

## Excellent Integrated System Limited

Stocking Distributor

Click to view price, real time Inventory, Delivery & Lifecycle Information:

[Everlight Electronics Co Ltd](#)  
[PD438C](#)

For any questions, you can email us directly:

[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

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## DATASHEET

# 4.8mm Semi-Lens Silicon PIN Photodiode PD438C

### Features

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

### Description

- PD438C is a high speed and sensitive PIN photodiode in a cylindrical side view plastic package. The epoxy package itself is an IR filter , spectrally matched to IR emitter.

### Applications

- High speed photo detector
- Camera
- Optoelectronic switch
- VCRs , Video camera

**DATASHEET**  
**4.8mm Semi-Lens Silicon PIN Photodiode**  
**PD438C**

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**Device Selection Guide**

| Chip Materials | Lens Color  |
|----------------|-------------|
| Silicon        | Water clear |

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

| Parameter                 | Symbol    | Rating     | Unit |
|---------------------------|-----------|------------|------|
| Reverse Voltage           | $V_R$     | 32         | mA   |
| Power Dissipation         | $P_d$     | 150        | mW   |
| Operating Temperature     | $T_{opr}$ | -40 ~ +85  |      |
| Storage Temperature       | $T_{stg}$ | -40 ~ +100 |      |
| Soldering Temperature(*1) | $T_{sol}$ | 260        |      |

**Notes:** \*1: Soldering time ≤ 5 seconds.

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4.8mm Semi-Lens Silicon PIN Photodiode  
PD438C

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

| Parameter                      | Symbol          | Min.  | Typ.  | Max.  | Unit | Condition                                        |
|--------------------------------|-----------------|-------|-------|-------|------|--------------------------------------------------|
| Rang of Spectral Bandwidth     | $\lambda_{0.5}$ | 400   | ----- | 1100  | nm   | -----                                            |
| Wavelength of Peak Sensitivity | $\lambda_p$     | ----- | 940   | ----- | nm   | -----                                            |
| Open-Circuit Voltage           | VOC             | ----- | 0.35  | ----- | V    | Ee=5m W/cm2<br>$\lambda_p=940\text{nm}$          |
| Short- Circuit Current         | ISC             | ----- | 18    | ----- | uA   | Ee=1m W/cm2<br>$\lambda_p=940\text{nm}$          |
| Reverse Light Current          | $I_L$           | 10.2  | 18    | ----- | uA   | Ee=1m W/cm2<br>$\lambda_p=940\text{nm}$<br>VR=5V |
| Dark Current                   | $I_d$           | ----  | 5     | 30    | nA   | Ee=0m W/cm2<br>VR=10V                            |
| Reverse Breakdown              | BVR             | 32    | 170   | ----- | V    | Ee=0m W/cm2<br>IR=100uA                          |
| Total Capacitance              | Ct              | ----  | 25    | ----  | pF   | Ee=0m W/cm2<br>VR=3V<br>f=1MHZ                   |
| Rise/Fall Time                 | tr/tf           | ----  | 50/50 | ----  | nS   | VR=10V<br>RL=1KΩ                                 |

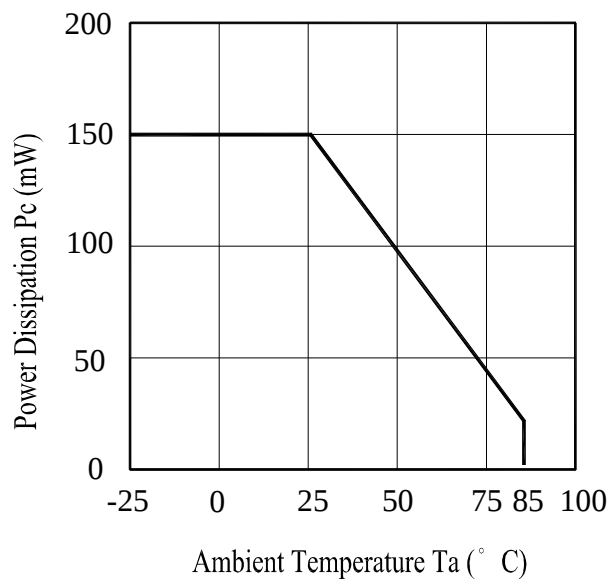
# DATASHEET

4.8mm Semi-Lens Silicon PIN Photodiode  
PD438C

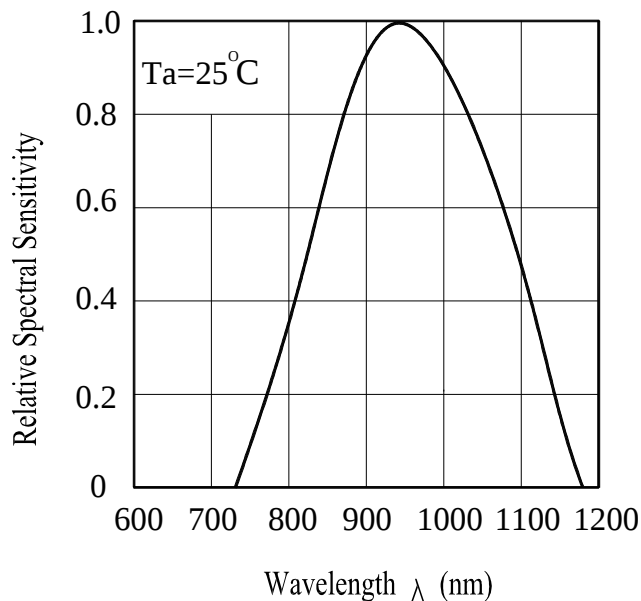
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## Typical Electro-Optical Characteristics Curves

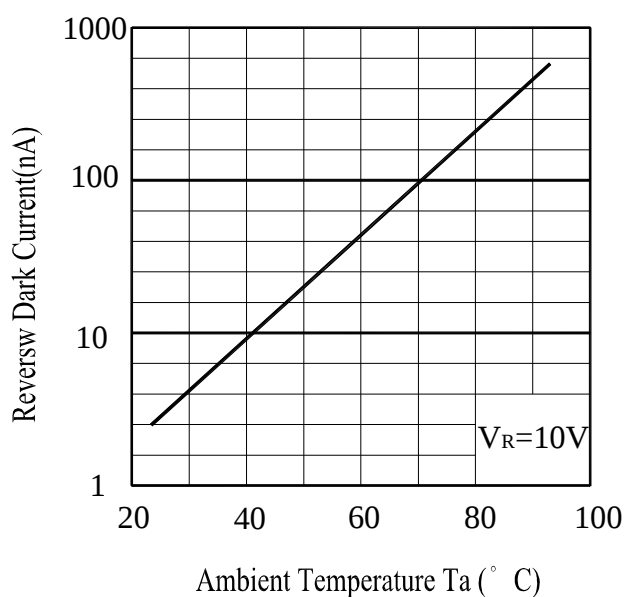
Power Dissipation vs. Ambient Temperature



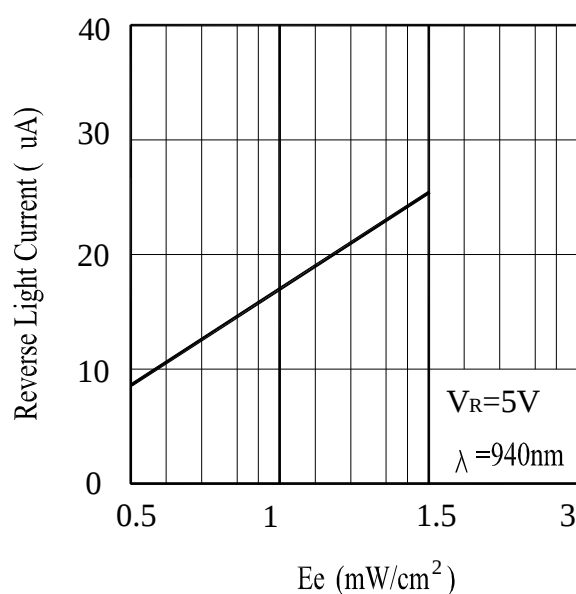
Spectral Sensitivity



Dark Current vs. Ambient Temperature



Reverse Light Current vs.  $E_e$

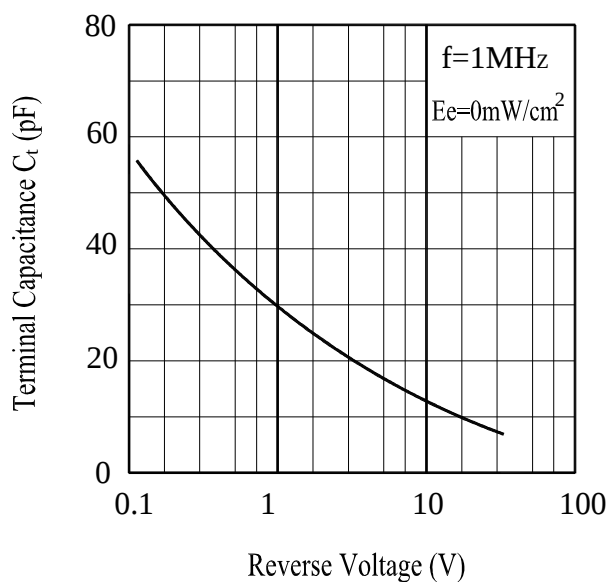


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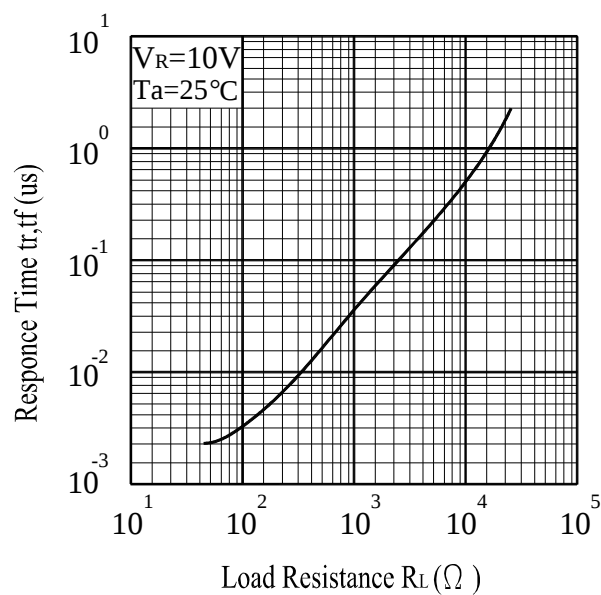
4.8mm Semi-Lens Silicon PIN Photodiode  
PD438C

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Terminal Capacitance vs. Reverse Voltage



Response Time vs. Load Resistance

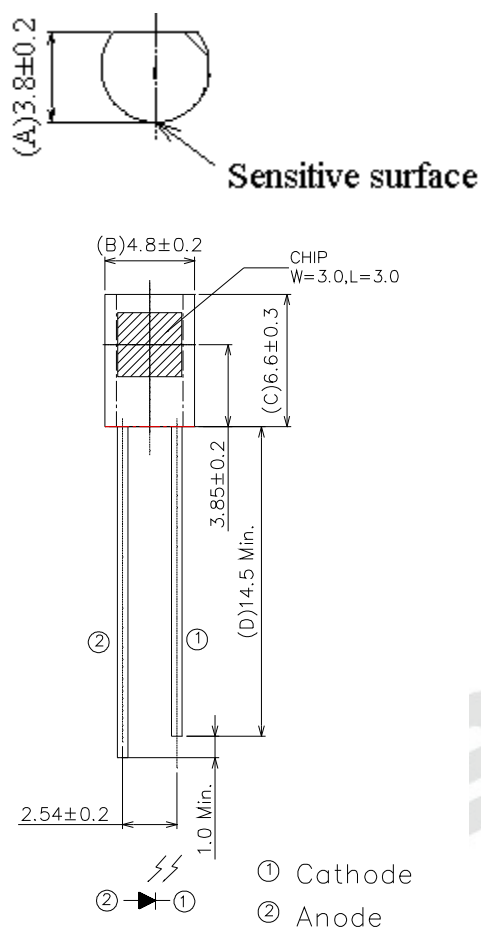


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**4.8mm Semi-Lens Silicon PIN Photodiode**  
**PD438C**

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**Package Dimension**



Note: Tolerances unless dimensions  $\pm 0.25\text{mm}$

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**4.8mm Semi-Lens Silicon PIN Photodiode**  
**PD438C**

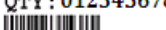
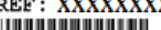
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**Packing Specification**

■ Packing Quantity

1. 500 PCS/1 Bag, 6Bags/1 Inner Carton
2. 10Inner Cartons/1 Outside Carton

**Label Form Specification**

|                                                                                     |                                                                                   |                                                                                     |   |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---|
| RoHS                                                                                |  | <b>EVERLIGHT</b>                                                                    | 5 |
| CPN: XXXXXXXXXXXXXXXXXXXX                                                           |                                                                                   |                                                                                     |   |
|    |                                                                                   |                                                                                     |   |
| XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX                                  |                                                                                   |                                                                                     |   |
| P/N: XXXXXXXXXXXX                                                                   |                                                                                   |                                                                                     |   |
|    |                                                                                   |                                                                                     |   |
| XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX                                  |                                                                                   |                                                                                     |   |
| LOT NO: Y150716XXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX                                     |                                                                                   |                                                                                     |   |
|   |                                                                                   |                                                                                     |   |
| QTY: 0123456789                                                                     |                                                                                   | HUE: XXXXXXXXXXXX                                                                   |   |
|  |                                                                                   |  |   |
| CAT: XXXXXXXXXXXX                                                                   |                                                                                   | REF: XXXXXXXXXXXX                                                                   |   |
|  |                                                                                   |  |   |
| REFERENCE: BTPYYMMDDXXXXX                                                           |                                                                                   |                                                                                     |   |
|  |                                                                                   |                                                                                     |   |
| MADE IN XXXXXX                                                                      |                                                                                   |                                                                                     |   |
|  |                                                                                   |                                                                                     |   |

- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number
- Reference: Identify Label Number

**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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