

### 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

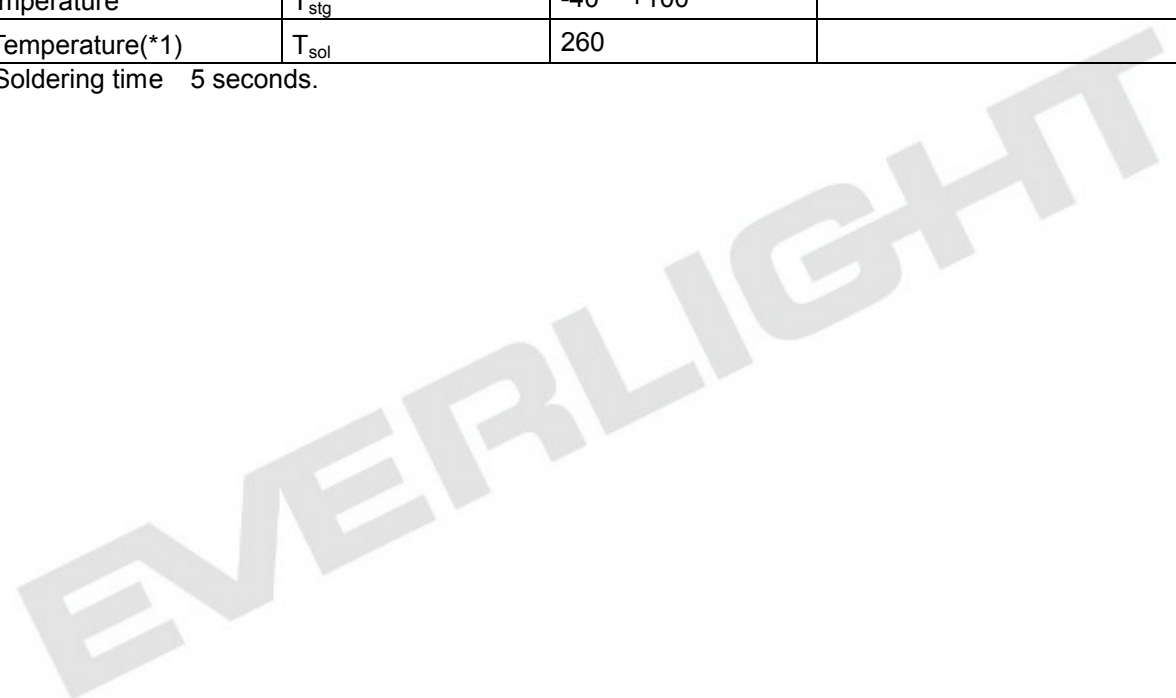
**Device Selection Guide**

Chip Materials	Lens Color
GaAIAs	Black

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

Parameter	Symbol	Rating	Unit
Reverse Voltage	$V_R$	32	mA
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.



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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Rang of Spectral Bandwidth	$\lambda_{0.5}$	840	-----	1100	nm	-----
Wavelength of Peak Sensitivity	$\lambda_p$	-----	940	-----	nm	-----
Open-Circuit Voltage	VOC	-----	0.35	-----	V	Ee=5m W/cm <sup>2</sup> $\lambda_p=940\text{nm}$
Short- Circuit Current	ISC	-----	18	-----	uA	Ee=1m W/cm <sup>2</sup> $\lambda_p=940\text{nm}$
Reverse Light Current	$I_L$	10.2	18	-----	uA	Ee=1m W/cm <sup>2</sup> $\lambda_p=940\text{nm}$ VR=5V
Dark Current	$I_d$	----	5	30	nA	Ee=0m W/cm <sup>2</sup> VR=10V
Reverse Breakdown	BVR	32	170	-----	V	Ee=0m W/cm <sup>2</sup> IR=100uA
Total Capacitance	Ct	----	25	----	pF	Ee=0m W/cm <sup>2</sup> VR=3V f=1MHZ
Rise/Fall Time	tr/tf	----	50/50	----	nS	VR=10V RL=1K $\Omega$

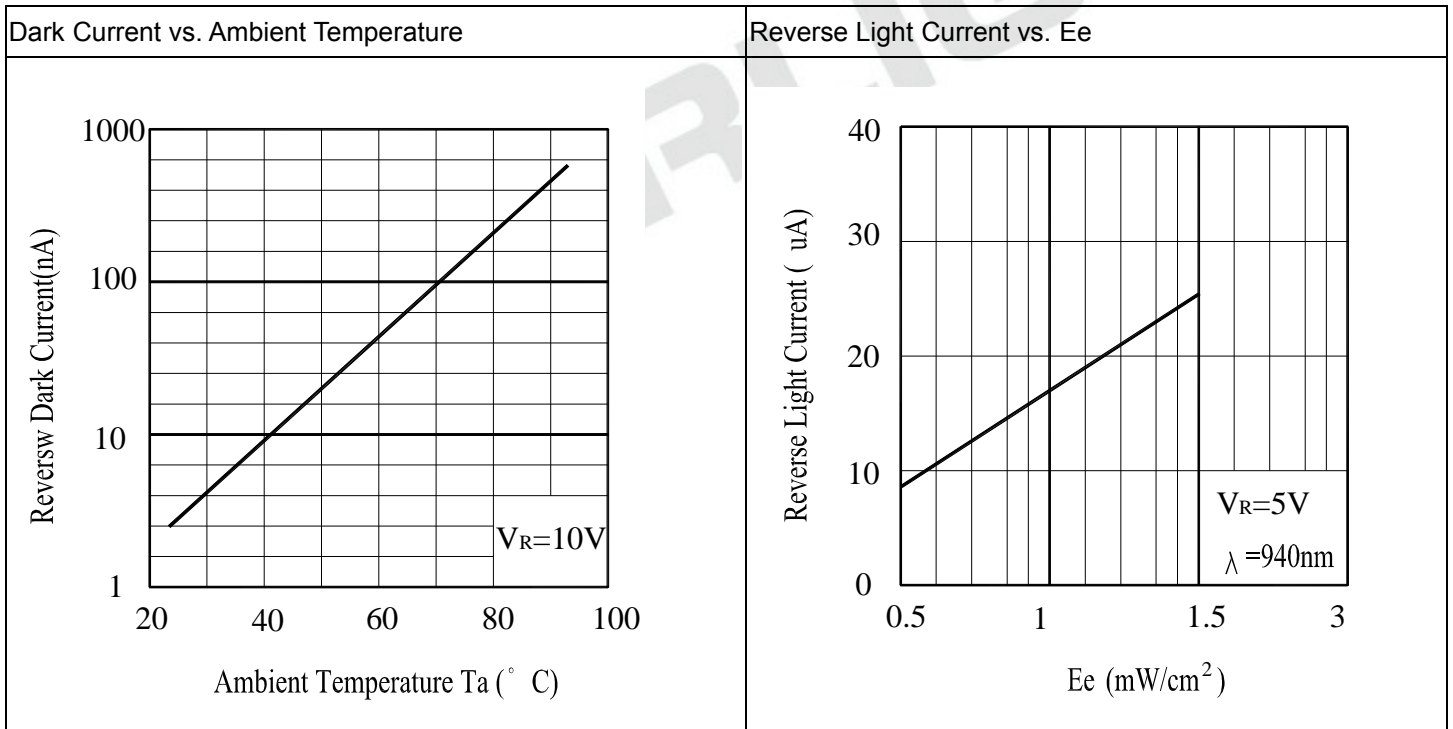
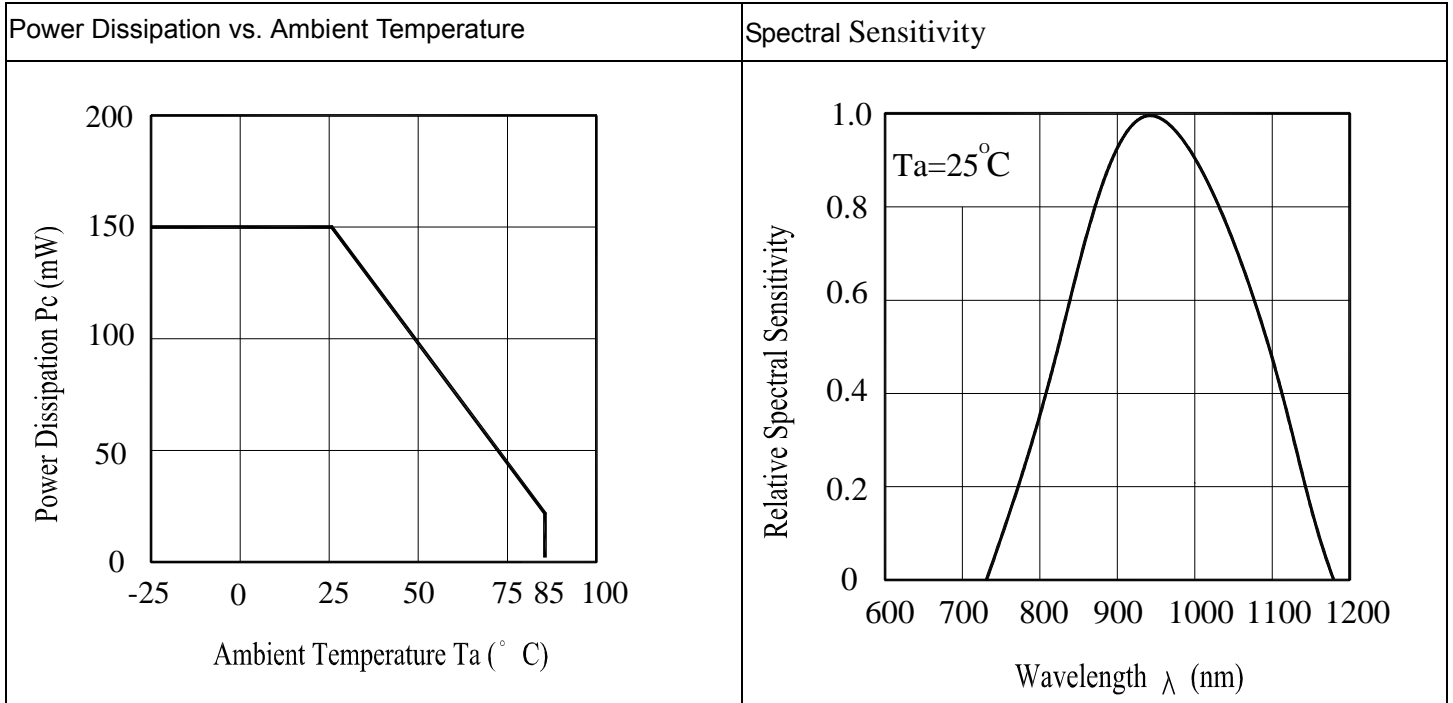
**$I_L$  Rank**

Condition : Ee=1mW/cm<sup>2</sup>、 $\lambda_p=940\text{nm}$ 、VR=5V

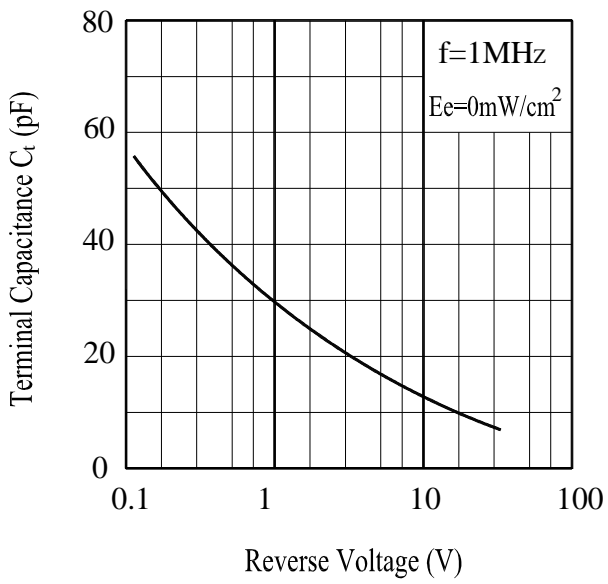
Unit : uA

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

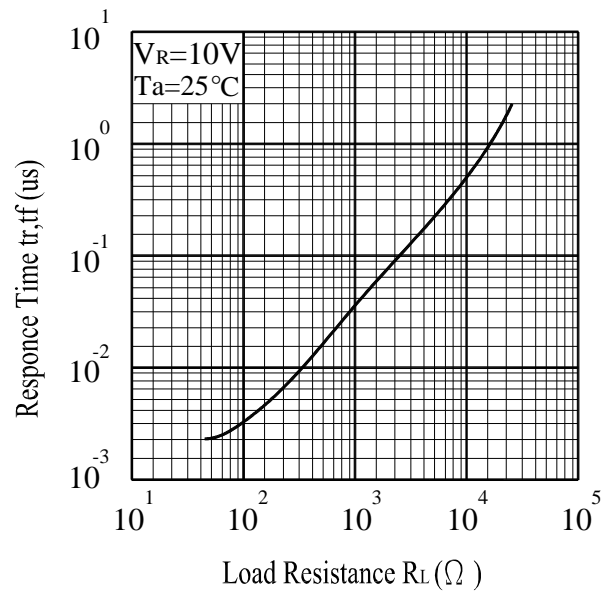
Typical Electro-Optical Characteristics Curves



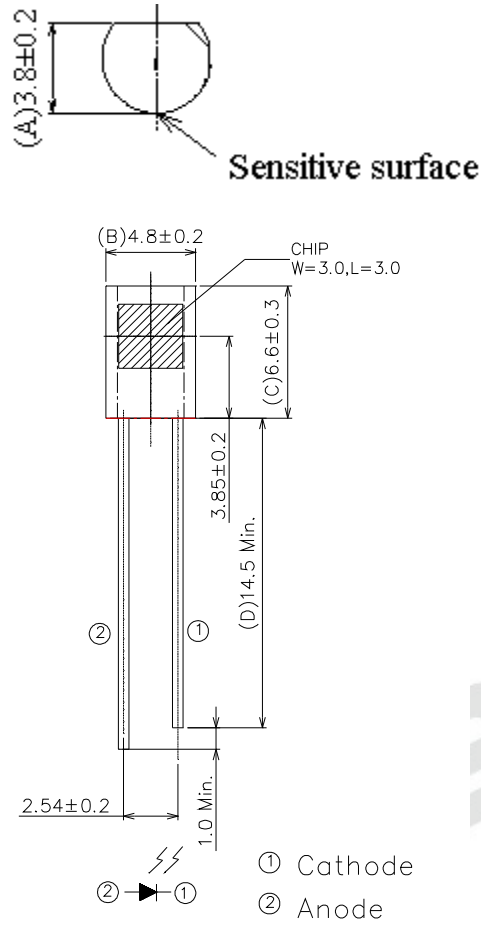
Terminal Capacitance vs. Reverse Voltage



Response Time vs. Load Resistance



Package Dimension



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

### 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
- 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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