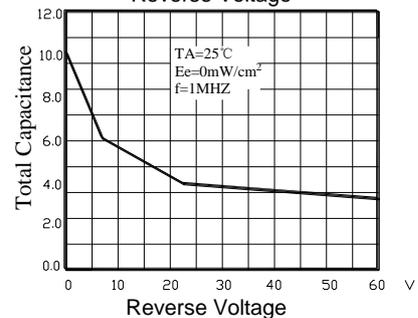
Light Current vs. Irradiance



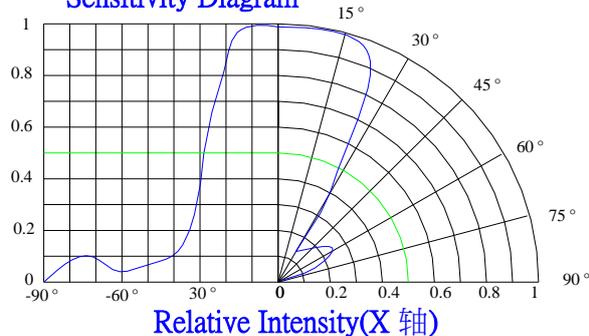
Switching Time Test Circuit



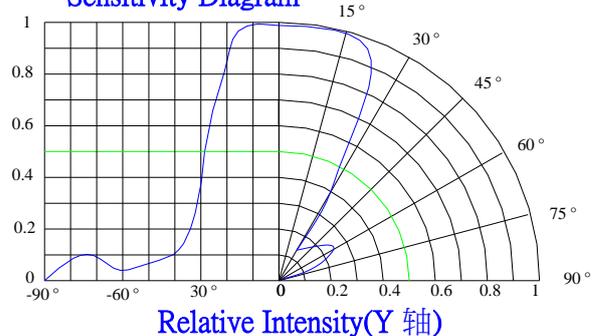
Total Capacitance vs Reverse Voltage



Sensitivity Diagram

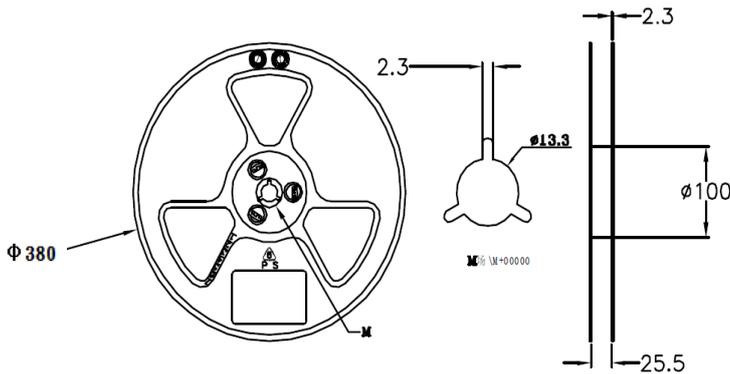
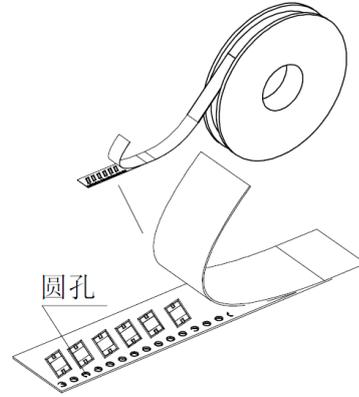
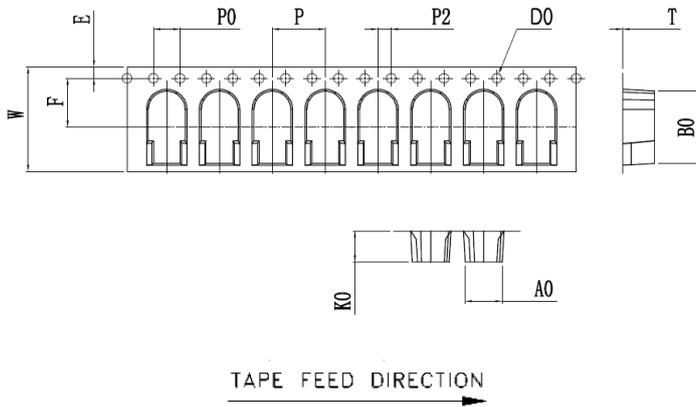


Sensitivity Diagram



## Package

### Package Dimensions



Item	Specification	
	Minum	Maximum
W	15.97	16.3
P	7.9	8.1
E	1.65	1.85
F	7.4	7.6
D	1.5	1.6
P0	3.9	4.1
P0x10	39.8	40.2
P2	1.9	2.1
A0	5.2	5.4
B0	10.6	10.8
K0	4.8	5.0

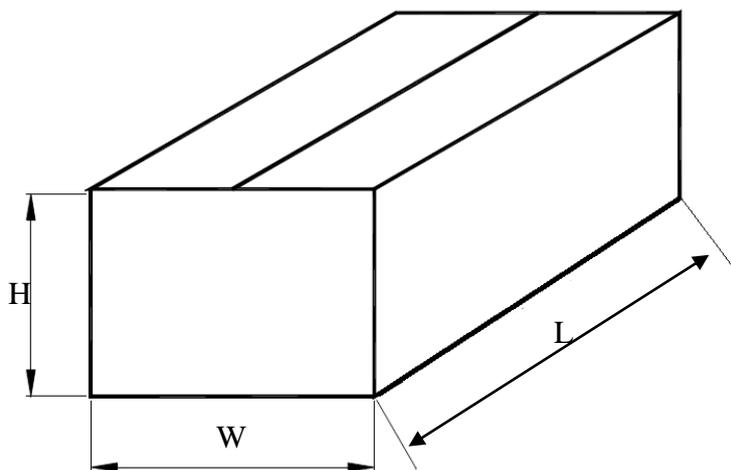
### Notes:

1. All dimensions in millimeters.
2. All dimensions meet EIA-481-C requirements.
3. Cover tape by a heat sealing manner.

## Package Spec:

**1.2000pcs per reel .**

**15 reel per carton/Total 30000pcs per carton.**



Item	Specification	
	minnum	Maximum
L	465	475
W	405	415
H	405	415