



DEVICE NUMBER : DTD-095-001 REV : 1.0
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1.9mm Silicon PIN Photodiode

MODEL NO : PD95-21B/TR10

■ Features :

- Fast response times
- High photo sensitivity
- Small junction capacitance

■ Description :

- PD95-21B/TR10 is a high speed and high sensitive PIN photodiode miniature top view lens SMD package and it is molded in a black plastic. The device is spectrally matched with the infrared emitting diode.

■ Applications :

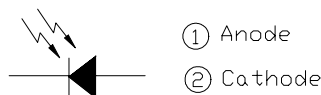
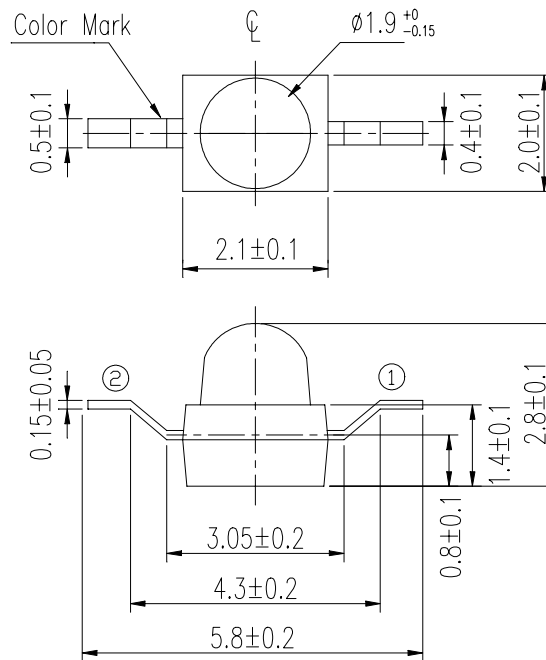
- High speed photo detector
- Copier

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

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■ Package Dimension :



■ Notes :

1. All dimensions are in millimeter.
2. Lead spacing is measured where the lead emerge from the package.
3. Lens color : Black .
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°C

| Parameter | Symbol | Rating | Unit | Notice |
|---|----------------|-----------|------|--------|
| Reversr Voltage | V _R | 32 | V | |
| Operating Temperature | Topr | -25 ~ +85 | °C | |
| Storage Temperature | Tstg | -40 ~ +85 | °C | |
| Lead Soldering Temperature | Tsol | 260 | °C | |
| Power Dissipation at(or below) 25°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 | λ_p | ---- | 980 | ---- | nm | ---- |
| Open-Circuit Voltage | V _{OC} | ---- | 0.42 | ---- | V | E _e =5mW/cm ² λ_p =940nm |
| Short-Circuit Current | I _{SC} | ---- | 15 | ---- | μ A | |
| Reverse Light Current | I _L | ---- | 15 | ---- | μ A | E _e =5mW/cm ² λ_p =940nm V _R =5V |
| Dark Current | I _D | ---- | ---- | 10 | nA | E _e =0mW/cm ² V _R =10V |
| Reverse Breakdown Voltage | B _{VR} | 32 | 170 | ---- | V | E _e =0mW/cm ² I _R =100 μ A |
| Total Capacitance | C _t | ---- | 5 | ---- | pF | E _e =0mW/cm ² f=1MHZ V _R =5V |
| Rise Time | t _r | ---- | 6 | ---- | nS | R _L =1000 Ω V _R =10V |
| Fall Time | t _f | ---- | 6 | ---- | | |



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■ Typical Electrical/Optical/Characteristics Curves :

Fig. 1 Power Dissipation vs. Ambient Temperature

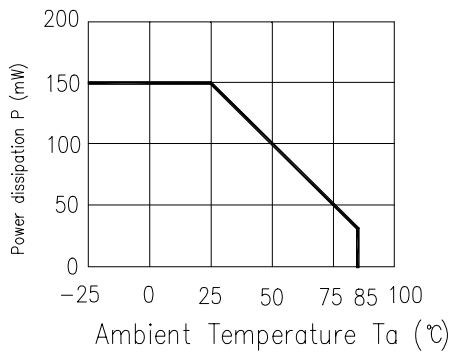


Fig.2 Spectral Sensitivity

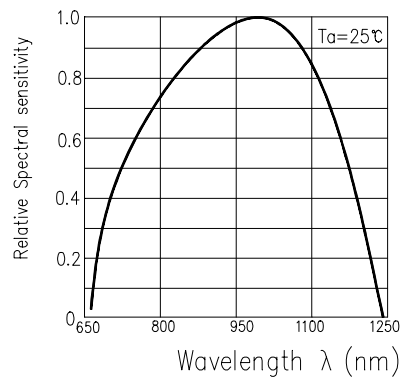


Fig.3 Dark Current vs. Ambient Temperature

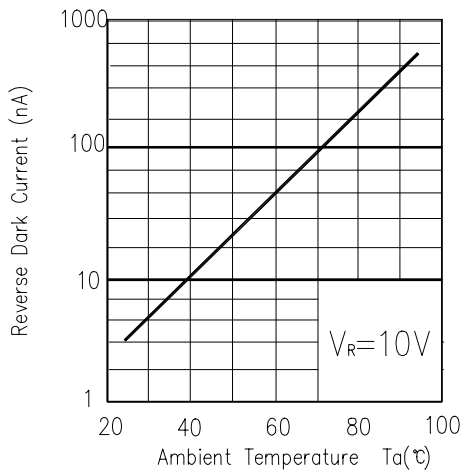


Fig.4 Reverse Light Current vs. E_e

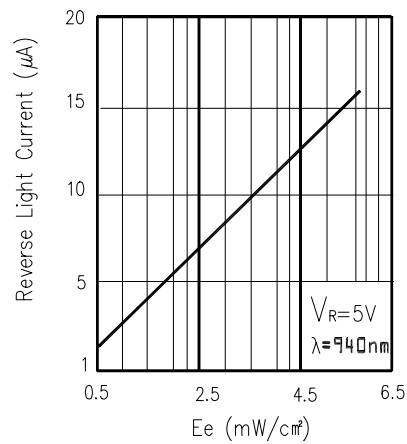


Fig.5 Terminal Capacitance vs. Reverse Voltage

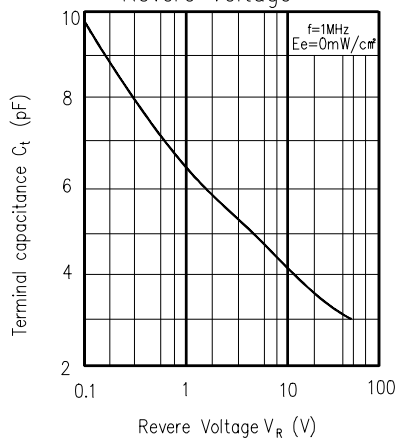
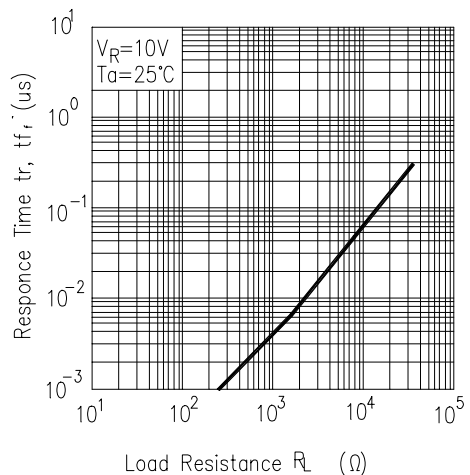


Fig.6 Responce Time vs. Load Resistance





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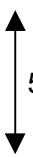
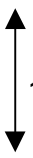
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■ Reliability Test Item And Condition

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

Confidence level:90%

LTPD:10%

| NO. | Item | Test Conditions | Test Hours/ Cycle | Sample Size | Failure Judgement Criteria | Ac/Re |
|-----|----------------------------------|---|----------------------|-------------|--|-------|
| 1 | Solder Heat | TEMP : 260°C ± 5 °C | 5 sec | 22 PCs | $I_L \leq L \times 0.8$ L:Lower specification limit | 0/1 |
| 2 | Temperature Cycle | H : +85°C 30 min  L : -55°C 30 min | 50 cycle | 22 PCs | | 0/1 |
| 3 | Thermal Shock | H : +100°C 5 min  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 |

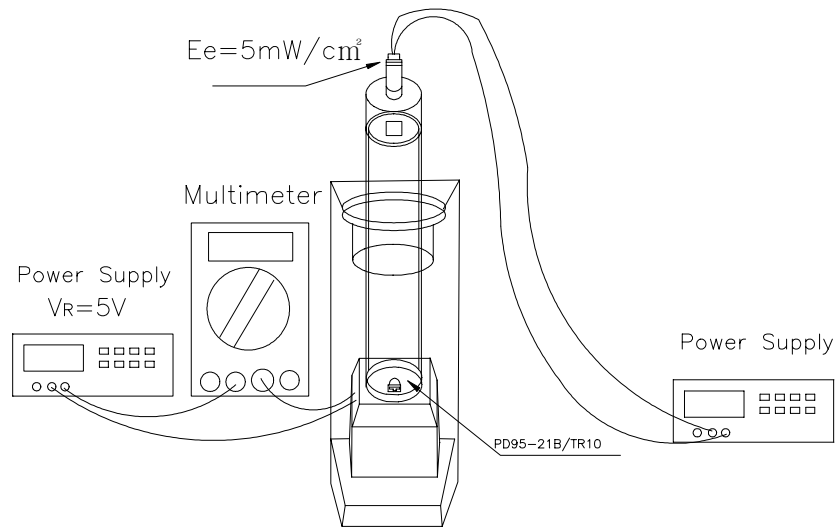
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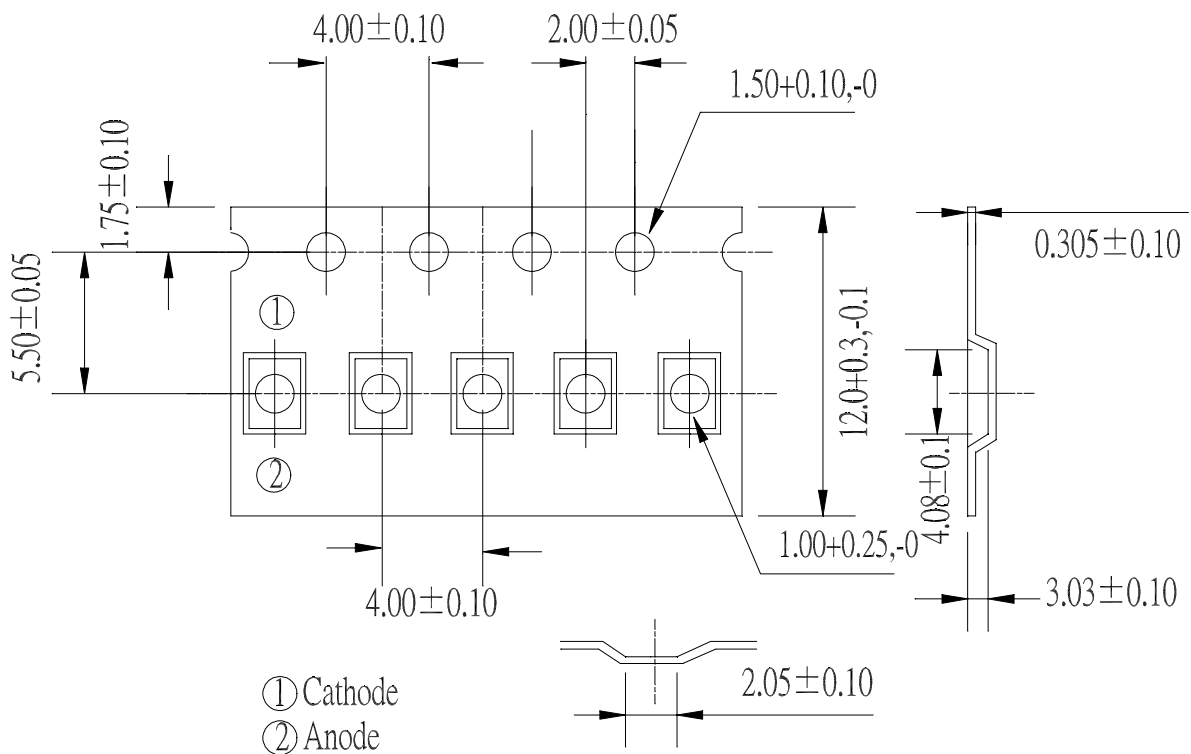
■ Test Method For Reverse Light Current

Condition: $E_e=5\text{mW}/\text{cm}^2, V_R=5\text{V}$

Test Item: Reverse Light Current (Unit: μA)



■ Taping Dimensions

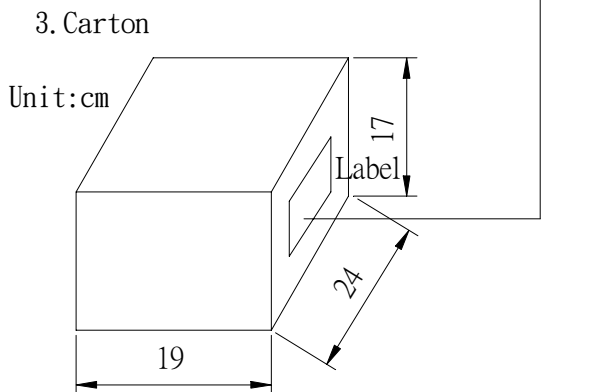
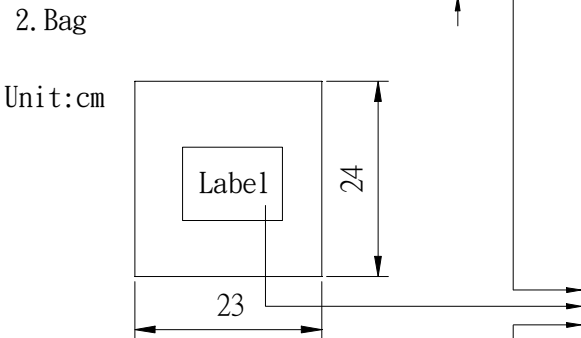
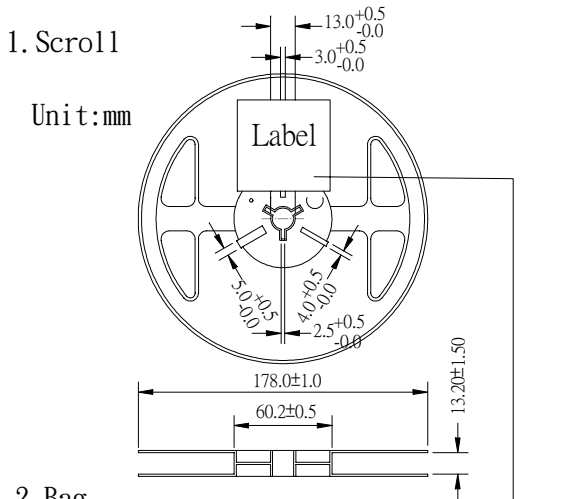




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■ Packing Specifications



CPN:
P/N:

 PD95-21B/TR10
 QTY:

 LOT NO:
 CAT:
 HUE:
 REF:

MADE IN TAIWAN

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

■ Packing Quantity Specification

- 1.1000 Pcs/1Volume , 1Volume/1Bag
- 2.10Bags/1Carton