

## Technical Data Sheet

### 5mm Silicon PIN Photodiode , T-1 3/4

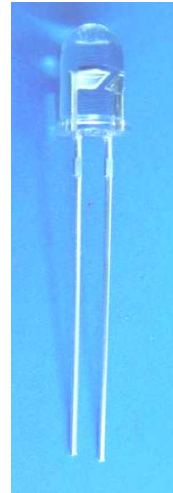
#### PD333-3C/H0/L2

#### Features

- Fast response time
- High photo sensitivity
- Small junction capacitance
- Pb free
- The product itself will remain within RoHS compliant version.

#### Descriptions

PD333-3C/H0/L2 is a high speed and high sensitive PIN photodiode in a standard 5  $\phi$  plastic package. Due to its water clear epoxy the device is sensitive to visible and infrared radiation.



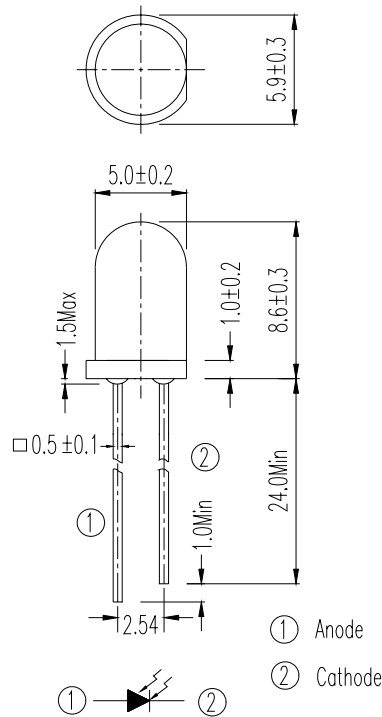
#### Applications

- High speed photo detector
- Security system
- Camera

#### Device Selection Guide

| LED Part No. | Chip     | Lens Color  |
|--------------|----------|-------------|
|              | Material |             |
| PD           | Silicon  | Water clear |

**Package Dimensions**



- Notes:** 1.All dimensions are in millimeters  
2.Tolerances unless dimensions  $\pm 0.25\text{mm}$

**Absolute Maximum Ratings (Ta=25°C)**

| Parameter                  | Symbol    | Rating    | Units |
|----------------------------|-----------|-----------|-------|
| Reverse Voltage            | $V_R$     | 32        | V     |
| Power Dissipation          | $P_d$     | 150       | mW    |
| Lead Soldering Temperature | $T_{sol}$ | 260       | °C    |
| Operating Temperature      | $T_{opr}$ | -25 ~ +85 | °C    |
| Storage Temperature        | $T_{stg}$ | -40 ~ +85 | °C    |

**Notes:** \*1:Soldering time  $\leq 5$  seconds.

**Electro-Optical Characteristics (Ta=25°C)**

| Parameter                      | Symbol           | Condition  | Min. | Typ.  | Max. | Units   |
|--------------------------------|------------------|--|------|-------|------|---------|
| Rang of Spectral Bandwidth     | $\lambda_{0.5}$  | -----  | 400  | ---   | 1100 | nm      |
| Wavelength of Peak Sensitivity | $\lambda_p$      | -----  | ---  | 940   | ---  | nm      |
| Open-Circuit Voltage           | $V_{oc}$         | Ee=5m W/cm <sup>2</sup><br>$\lambda_p=940nm$             | ---  | 0.39  | ---  | V       |
| Short- Circuit Current         | $I_{sc}$         | Ee=1m W/cm <sup>2</sup><br>$\lambda_p=940nm$             | ---  | 40    | ---  | $\mu A$ |
| Reverse Light Current          | $I_L$            | Ee=1m W/cm <sup>2</sup><br>$\lambda_p=940nm$<br>$V_R=5V$ | 36   | 40    | ---  |         |
| Dark Current                   | $I_d$            | Ee=0m W/cm <sup>2</sup><br>$V_R=10V$                     | ---  | 5     | 30   | nA      |
| Reverse Breakdown              | $BV_R$           | Ee=0m W/cm <sup>2</sup><br>$I_R=100 \mu A$               | 32   | 170   | ---  | V       |
| Total Capacitance              | $C_t$            | Ee=0m W/cm <sup>2</sup><br>$V_R=5V$<br>$f=1MHZ$          | ---  | 18    | ---  | pF      |
| Rise/Fall Time                 | $t_r/t_f$        | $V_R=10V$<br>$R_L=1K \Omega$                             | ---  | 45/45 | ---  | nS      |
| View Angle                     | $2 \theta_{1/2}$ | $I_F=20mA$   | --   | 80    | --   | deg     |

**Typical Electro-Optical Characteristics Curves**

Fig.1 Power Dissipation vs. Ambient Temperature

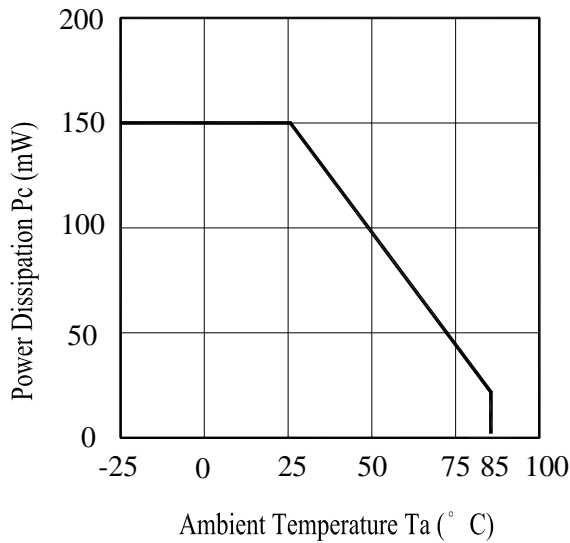


Fig.2 Spectral Sensitivity

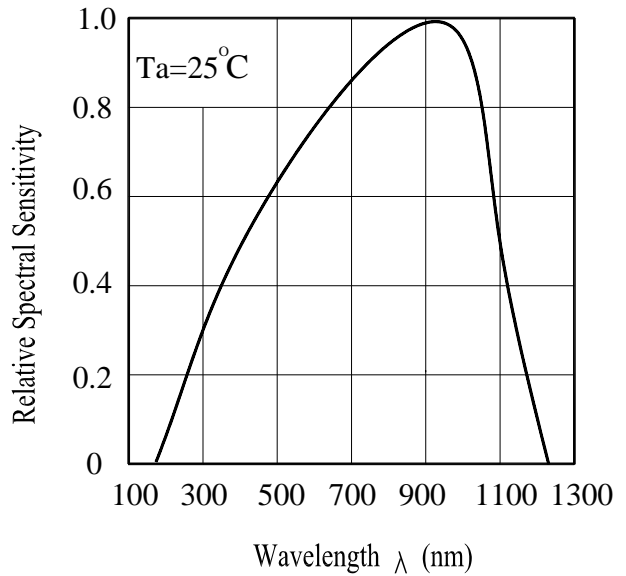


Fig.3 Dark Current vs. Ambient Temperature

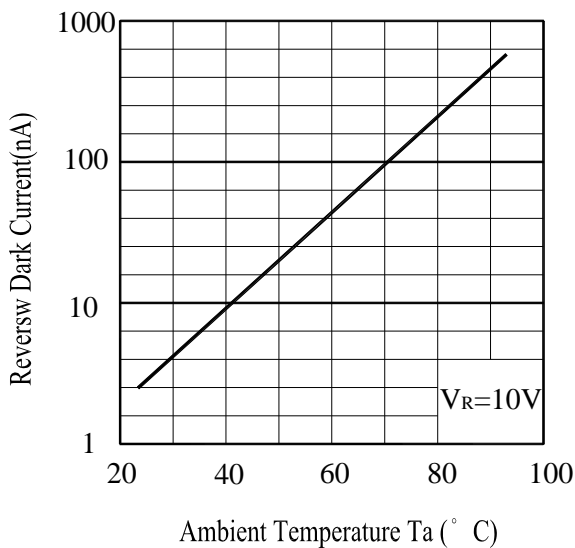
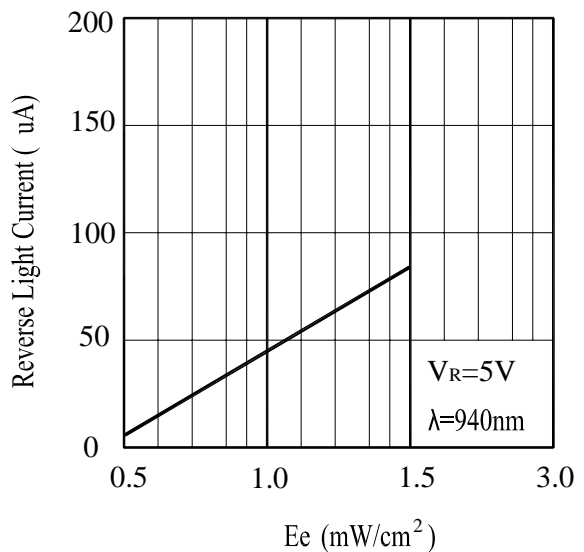


Fig. 4 Reverse Light Current vs.  $E_e$



**Typical Electro-Optical Characteristics Curves**

Fig.5 Terminal Capacitance vs.

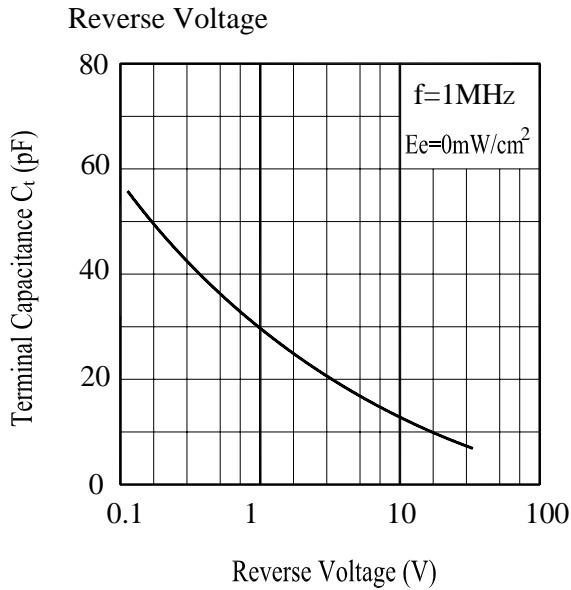


Fig.6 Response Time vs.

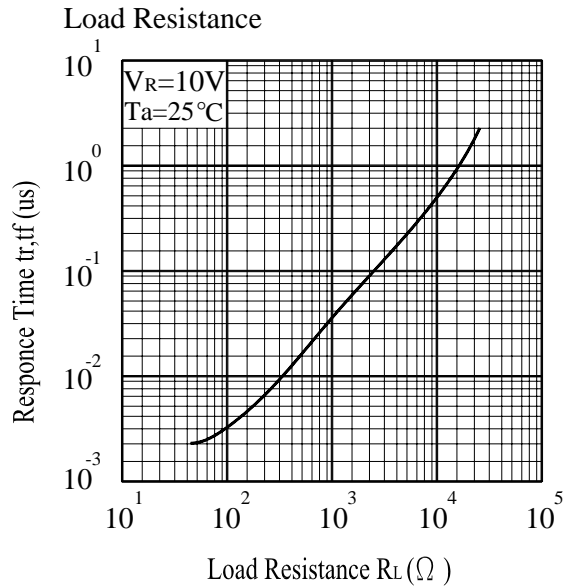


Fig.7 Relative Reverse Light Current vs. Ambient Temperature(°C)

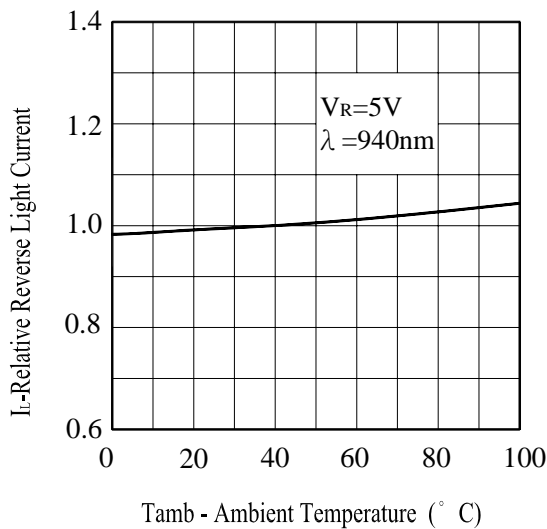
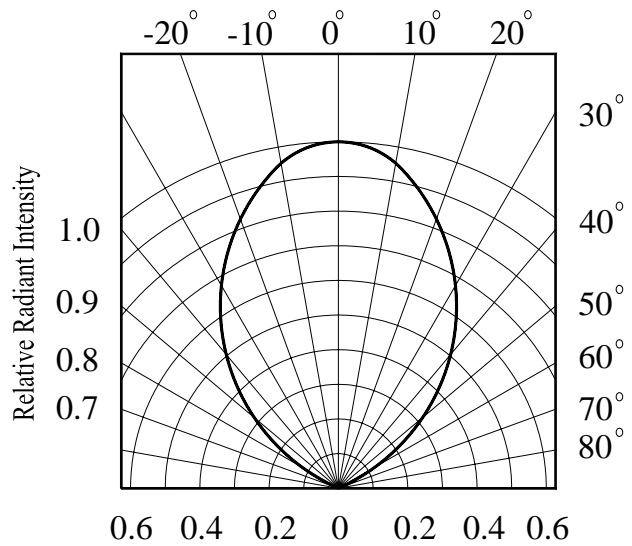


Fig.8 Relative Radiant Intensity vs. Angular Displacement



**Reliability Test Item And Condition**

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

| NO. | Item                               | Test Conditions   | Test Hours/<br>Cycles | Sample<br>Sizes | Failure<br>Judgement<br>Criteria                                       | Ac/R<br>e |
|-----|------------------------------------|---|-----------------------|-----------------|--|-----------|
| 1   | Solder heat                        | TEMP. : 260°C±5°C   | 10secs                | 22pcs           | $I_L \leq L \times 0.8$<br><br>L : Lower<br><br>Specification<br>Limit | 0/1       |
| 2   | Temperature Cycle                  | H : +100°C    ↑ 15mins<br>↓ 5mins<br>L : -40°C     ↓ 15mins | 300Cycles             | 22pcs           |  | 0/1       |
| 3   | Thermal Shock                      | H : +100°C    ↑ 5mins<br>↓ 10secs<br>L : -10°C     ↓ 5mins  | 300Cycles             | 22pcs           |  | 0/1       |
| 4   | High Temperature<br>Storage        | TEMP. : +100°C  | 1000hrs               | 22pcs           |  | 0/1       |
| 5   | Low Temperature<br>Storage         | TEMP. : -40°C   | 1000hrs               | 22pcs           |  | 0/1       |
| 6   | DC Operating Life                  | $V_R=5V$  | 1000hrs               | 22pcs           |  | 0/1       |
| 7   | High Temperature/<br>High Humidity | 85°C / 85% R.H  | 1000hrs               | 22pcs           |  | 0/1       |



## PD333-3C/H0/L2

### Packing Quantity Specification

1.500PCS/1Bag , 5Bags/1Box

2.10Boxes/1Carton

### Label Form Specification



CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

MADE IN TAIWAN: Production Place

### Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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