

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

#### 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

#### Description

- PD438B 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 Materials	Lens Color
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  $\leq$  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	----	0.35	----	V	$E_e=5\text{m W/cm}^2$ $\lambda_p=940\text{nm}$
Short- Circuit Current	ISC	----	18	----	uA	$E_e=1\text{m W/cm}^2$ $\lambda_p=940\text{nm}$
Reverse Light Current	$I_L$	10.2	18	----	uA	$E_e=1\text{m W/cm}^2$ $\lambda_p=940\text{nm}$ $VR=5\text{V}$
Dark Current	$I_d$	----	5	30	nA	$E_e=0\text{m W/cm}^2$ $VR=10\text{V}$
Reverse Breakdown	BVR	32	170	----	V	$E_e=0\text{m W/cm}^2$ $IR=100\mu\text{A}$
Total Capacitance	$C_t$	----	25	----	pF	$E_e=0\text{m W/cm}^2$ $VR=3\text{V}$ $f=1\text{MHz}$
Rise/Fall Time	tr/tf	----	50/50	----	nS	$VR=10\text{V}$ $RL=1\text{K}\Omega$

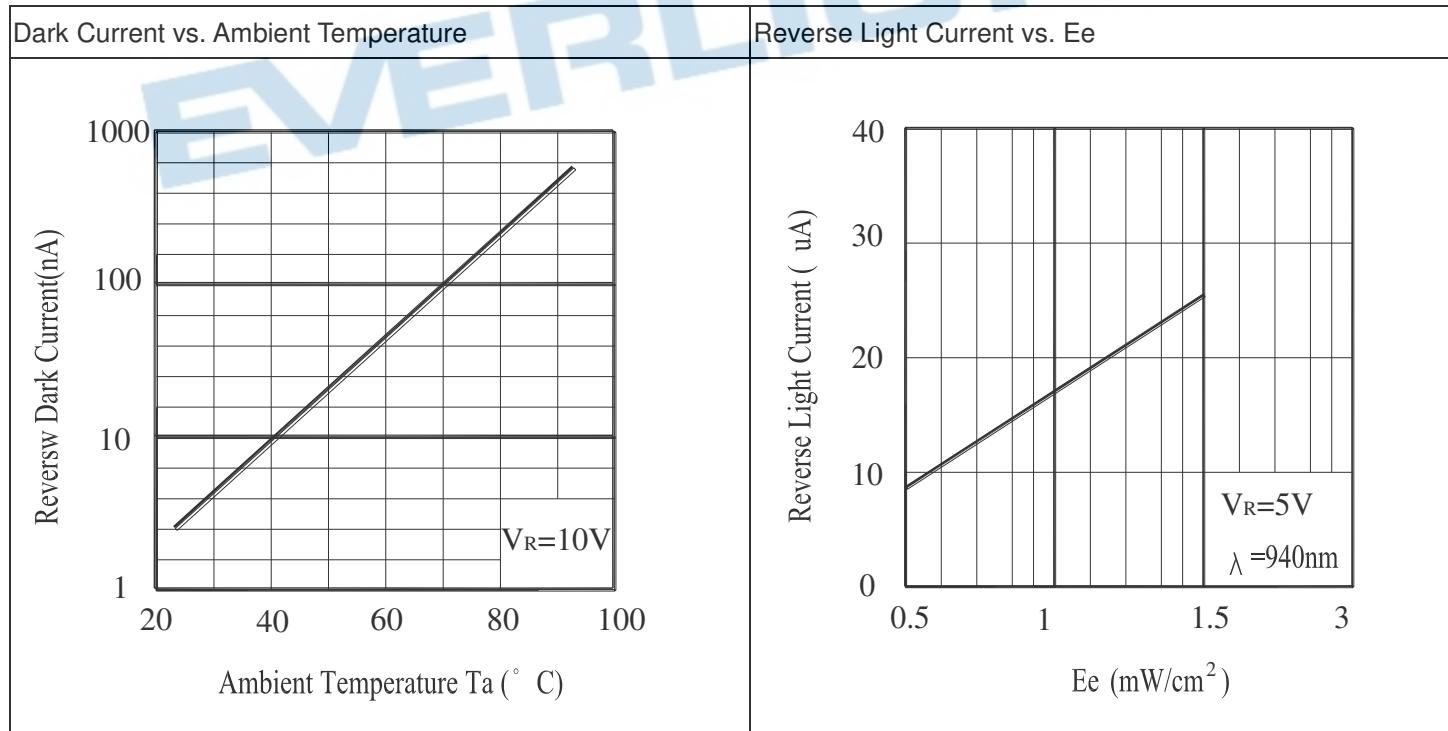
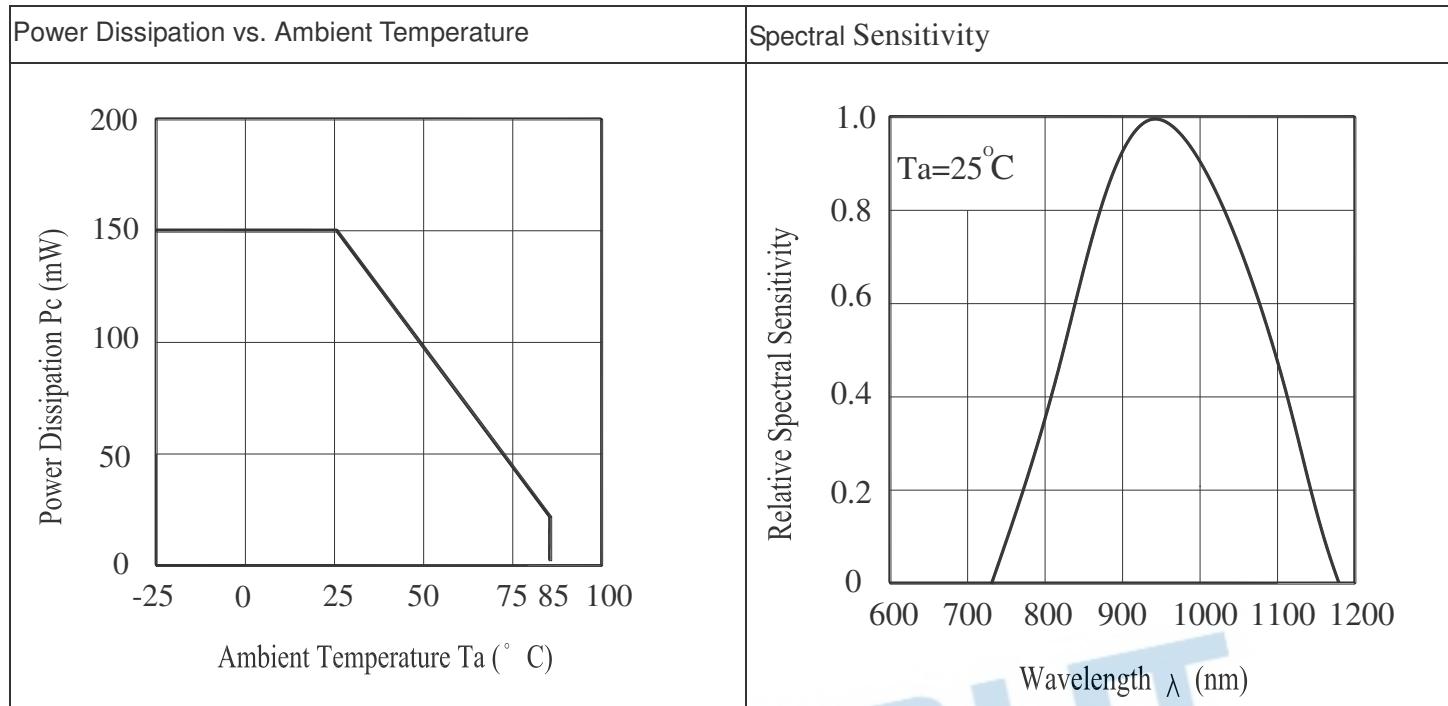
Note:

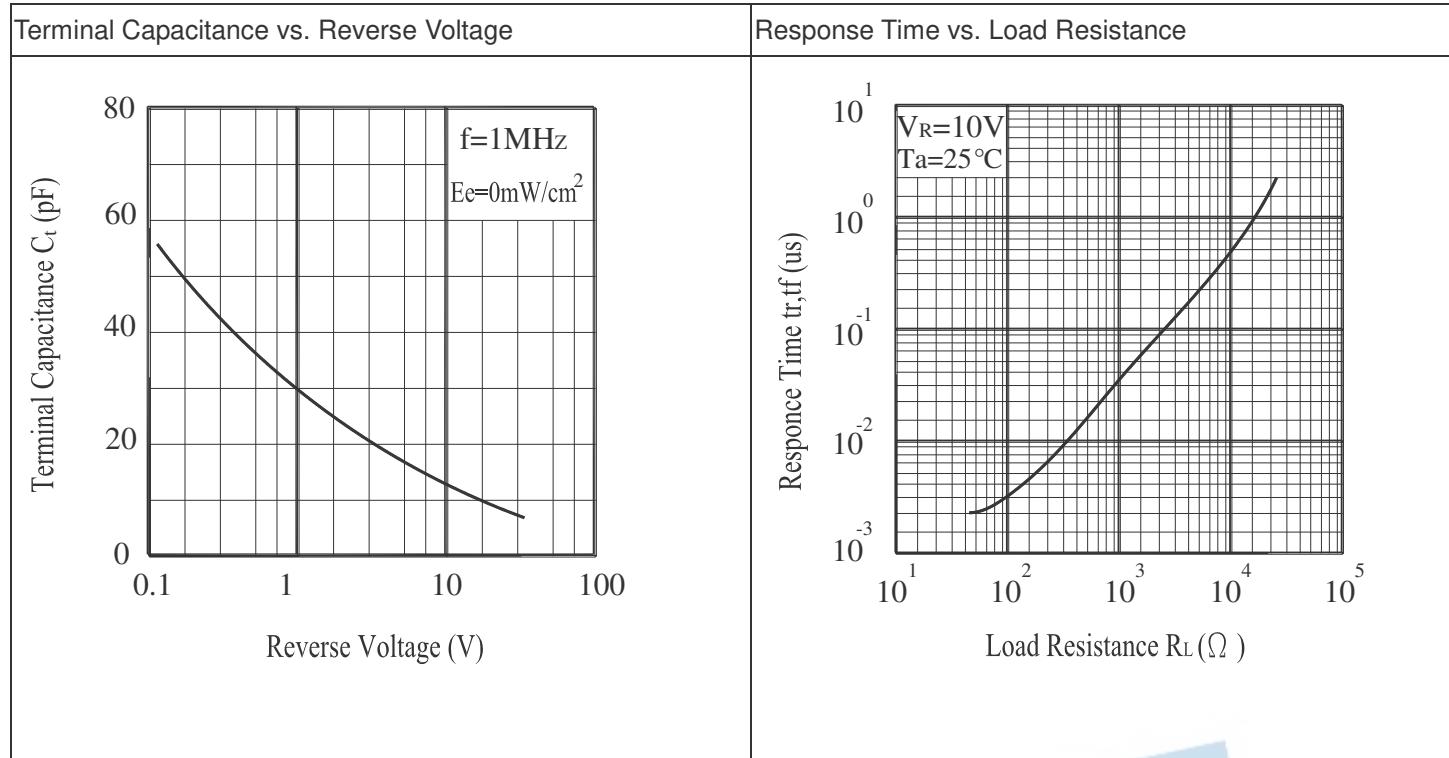
Tolerance of Luminous Intensity:  $\pm 10\%$

Tolerance of Dominant Wavelength:  $\pm 1\text{nm}$

Tolerance of Forward Voltage:  $\pm 0.1\text{V}$

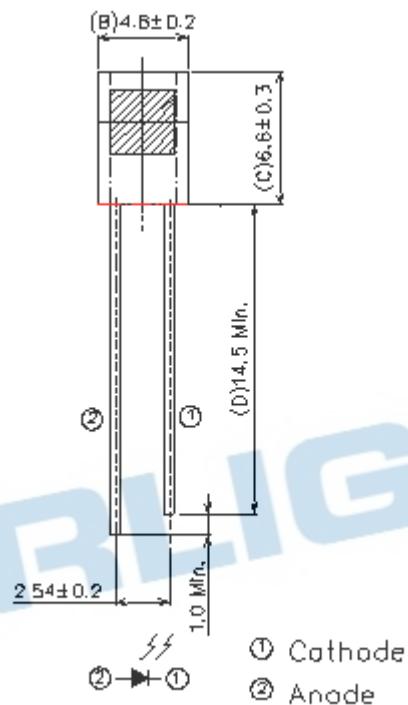
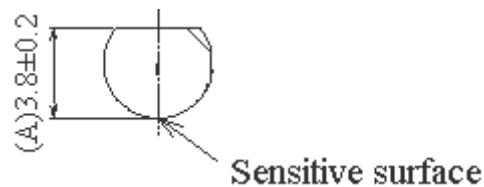
## Typical Electro-Optical Characteristics Curves





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## Package Dimension



Note: Tolerances unless dimensions  $\pm 0.25$ mm

## Packing Specification

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

## Label Form Specification



- 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:

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