Luckylight

3mm Round Standard T-1 With Flange Type Silicon PIN Photodiode Technical Data Sheet

Part No.: LL-304PDC2E

Features:

- ◇ Fast response time.
- ◇ High photo sensitivity.
- ◇ Small junction capacitance.
- ◇ The product itself will remain within RoHS compliant Version.

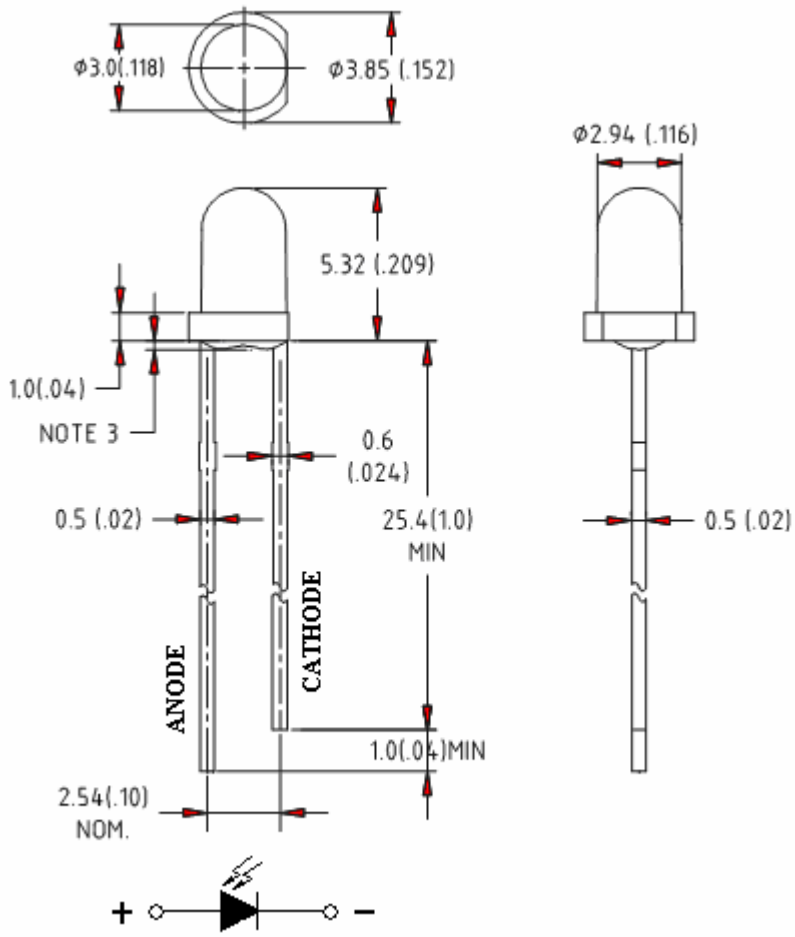
Descriptions:

- ◇ The LL-304PD2E is a high speed and high sensitive PIN photodiode in a standard Φ3 epoxy package. Due to its water clear epoxy the device is sensitive to visible and infrared radiation.

Applications:

- ◇ High speed photo detector.
- ◇ Automatic door sensor.
- ◇ Security system.
- ◇ Game machine.
- ◇ Camera.

Package Dimension:



Part No.	Chip Material	Lens Color	Source Color
LL-304PDC2E	Silicon	Water Clear	Photodiode Receiver

Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25 mm (.010") unless otherwise noted.
3. Protruded resin is 1.00 mm (.039") max.
4. Specifications are subject to change without notice.

Absolute Maximum Ratings at Ta=25℃

Parameters	Symbol	Max.	Unit
Power Dissipation	PD	150	mW
Reverse Voltage	VR	32	V
Operating Temperature Range	Topr	-25℃ to +80℃	
Storage Temperature Range	Tstg	-40℃ to +85℃	
Lead Soldering Temperature [4mm (.157″) From Body]	Tsld	260℃	

Electrical Optical Characteristics at Ta=25℃

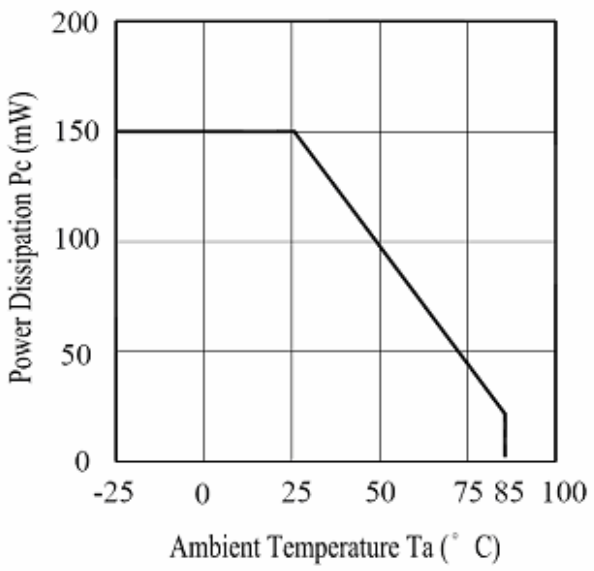
Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Rang of Spectral Bandwidth	λ0.5	400	---	1100	nm	
Wavelength of Peak Sensitivity	λp	---	940	---	nm	
Open-Circuit Voltage	V_{OC}	---	0.44	---	V	Ee=5mW/cm^2 λp=940nm
Short-Circuit Current	I_{SC}	---	10	---	μA	Ee=1mW/cm^2, λp=940nm, V_R=5V
Reverse Light Current	I_L	---	10	---		
Dark Current	I_D	---	---	10	nA	Ee=0mW/cm^2, V_R=10V
Reverse Breakdown	BV_R	32	170	---	V	Ee=0mW/cm^2, IR=100μA
Total Capacitance	Ct	---	10	---	pF	Ee=0mW/cm^2, f=1MHZ, V_R=5V
Rise Time (10% TO 90%)	Tr	---	10	---	ns	RL=100Ω, V_R=10V
Fall Time (90% TO 10%)	Tf	---	10	---		
View Angle	2θ1/2	---	40	---	deg	IF=20mA

Notes:

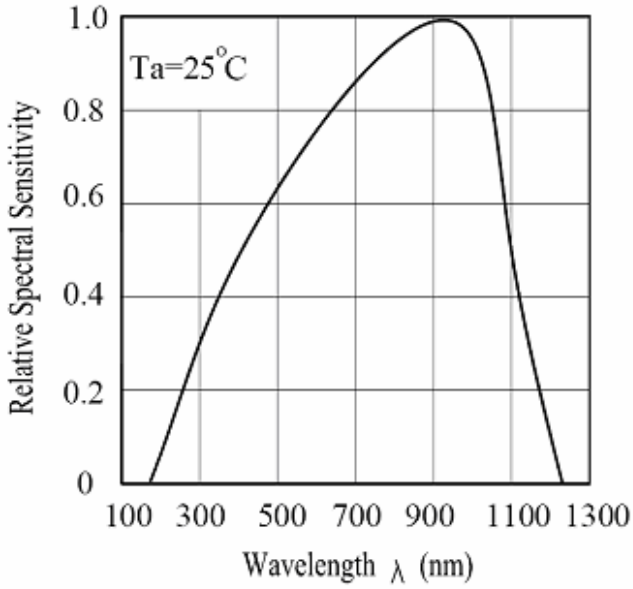
1. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

Typical Electrical / Optical Characteristics Curves
(25℃ Ambient Temperature Unless Otherwise Noted)

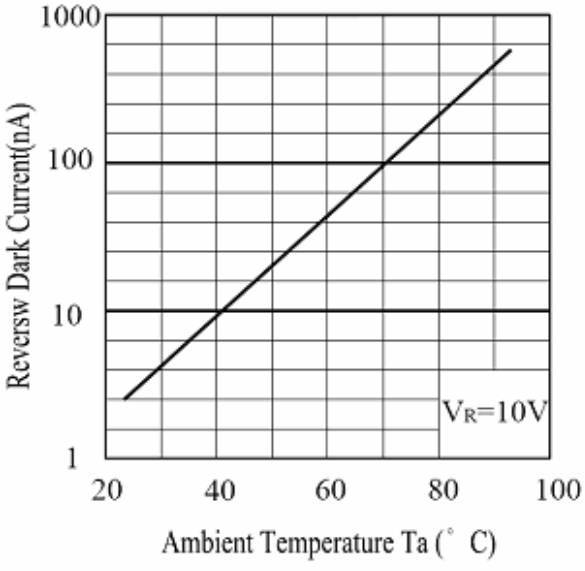
Power Dissipation vs. Ambient Temperature



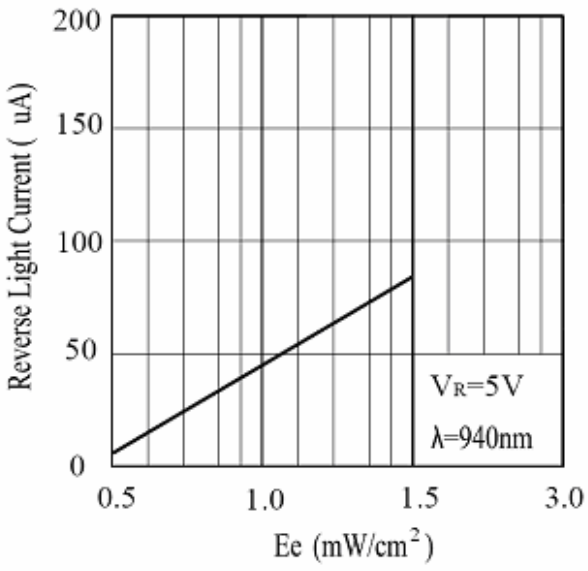
Spectral Sensitivity



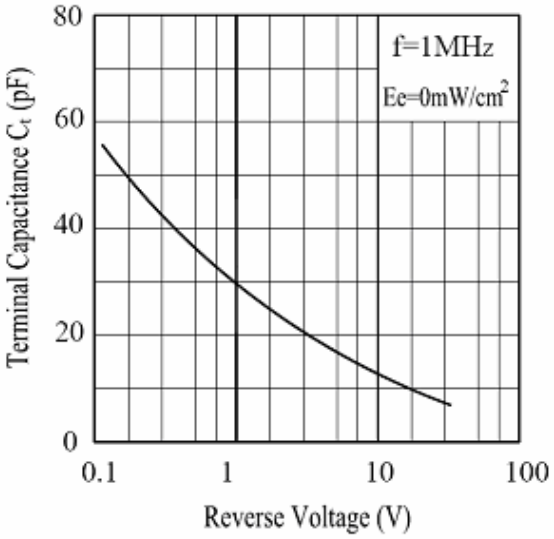
Dark Current vs. Ambient Temperature



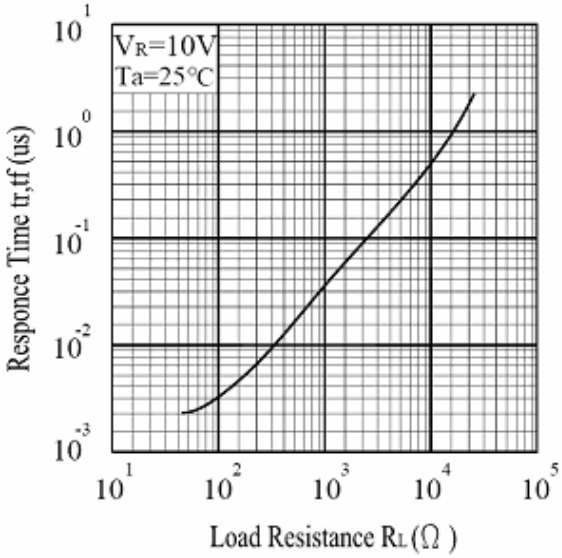
Reverse Light Current vs. Ee



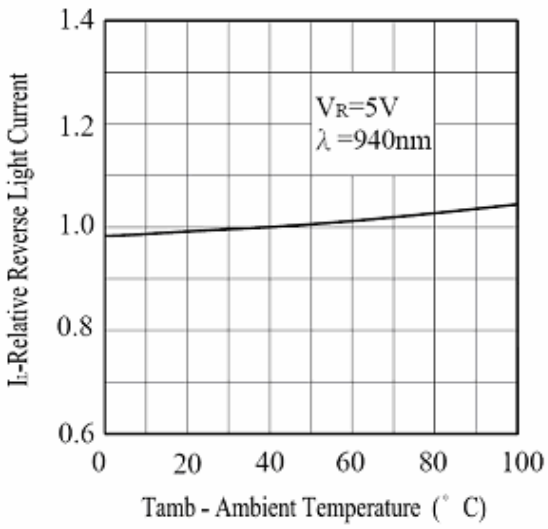
Terminal Capacitance vs. Reverse Voltage



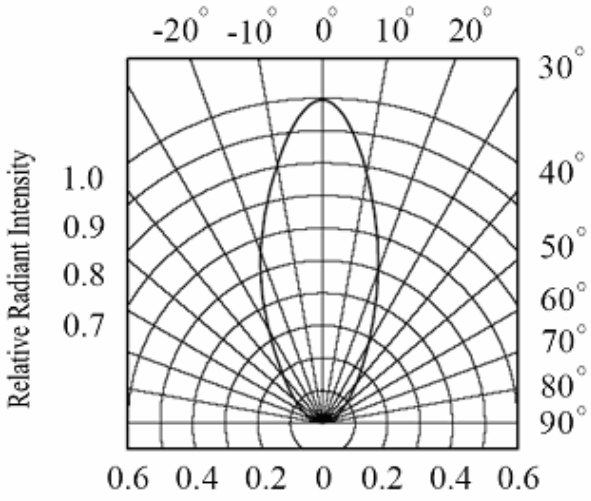
Response Time vs. Load Resistance



Relative Reverse Light Current vs. Ambient Temperature (°C)



Relative Radiant Intensity vs. Angular Displacement



Please read the following notes before using the datasheets:

1. Over-current-proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 Do not open moisture proof bag before the products are ready to use.

2.2 Before opening the package, the LEDs should be kept at 30℃ or less and 90%RH or less.

2.3 The LEDs should be used within a year.

2.4 After opening the package, the LEDs should be kept at 30℃ or less and 70%RH or less.

2.5 The LEDs should be used within 168 hours (7 days) after opening the package.

3. Soldering Condition

3.1 Pb-free solder temperature profile.

3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 260℃ for 5 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

6. Caution in ESD

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

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