

## 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	$V_R$	32	mA
Power Dissipation	$P_d$	150	mW
Operating Temperature	$T_{opr}$	-40 ~ +85	°C
Storage Temperature	$T_{stg}$	-40 ~ +100	°C
Soldering Temperature(*1)	$T_{sol}$	260	°C

**Notes:** \*1: Soldering time  $\leq$  5 seconds.

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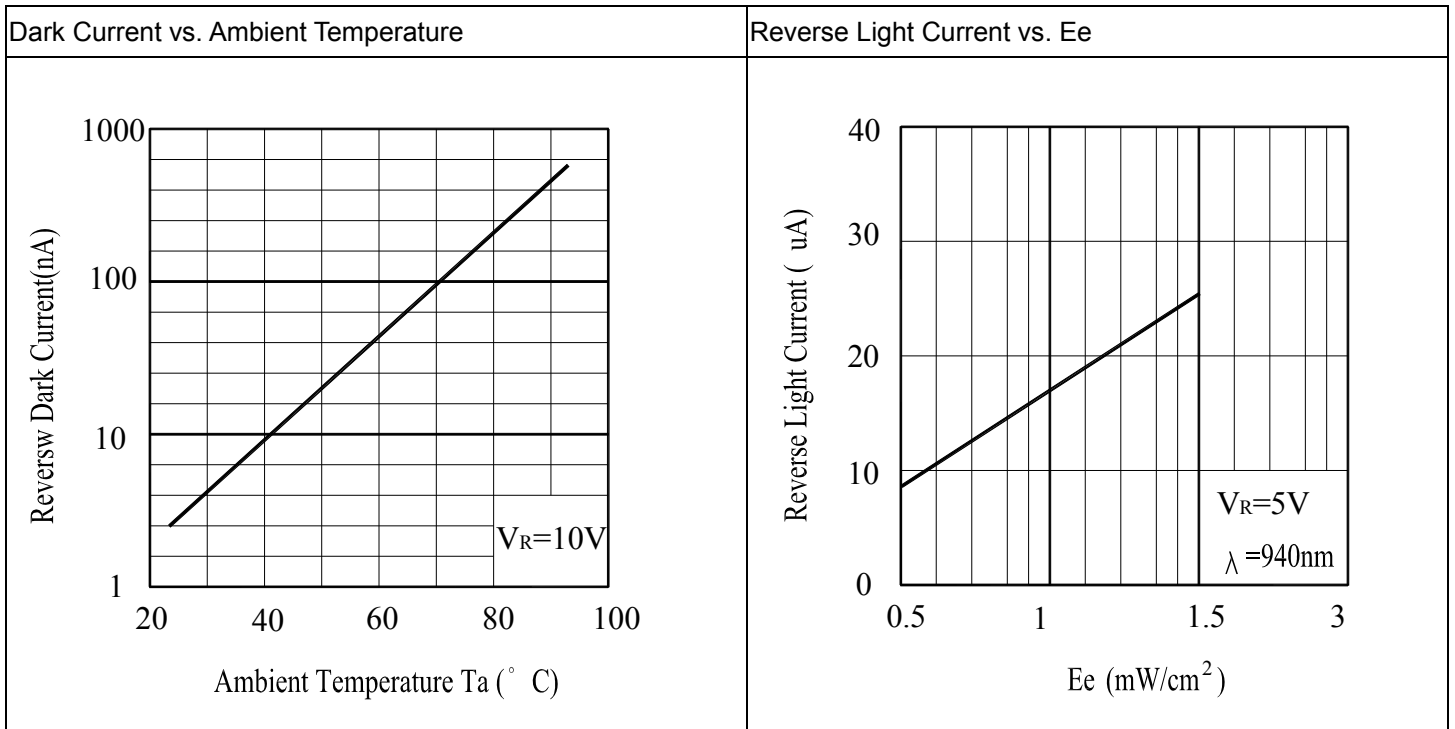
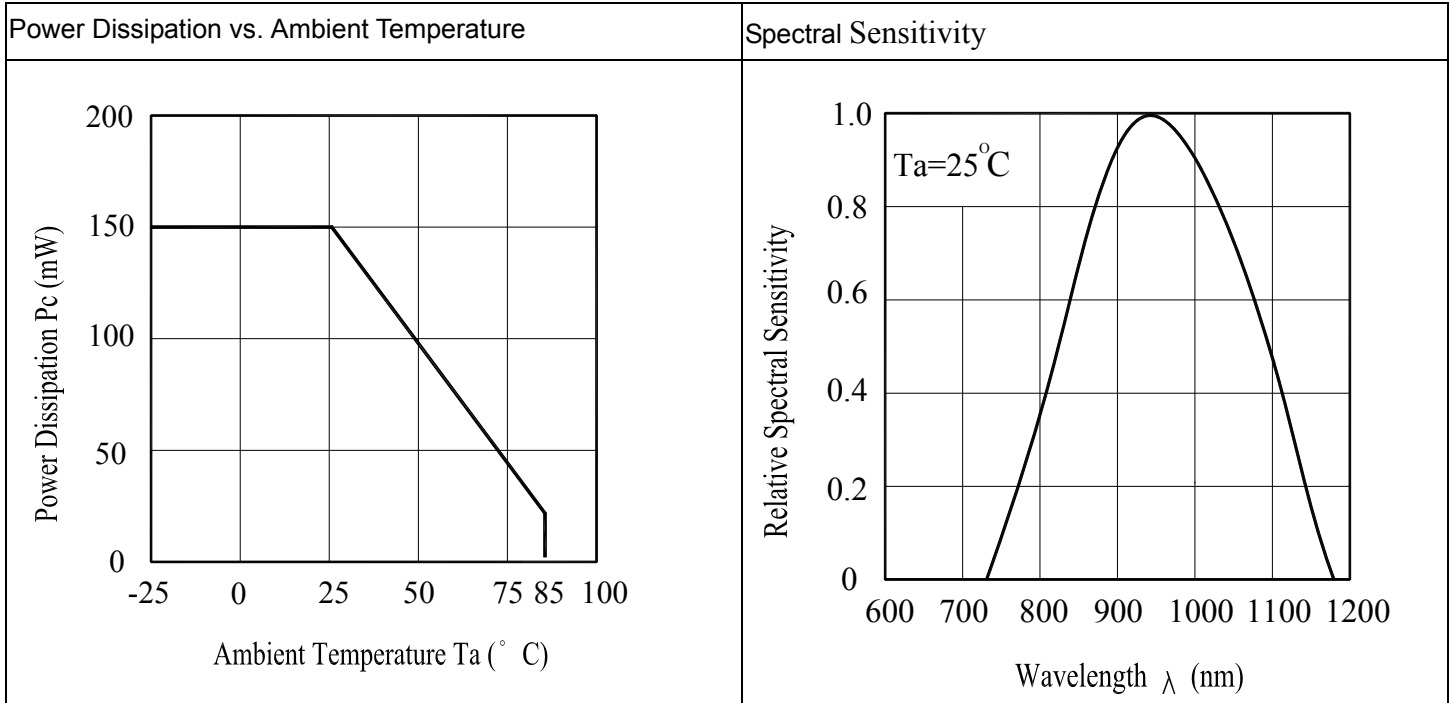
**Electro-Optical Characteristics (Ta=25°C)**

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	Ee=5m W/cm2 $\lambda_p=940\text{nm}$
Short- Circuit Current	ISC	-----	18	-----	$\mu\text{A}$	Ee=1m W/cm2 $\lambda_p=940\text{nm}$
Reverse Light Current	$I_L$	10.2	18	-----	$\mu\text{A}$	Ee=1m W/cm2 $\lambda_p=940\text{nm}$ VR=5V
Dark Current	$I_d$	----	5	30	nA	Ee=0m W/cm2 VR=10V
Reverse Breakdown	BVR	32	170	-----	V	Ee=0m W/cm2 IR=100 $\mu\text{A}$
Total Capacitance	Ct	----	25	----	pF	Ee=0m W/cm2 VR=3V f=1MHZ
Rise/Fall Time	tr/tf	----	50/50	----	nS	VR=10V RL=1K $\Omega$

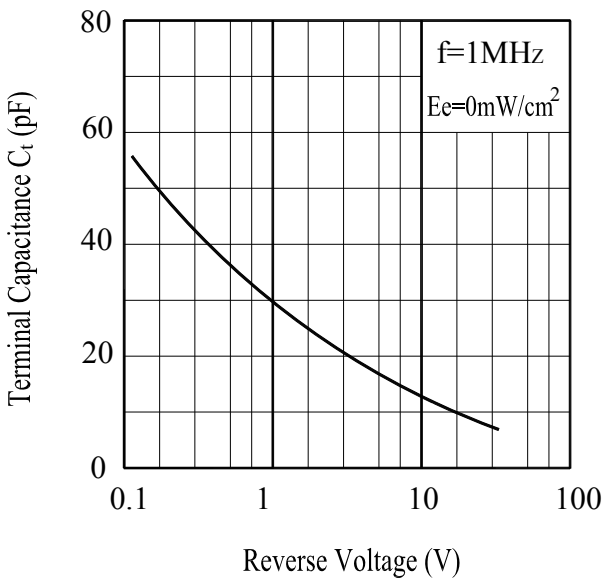
Note:

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

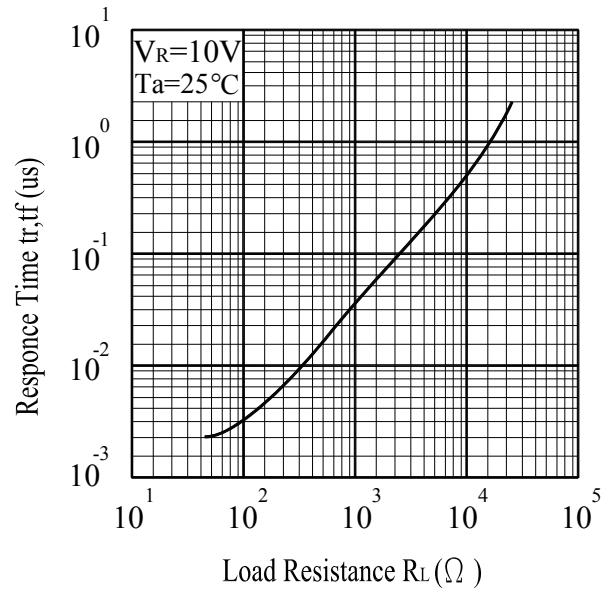
Typical Electro-Optical Characteristics Curves



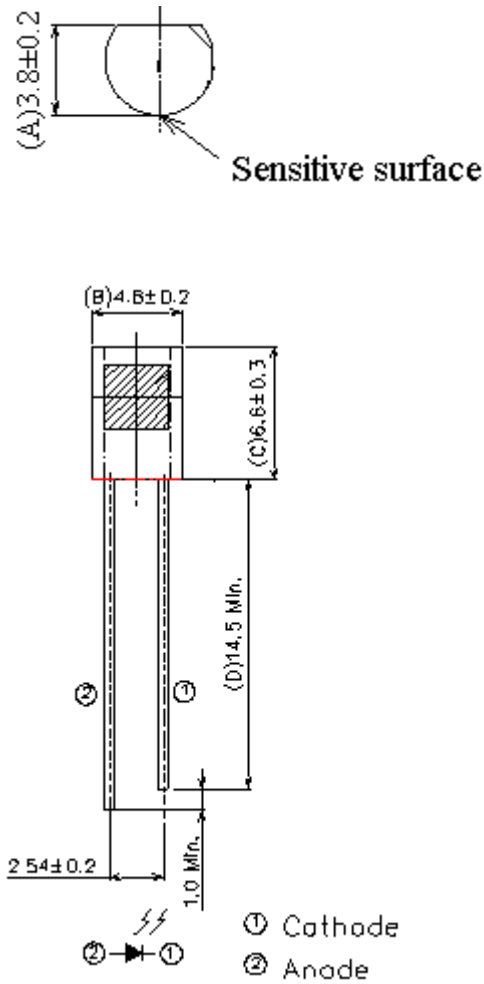
Terminal Capacitance vs. Reverse Voltage



Response Time vs. Load Resistance



### Package Dimension



Note: Tolerances unless dimensions  $\pm 0.25$ mm

### Packing Specification

- Packing Quantity
  1. 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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