



5mm Round Standard T-1 3/4 With Flange Type
Silicon PIN Photodiode
Technical Data Sheet

Part No.: LL-503PDD2E

Features:

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

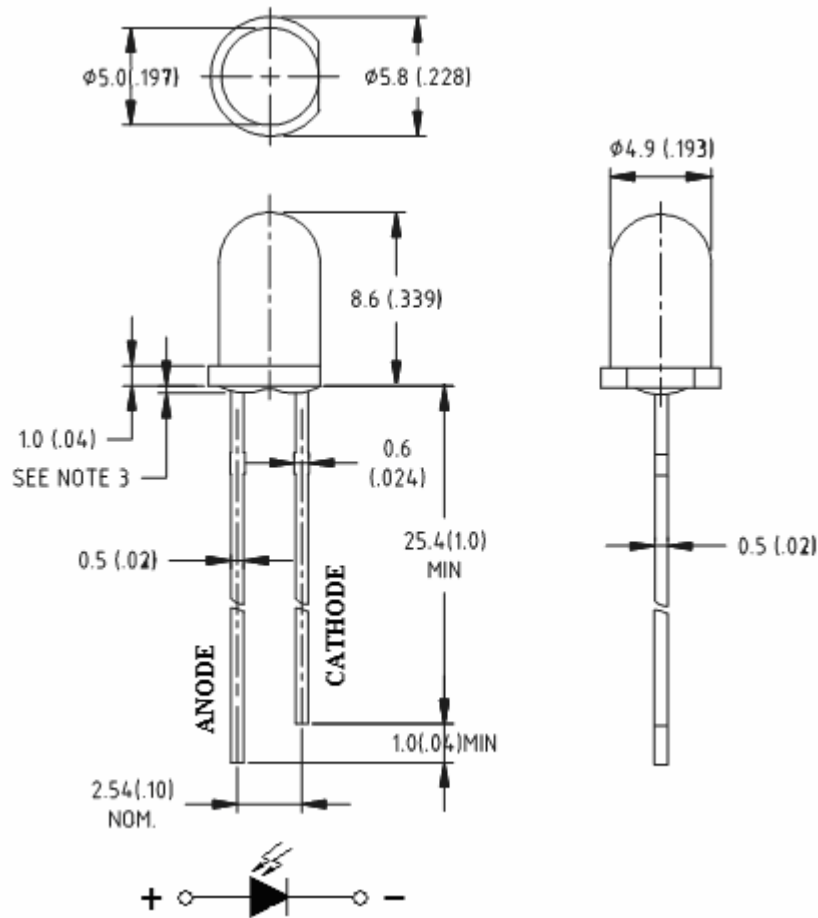
Descriptions:

- ◇ The 503PD is a high speed and high sensitive PIN photodiode in a standard 5Φ plastic package. Due to its black epoxy the device is sensitive to near and infrared radiation.

Applications:

- ◇ High speed photo detector.
- ◇ Security system.
- ◇ Game machine.

Package Dimension:



Part No.	Chip Material	Lens Color	Source Color
LL-503PDD2E	Silicon	Black	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°C

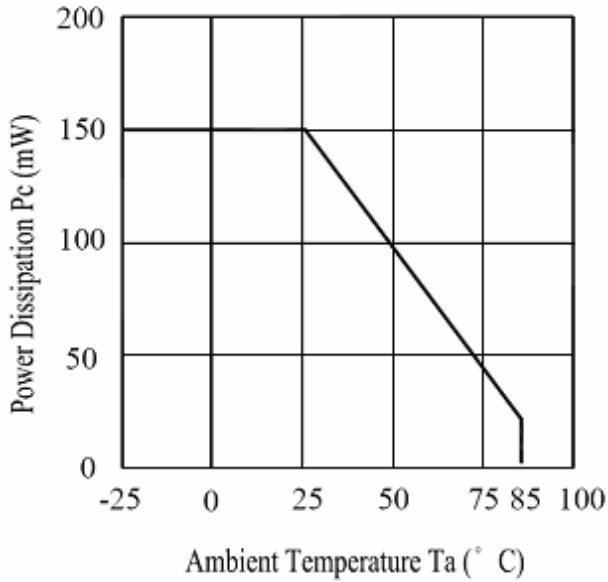
Parameters	Symbol	Max.	Unit
Power Dissipation	PD	150	mW
Reverse Voltage	VR	35	V
Operating Temperature Range	Topr	-25°C to +80°C	
Storage Temperature Range	Tstg	-40°C to +85°C	
Lead Soldering Temperature [4mm (.157") From Body]	Tsld	260°C	

Electrical Optical Characteristics at Ta=25°C

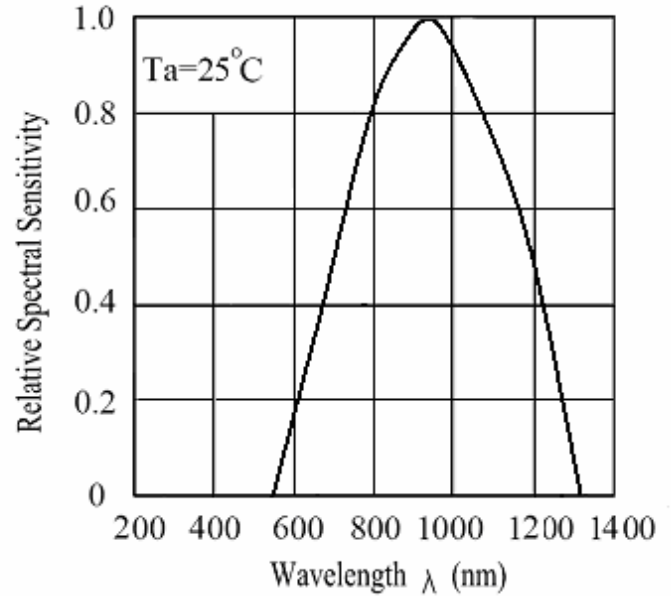
Parameters	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Rang Of Spectral Bandwidth	$\lambda_{0.5}$	700	---	1200	nm	
Wavelength Of Peak Sensitivity	λ_p	---	940	---	nm	
Open-Circuit Voltage	VOC	0.5	---	1.3	V	Ee=5mW/cm ² , λ_p =940nm
Short-Circuit Current	ISC	---	8.0	---	μ A	Ee=1mW/cm ² , λ_p =940nm, VR=5V
Reverse Light Current	IL	---	11	---		Ee=5mW/cm ² , λ_p =940nm VR=5V
Dark Current	Id	---	2	10	nA	VR=10V, Ee=0mW/cm ²
Reverse Breakdown	BVR	35	---	---	V	Ee=0mW/cm ² , IR=100 μ A
Total Capacitance	Ct	---	14	---	pF	Ee=0mW/cm ² , VR=3V, f=1MHz
Rise/Fall Time	Tr/Tf	---	45/45	---	ns	RL=1K Ω , VR=10V

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

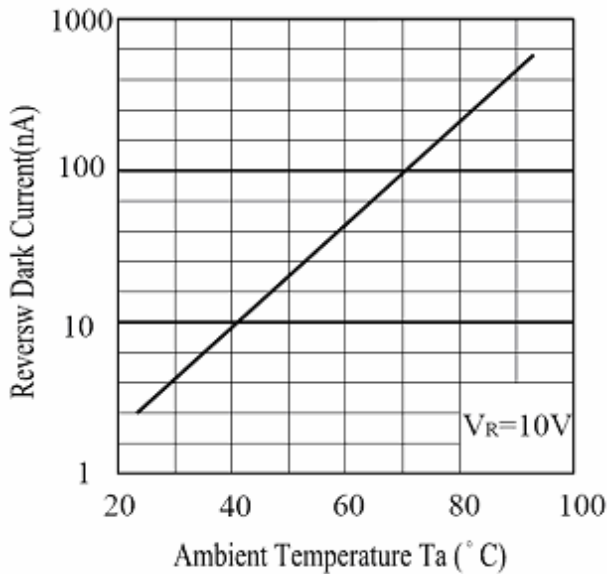
Power Dissipation vs. Ambient Temperature



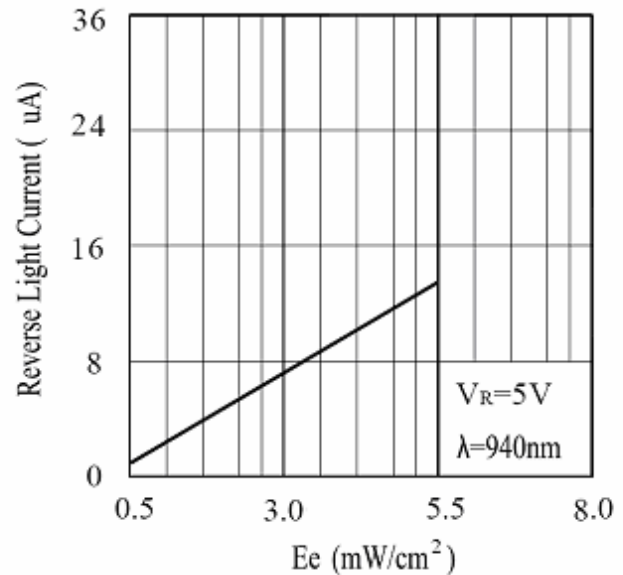
Spectral Sensitivity



Dark Current vs. Ambient Temperature

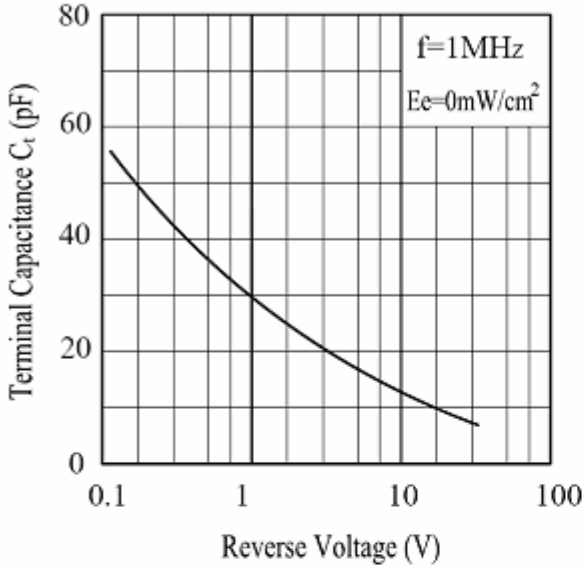


Reverse Light Current vs. E_e

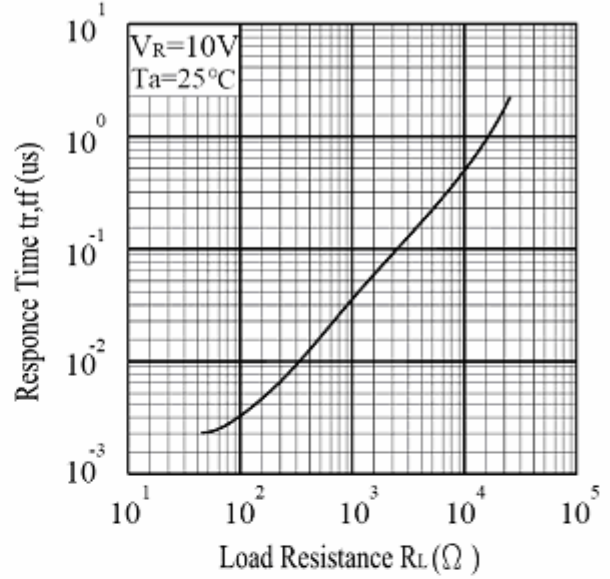




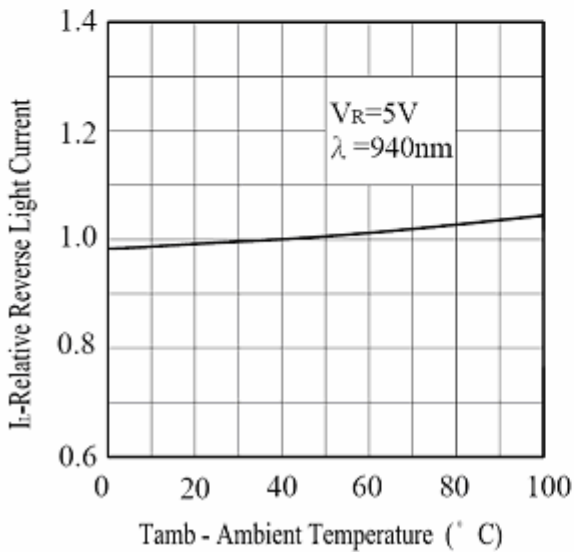
Terminal Capacitance vs. Reverse Voltage



Response Time vs. Load Resistance



Relative Reverse Light Current vs. Ambient Temperature ($^\circ\text{C}$)



Please read the following notes before using the product:

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 Photodiode should be kept at 30°C or less and 90%RH or less.

2.3 The Photodiode should be used within a year.

2.4 After opening the package, the Photodiode should be kept at 30°C or less and 70%RH or less.

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

3. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 260°C 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.

4. Repairing

Repair should not be done after the Photodiode 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 Photodiode will or will not be damaged by repairing.

5. Caution in ESD

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