

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.

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
GaAlAs	Black

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	32	V
Power Dissipation	P_d	150	mW
Operating Temperature	T_{opr}	-25 ~ +85	℃
Storage Temperature	T_{stg}	-40 ~ +100	℃
Soldering Temperature(*1)	T_{sol}	260	℃

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	$\lambda_{0.5}$	840	-----	1100	nm	-----
Wavelength of Peak Sensitivity	λ_p	-----	940	-----	nm	-----
Open-Circuit Voltage	VOC	-----	0.35	-----	V	Ee=5m W/cm ² $\lambda_p=940\text{nm}$
Short- Circuit Current	ISC	-----	18	-----	uA	Ee=1m W/cm ² $\lambda_p=940\text{nm}$
Reverse Light Current	I_L	10.2	18	-----	uA	Ee=1m W/cm ² $\lambda_p=940\text{nm}$ VR=5V
Dark Current	Id	----	5	30	nA	Ee=0m W/cm ² VR=10V
Reverse Breakdown	BVR	32	170	-----	V	Ee=0m W/cm ² IR=100uA
Total Capacitance	Ct	----	25	----	pF	Ee=0m W/cm ² VR=3V f=1MHZ
Rise/Fall Time	tr/tf	----	50/50	----	nS	VR=10V RL=1KΩ

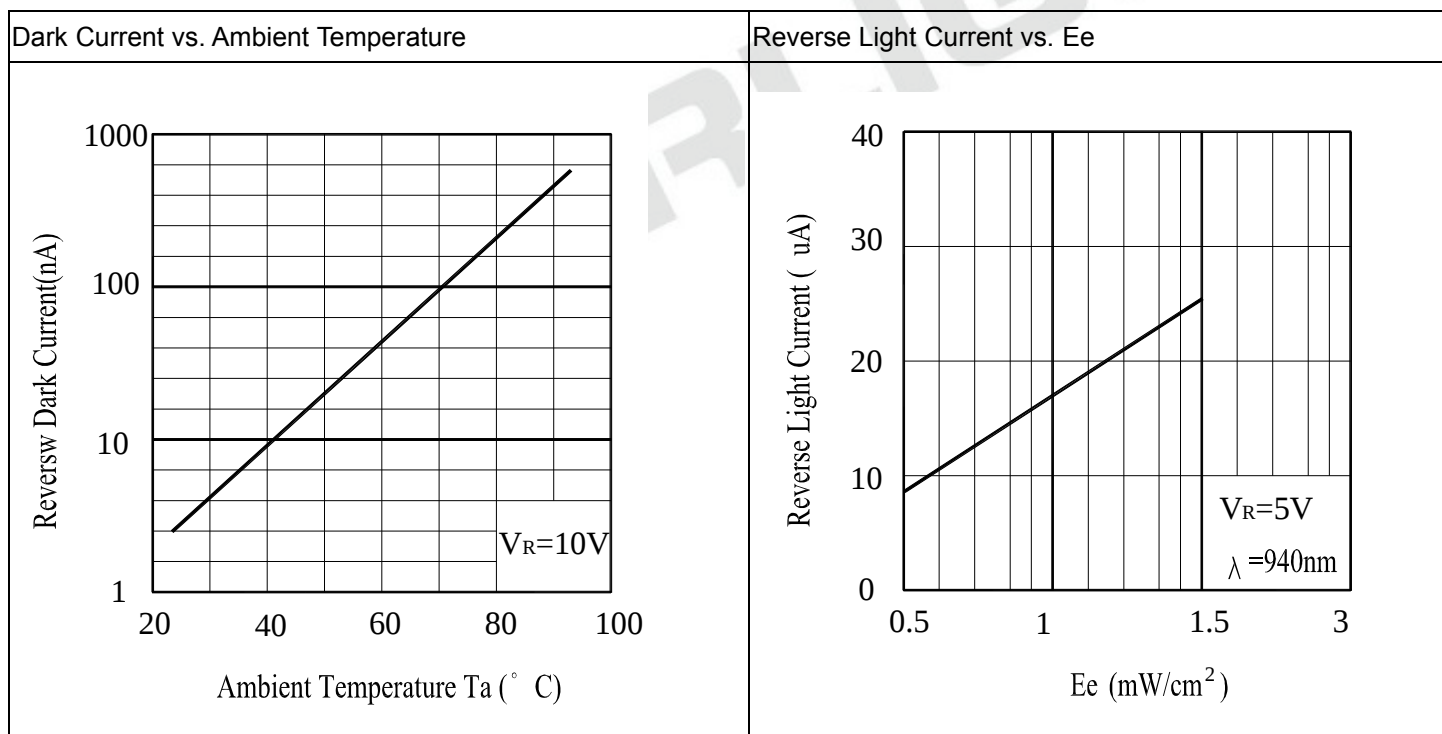
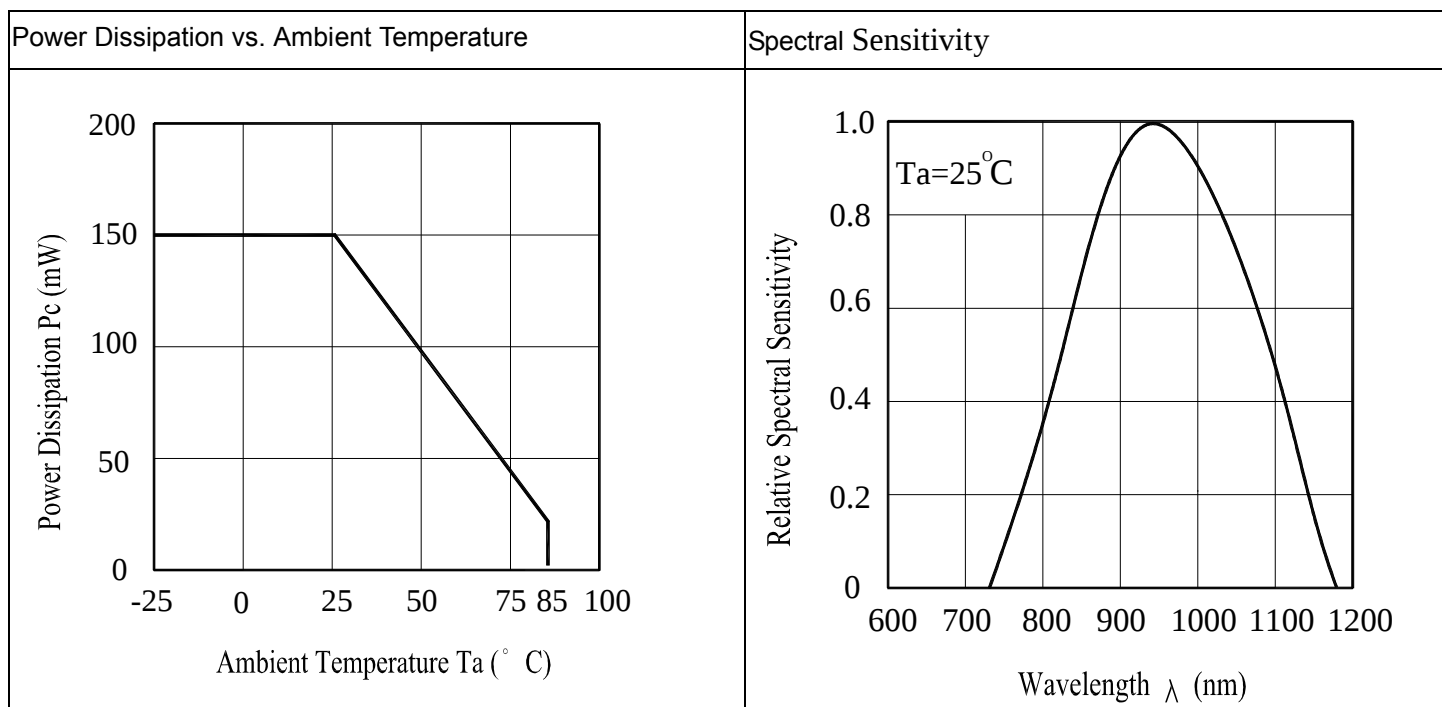
I_L Rank

Condition : Ee=1mW/cm²、 $\lambda_p=940\text{nm}$ 、VR=5V

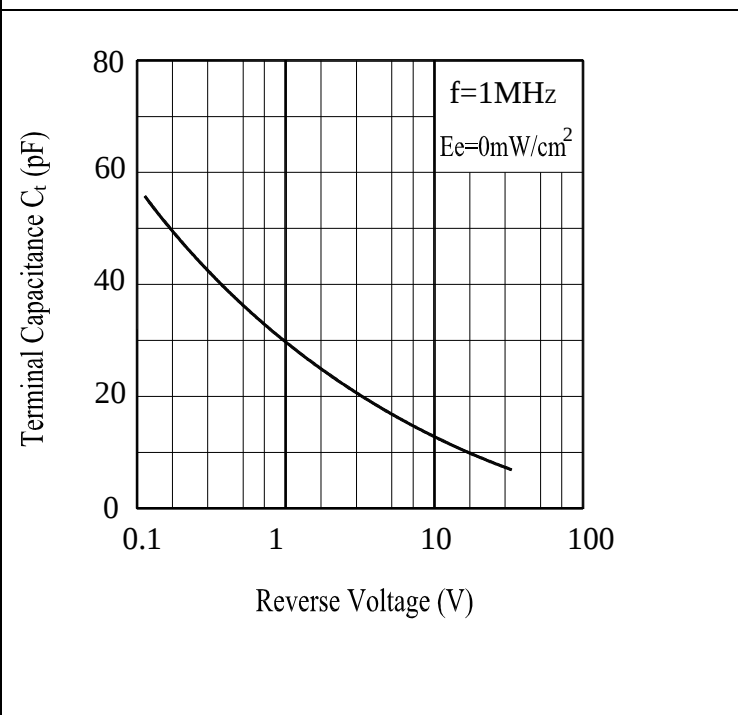
Unit : uA

Bin Number	BIN1	BIN2	BIN3	BIN4
Min	10.2	13.5	18.0	22.5
Max	16.5	22.0	27.5	33.0

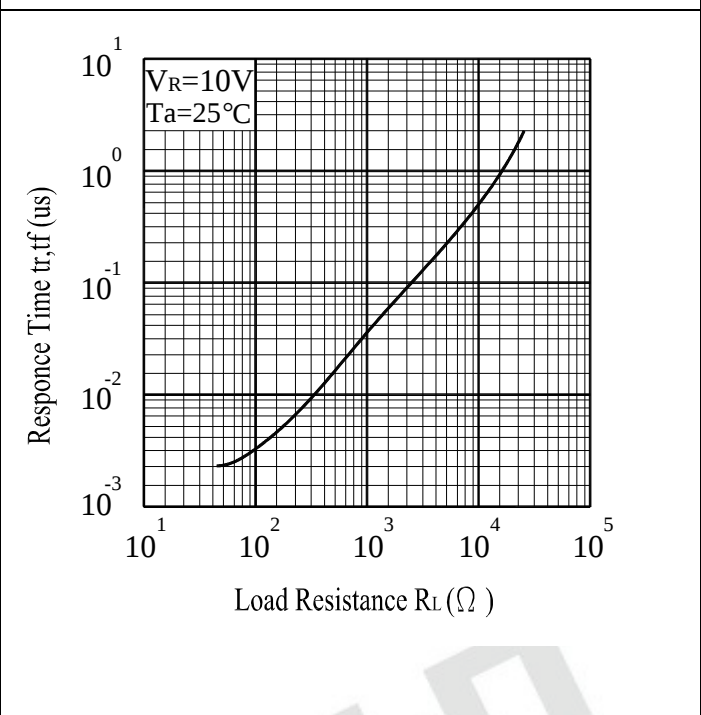
Typical Electro-Optical Characteristics Curves



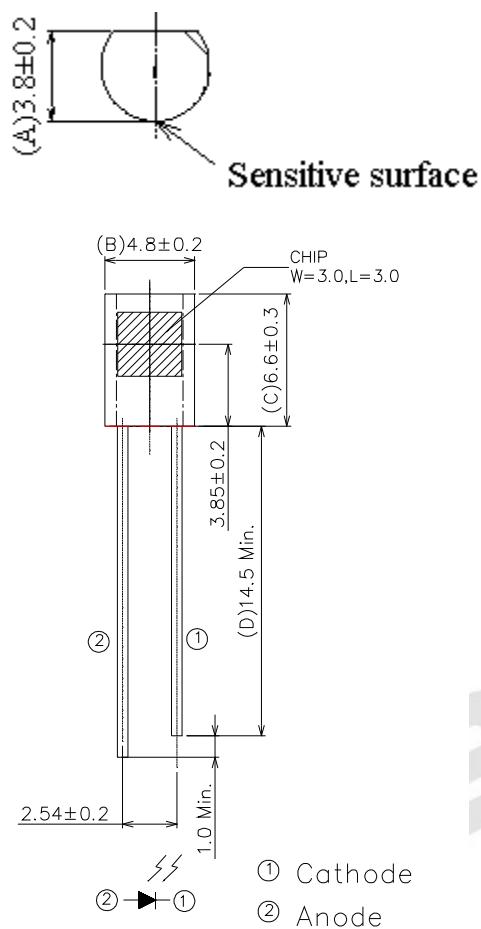
Terminal Capacitance vs. Reverse Voltage



Response Time vs. Load Resistance



Package Dimension



Note: Tolerances unless dimensions ± 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

The diagram shows a rectangular label form with the following elements:

- Top left: A circle containing 'Pb' (Pb-free marking).
- Top center: A rectangle containing 'EVERLIGHT'.
- Top right: A circle containing 'X' (Month marking).
- Below 'Pb': 'CPN:' and 'P/N:' labels.
- Below 'CPN/P/N': A large barcode area.
- Below the large barcode: 'PD438B'.
- Below 'PD438B': 'QTY:' label.
- Below 'QTY': A small barcode area.
- Below the small barcode: 'LOT NO:' label.
- Below 'LOT NO': A medium barcode area.
- Below the medium barcode: 'Reference' label.
- Below 'Reference': A small barcode area.
- Below 'QTY': 'CAT:', 'HUE:', and 'REF:' labels.
- Below 'CAT/HUE/REF': A small rectangle containing 'RoHS'.

- 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:

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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