



DEVICE NUMBER : DTD-152-001      REV : 1.0  
ECN : \_\_\_\_\_      PAGE : 1/7

## 1206 Package Silicon PIN Photodiode

MODEL NO : PD15-22B/TR8

### ■ Features :

- Fast response time
- High photo sensitivity
- Small junction capacitance
- Package in 8mm tape on 7" diameter reel.

### ■ Description :

- PD15-22B/TR8 is a high speed and high sensitive PIN photodiode in miniature flat top view lens SMD package and it is molded in a black transparent plastic. The device is spectrally matched with the infrared emitting diode.

### ■ Applications :

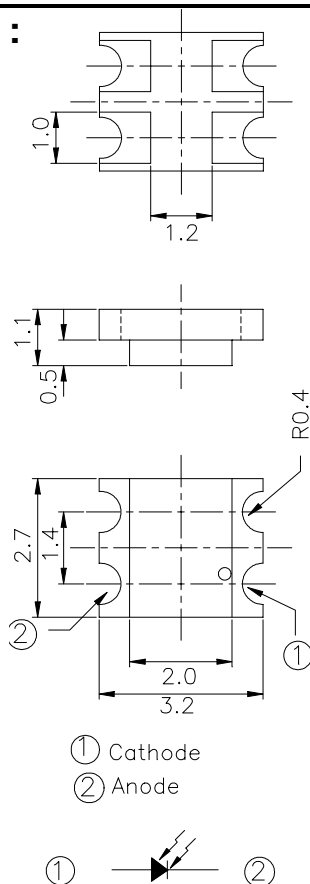
- High speed photo detector
- Copier
- Optoelectronic switch
- Game machine

| PART NO. | CHIP     | LENS COLOR |
|----------|----------|------------|
|          | MATERIAL |            |
| PD       | Silicon  | Black      |

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### ■ Package Dimensions :



### ■ Notes :

1. All dimensions are in millimeter.
2. General Tolerance:  $\pm 0.1\text{mm}$
3. Lens color : Black transparent.
4. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
5. These specification sheets include materials protected under copyright of EVERLIGHT corporation . Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent.
6. When using this product , please observe the absolute maximum ratings and the instructions for use 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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### ■ Absolute Maximum Ratings at $T_A = 25^\circ\text{C}$

| Parameter                                                                  | Symbol    | Rating    | Unit             | Notice |
|----------------------------------------------------------------------------|-----------|-----------|------------------|--------|
| Reversr Voltage                                                            | $V_R$     | 32        | V                |        |
| Operating Temperature                                                      | $T_{opr}$ | -25 ~ +85 | $^\circ\text{C}$ |        |
| Storage Temperature                                                        | $T_{stg}$ | -40 ~ +85 | $^\circ\text{C}$ |        |
| Lead Soldering Temperature                                                 | $T_{sol}$ | 260       | $^\circ\text{C}$ |        |
| Power Dissipation at(or below)<br>25 $^\circ\text{C}$ Free Air Temperature | $P_C$     | 150       | mW               |        |

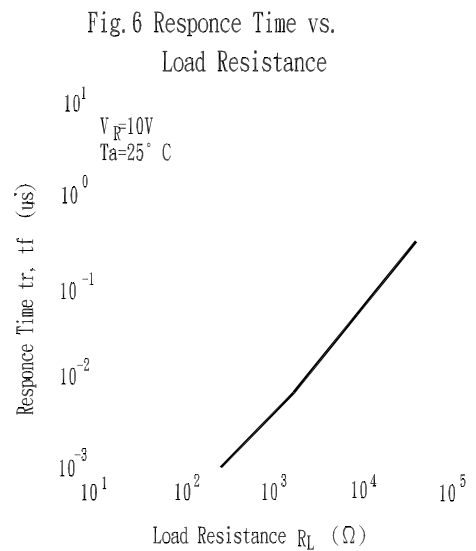
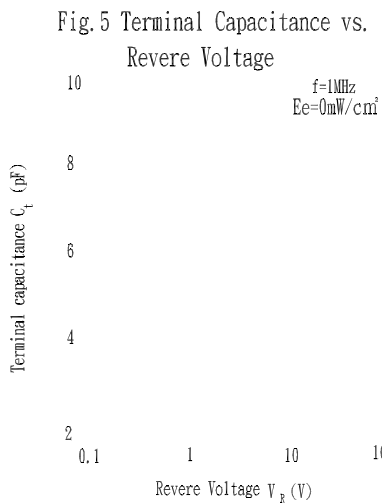
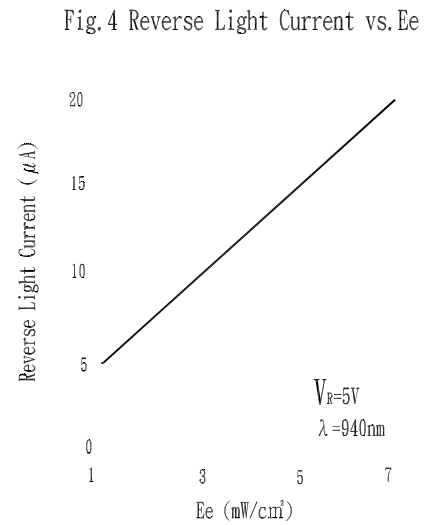
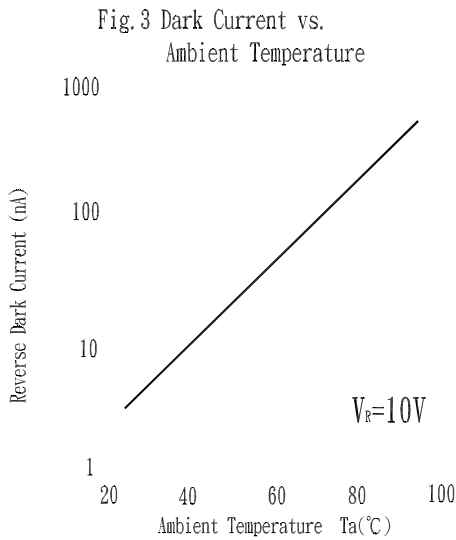
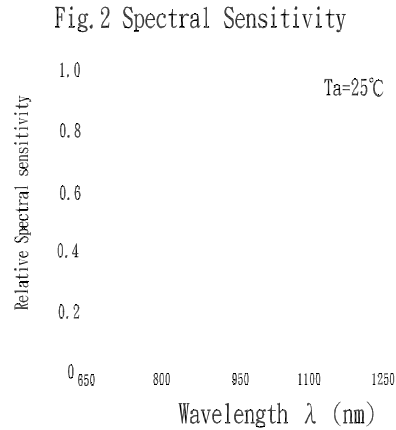
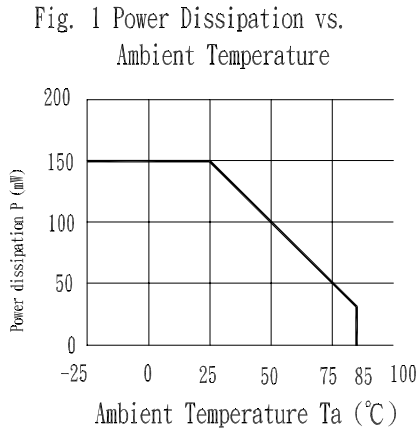
### ■ Electronic Optical Characteristics :

| Parameter                      | Symbol           | Min. | Typ.     | Max. | Unit          | Condition                                                                   |
|--------------------------------|------------------|------|----------|------|---------------|-----------------------------------------------------------------------------|
| Rang of Spectral Bandwidth     | $\lambda_{0.5}$  | ---- | 730-1200 | ---- | nm            | ----                                                                        |
| Wavelength of Peak Sensitivity | $\lambda_p$      | ---- | 980      | ---- | nm            | ----                                                                        |
| Open-Circuit Voltage           | $V_{OC}$         | ---- | 0.41     | ---- | V             | $E_e=5\text{mW}/\text{cm}^2$<br>$\lambda_p=940\text{nm}$                    |
| Short-Circuit Current          | $I_{SC}$         | ---- | 15       | ---- | $\mu\text{A}$ |                                                                             |
| Reverse Light Current          | $I_L$            | ---- | 15       | ---- | $\mu\text{A}$ | $E_e=5\text{mW}/\text{cm}^2$<br>$\lambda_p=940\text{nm}$<br>$V_R=5\text{V}$ |
| Dark Current                   | $I_D$            | ---- | ----     | 10   | nA            | $E_e=0\text{mW}/\text{cm}^2$<br>$V_R=10\text{V}$                            |
| Reverse Breakdown Voltage      | $B_{VR}$         | 32   | 170      | ---- | V             | $E_e=0\text{mW}/\text{cm}^2$<br>$I_R=100\mu\text{A}$                        |
| Total Capacitance              | $C_t$            | ---- | 6        | ---- | pF            | $E_e=0\text{mW}/\text{cm}^2$<br>$f=1\text{MHZ}$<br>$V_R=5\text{V}$          |
| Turn-on/Turn-off Time          | $t_{on}/t_{off}$ | ---- | 10/10    | ---- | nS            | $R_L=1000\Omega$<br>$V_R=10\text{V}$                                        |

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### ■ Typical Electrical/Optical/Characteristics Curves :





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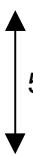
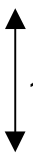
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### ■ Reliability Test Item And Condition

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

Confidence level:90%

LTPD:10%

| NO. | Item                             | Test Conditions                                                                                                                       | Test Hours/<br>Cycle | Sample Size | Failure Judgement Criteria                                 | Ac/Re |
|-----|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------|------------------------------------------------------------|-------|
| 1   | REFLOW                           | TEMP : 240°C ± 5 °C<br>5 sec                                                                                                          | 6 Min                | 22 PCs      | $I_L \leq L \times 0.8$<br><br>L:Lower specification limit | 0/1   |
| 2   | Temperature Cycle                | H : +85°C      30 min<br><br>L : -55°C      30 min | 50 cycle             | 22 PCs      |                                                            | 0/1   |
| 3   | Thermal Shock                    | H : +100°C    5 min<br><br>L : -10°C      30 min   | 50 cycle             | 22 PCs      |                                                            | 0/1   |
| 4   | High Temperature Storage         | TEMP. : +100°C                                                                                                                        | 1000 hrs             | 22 PCs      |                                                            | 0/1   |
| 5   | Low Temperature Storage          | TEMP. : -55°C                                                                                                                         | 1000 hrs             | 22 PCs      |                                                            | 0/1   |
| 6   | DC Operating Life                | $V_R=5V$                                                                                                                              | 1000 hrs             | 22 PCs      |                                                            | 0/1   |
| 7   | High Temperature / High Humidity | 85°C / 85% R.H.                                                                                                                       | 1000 hrs             | 22 PCs      |                                                            | 0/1   |



