

### 4.8mm Semi-Lens Silicon PIN Photodiode PD438B/L1

#### Features

- .Fast response times
- .High photo sensitivity
- .Small junction capacitance
- .Pb free
- .The product itself will remain within RoHS compliant version.
- Compliance with EU REACH
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm)



#### Description

- .PD438B/L1 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

## Device Selection Guide

|          |            |
|----------|------------|
| Chip     | Lens Color |
| Material |            |
| Silicon  | Black      |

## Absolute Maximum Ratings (Ta=25°C)

| Parameter                 | Symbol           | Rating     | Unit |
|---------------------------|------------------|------------|------|
| Reverse Voltage           | V <sub>R</sub>   | 32         | mA   |
| Power Dissipation         | P <sub>d</sub>   | 150        | mW   |
| Operating Temperature     | T <sub>opr</sub> | -40 ~ +85  | °C   |
| Storage Temperature       | T <sub>stg</sub> | -40 ~ +100 | °C   |
| Soldering Temperature(*1) | T <sub>sol</sub> | 260        | °C   |

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

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

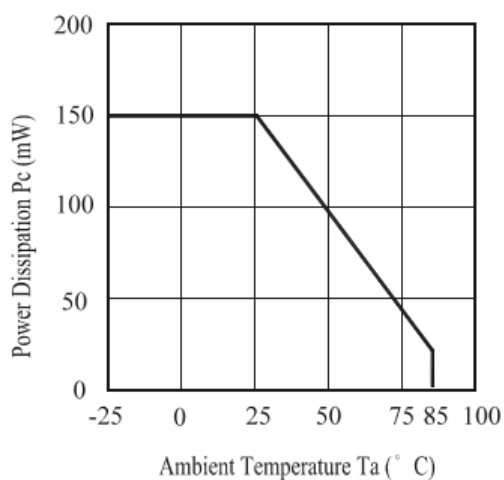
| Parameter                      | Symbol          | Min.  | Typ.  | Max.  | Unit | Condition                                        |
|--------------------------------|-----------------|-------|-------|-------|------|--------------------------------------------------|
| Rang of Spectral Bandwidth     | $\lambda_{0.5}$ | 400   | ----- | 1100  | nm   | -----                                            |
| Wavelength of Peak Sensitivity | $\lambda_p$     | ----- | 940   | ----- | nm   | -----                                            |
| Open-Circuit Voltage           | VOC             | ----- | 0.41  | ----- | V    | Ee=5m W/cm2<br>$\lambda_p=940\text{nm}$          |
| Short- Circuit Current         | ISC             | ----- | 4     | ----- | uA   | Ee=1m W/cm2<br>$\lambda_p=940\text{nm}$          |
| Reverse Light Current          | $I_L$           | 2.6   | 4     | ----- | 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=100 $\mu$ A                    |
| Total Capacitance              | Ct              | ----  | 6     | ----  | pF   | Ee=0m W/cm2<br>VR=3V<br>f=1MHZ                   |
| Rise/Fall Time                 | tr/tf           | ----  | 10/10 | ----  | nS   | VR=10V<br>RL=1K $\Omega$                         |

**Note:**

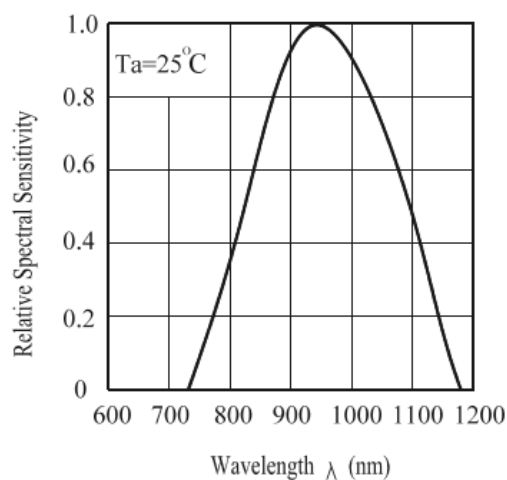
Tolerance of Luminous Intensity:  $\pm 10\%$   
Tolerance of Dominant Wavelength:  $\pm 1\text{nm}$   
Tolerance of Forward Voltage:  $\pm 0.1\text{V}$

## Typical Electro-Optical Characteristics Curves

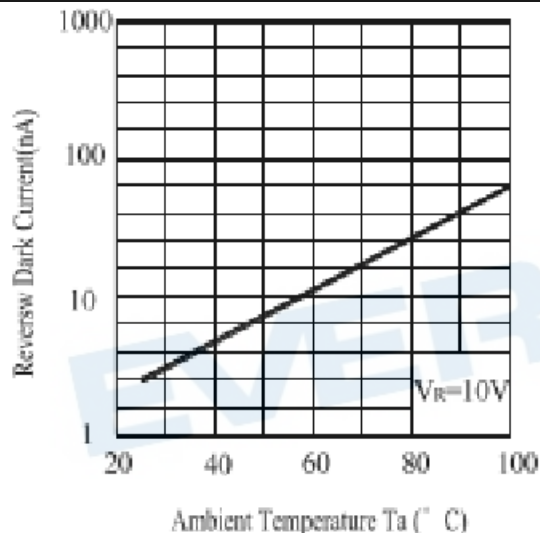
Power Dissipation vs. Ambient Temperature



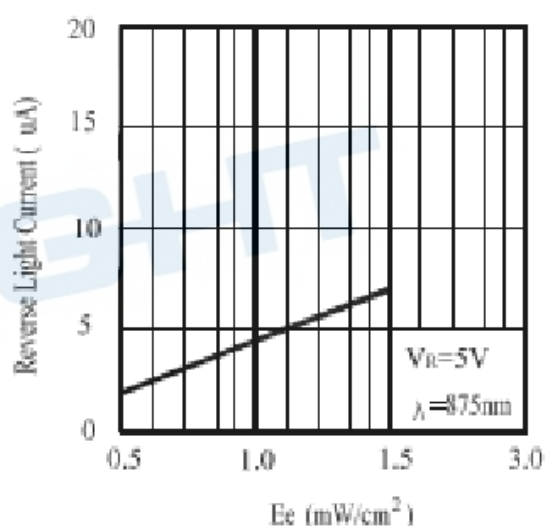
Spectral Sensitivity



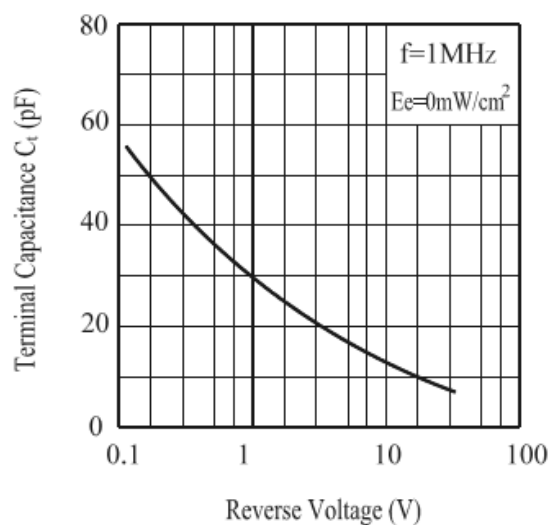
Dark Current vs. Ambient Temperature



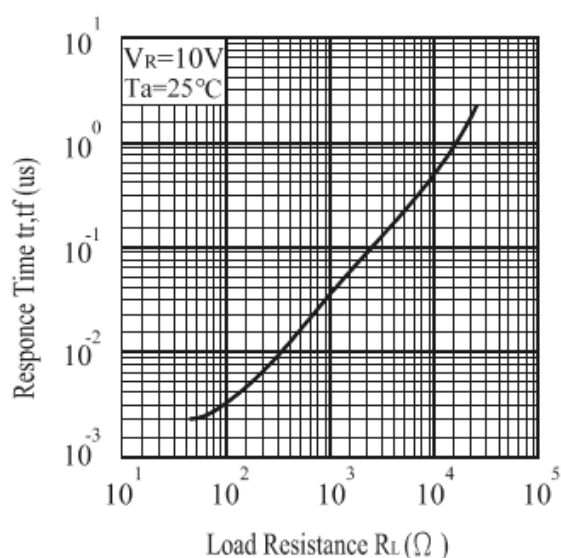
Reverse Light Current vs.  $E_e$



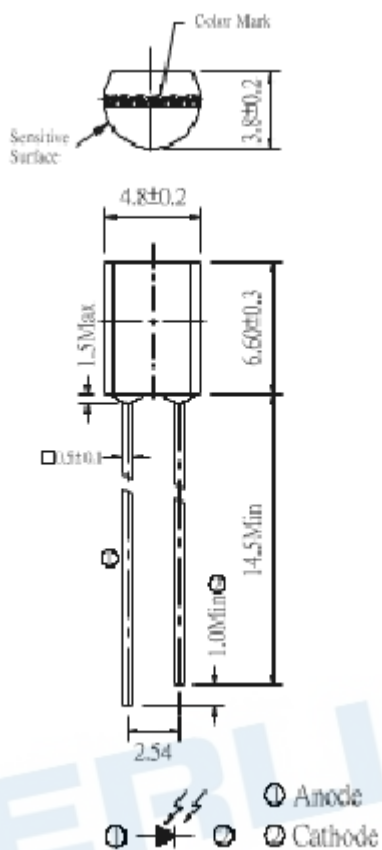
Terminal Capacitance vs. Reverse Voltage



Response Time vs. Load Resistance



## Package Dimension



Note: Tolerances unless dimensions  $\pm 0.25$ mm

## Packing Specification

### ■ Packing Quantity

1. 1000 PCS/1 Bag, 4Bags/1 Inner Carton
2. 10Inner Cartons/1 Outside Carton

## Label Form Specification

|                                                    |                                                                                   |           |   |
|----------------------------------------------------|-----------------------------------------------------------------------------------|-----------|---|
| RoHS                                               |  | EVERLIGHT | 5 |
| CPN: XXXXXXXXXXXXXXXXXXXX                          |                                                                                   |           |   |
| XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX |                                                                                   |           |   |
| P/N: XXXXXXXXXXXX                                  |                                                                                   |           |   |
| XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX |                                                                                   |           |   |
| LOT NO:XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX            |                                                                                   |           |   |
| QTY: XXXXXXXXXXXX HUE: XXXXXXXXXXXX                |                                                                                   |           |   |
| CAT: XXXXXXXXXXXX REF: XXXXXXXXXXXX                |                                                                                   |           |   |
| REFERENCE: XXXXXXXXXXXXXXXX                        |                                                                                   |           |   |
| MADE IN XXXXXXXX                                   |                                                                                   |           |   |



- 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
- X: Month
- Reference: Identify Label Number

### Notes:

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