

Technical Data Sheet

4.8mm Semi-Lens Silicon PIN Photodiode

PD438C

Features

- Fast response times
- High photo sensitivity
- Small junction capacitance
- Pb free
- The product itself will remain within RoHS compliant version.



Descriptions

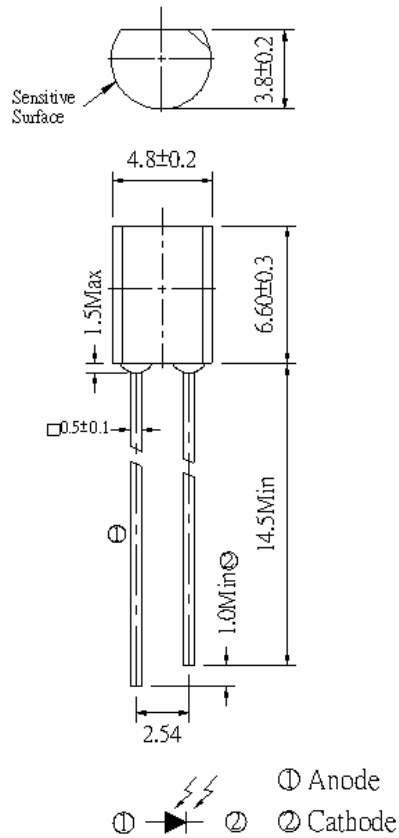
PD438C is a high speed and sensitive PIN photodiode in a cylindrical side view plastic package. Due to its water clear epoxy the device is sensitive to visible and infrared radiation.

Applications

- High speed photo detector
- Camera
- Optoelectronic switch
- VCRs , Video camera

Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
PD	Silicon	Water clear

Package Dimensions

Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions ± 0.25 mm

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Units
Reverse Voltage	V_R	32	V
Power Dissipation	P_d	150	mW
Lead Soldering Temperature	T_{sol}	260	°C
Operating Temperature	T_{opr}	-25 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +85	°C

Notes: *1:Soldering time ≤ 5 seconds.

Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Units
Rang of Spectral Bandwidth	$\lambda_{0.5}$	-----	400	---	1100	nm
Wavelength of Peak Sensitivity	λ_p	-----	---	940	---	nm
Open-Circuit Voltage	V_{OC}	Ee=5m W/cm ² λ_p =940nm	---	0.35	---	V
Short- Circuit Current	I_{SC}	Ee=1m W/cm ² λ_p =940nm	---	18	---	μA
Reverse Light Current	I_L	Ee=1m W/cm ² λ_p =940nm V_R =5V	10.2	18	---	
Dark Current	I_d	Ee=0m W/cm ² V_R =10V	---	5	30	nA
Reverse Breakdown	BV_R	Ee=0m W/cm ² I_R =100 μA	32	170	---	V
Total Capacitance	C_t	Ee=0m W/cm ² V_R =3V f=1MHZ	---	25	---	pF
Rise/Fall Time	t_r/t_f	V_R =10V R_L =1K Ω	---	50/50	---	nS

Typical Electro-Optical Characteristics Curves

Fig.1 Power Dissipation vs.
Ambient Temperature

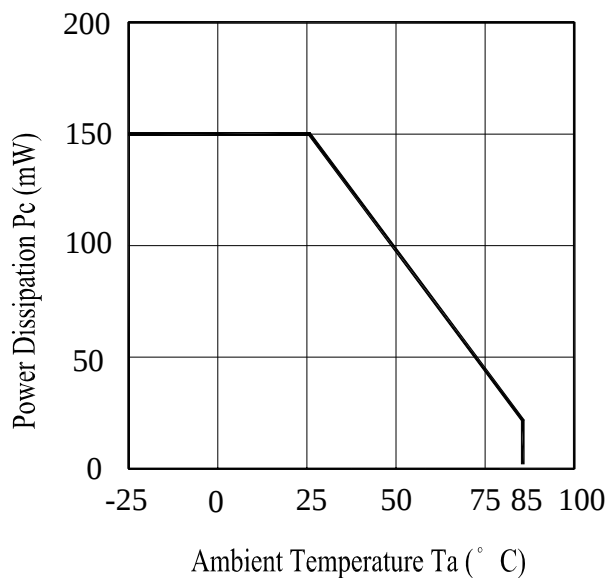


Fig.2 Spectral Sensitivity

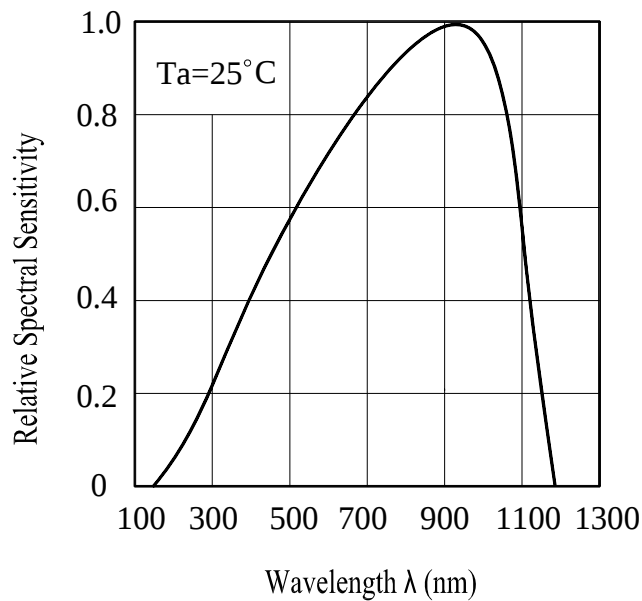


Fig.3 Dark Current vs.
Ambient Temperature

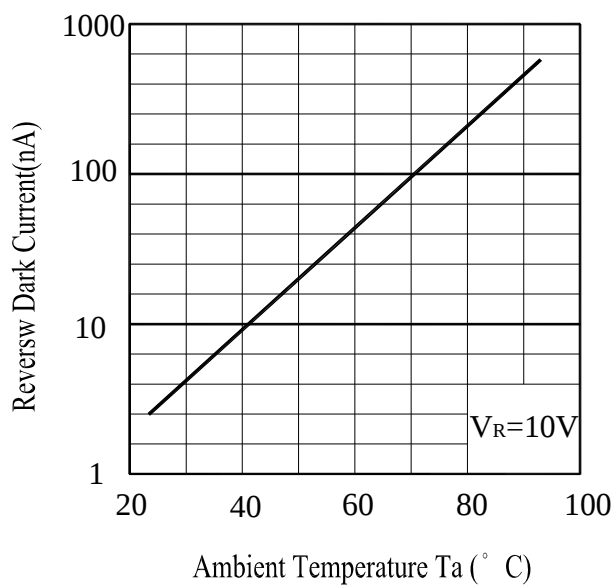
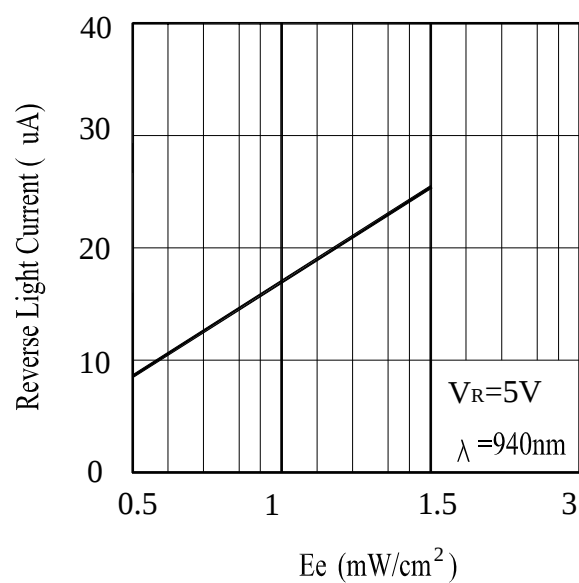


Fig. 4 Reverse Light Current vs.
 E_e



Typical Electro-Optical Characteristics Curves

Fig.5 Terminal Capacitance vs.
Reverse Voltage

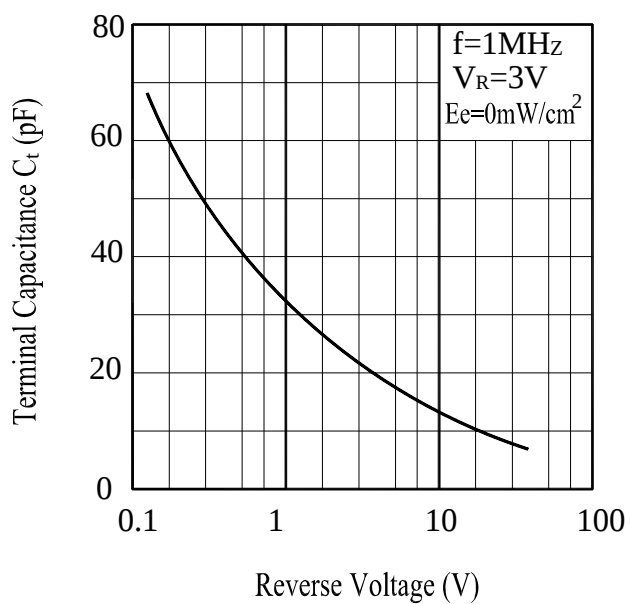
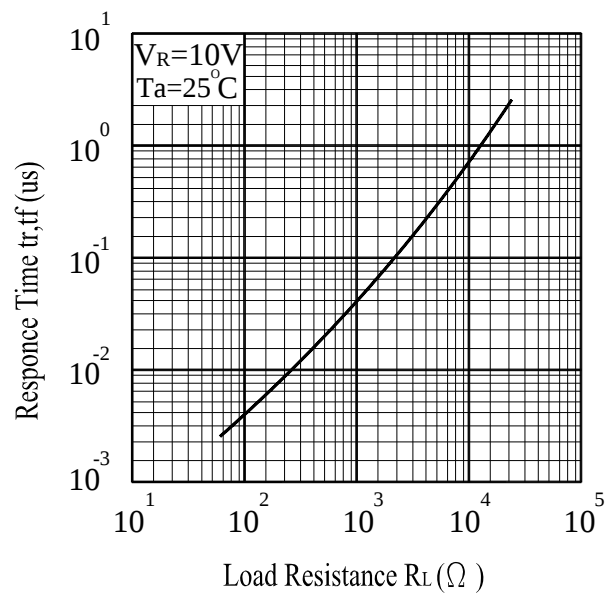


Fig.6 Response Time vs.
Load Resistance



Reliability Test Item And Condition

The reliability of products shall be satisfied with items listed below.

Confidence level : 90%

LTPD : 10%

NO.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/R e
1	Solder heat	TEMP. : 260°C±5°C	10secs	22pcs	I _L ≤ L×0.8 L : Lower Specification Limit	0/1
2	Temperature Cycle	H : +100°C 15mins ↑ ↓ 5mins L : -40°C 15mins	300Cycles	22pcs		0/1
3	Thermal Shock	H : +100°C 5mins ↑ 10secs L : -10°C ↓ 5mins	300Cycles	22pcs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -40°C	1000hrs	22pcs		0/1
6	DC Operating Life	V _R =5V	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85°C / 85% R.H	1000hrs	22pcs		0/1

Packing Quantity Specification

1.500PCS/1Bag , 6Bags/1Box

2.10Boxes/1Carton

Label Form Specification

EVERLIGHT	
CPN:	
P/N:	
	RoHS
QTY:	PD438C
	CAT:
LOT NO:	HUE:
	REF:
MADE IN TAIWAN	

CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

MADE IN TAIWAN: Production Place