

Technical Data Sheet

5mm Silicon PIN Photodiode , T-1 3/4

PD333-3C/H0/L3



Features

- Fast response time
- High photo sensitivity
- Small junction capacitance

Descriptions

PD333-3C/H0/L3 is a high speed and high sensitive PIN photodiode in a standard 5 ϕ plastic package. The device is spectrally matched to infrared emitting diode.

Applications

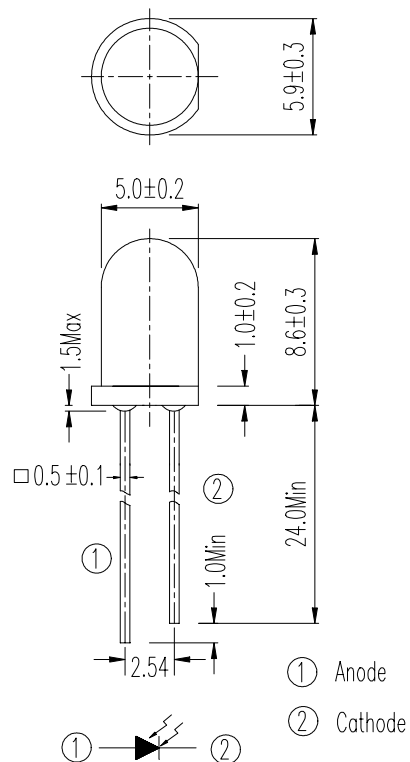
- High speed photo detector
- Security system

Device Selection Guide

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

Device No:DPD-033-083

Package Dimensions



- Notes:** 1.All dimensions are in millimeters
2.Tolerances unless dimensions ± 0.1 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	$\lambda_{0.5}$	-----	---	400-1200	---	nm
Wavelength of Peak Sensitivity	λ_p	-----	---	860	---	nm
Open-Circuit Voltage	V_{OC}	Ee=5m W/cm ² λ_p =940nm	---	0.44	---	V
Short- Circuit Current	I_{SC}	Ee=1m W/cm ² λ_p =940nm	---	7.8	---	μA
Reverse Light Current	I_L	Ee=1m W/cm ² λ_p =940nm V_R =5V	---	7.8	---	
Dark Current	I_d	Ee=0m W/cm ² V_R =10V	---	---	10	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 =5V f=1MHZ	---	10	---	pF
Rise/Fall Time	t_r/t_f	V_R =10V R_L =100 Ω	---	10/10	---	nS

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Typical Electro-Optical Characteristics Curves

Fig. 1 Power Dissipation vs. Ambient Temperature

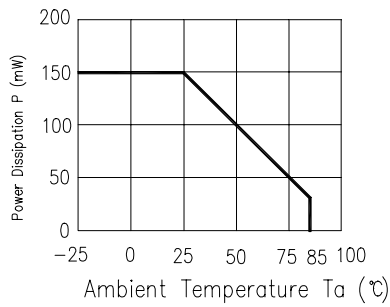


Fig.2 Spectral Sensitivity

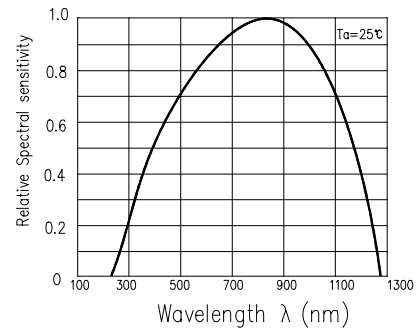


Fig.3 Dark Current vs. Ambient Temperature

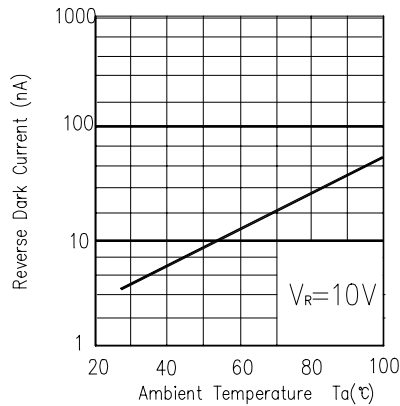


Fig.4 Reverse Light Current vs. E_e

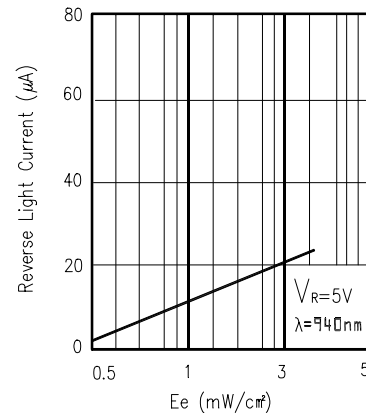


Fig.5 Terminal Capacitance vs. Reverse Voltage

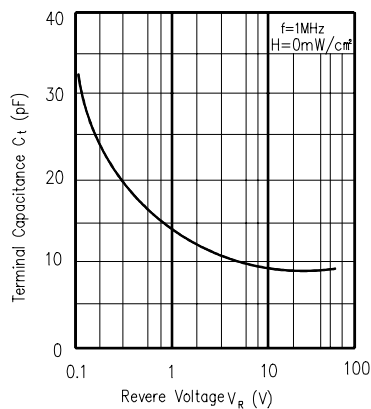
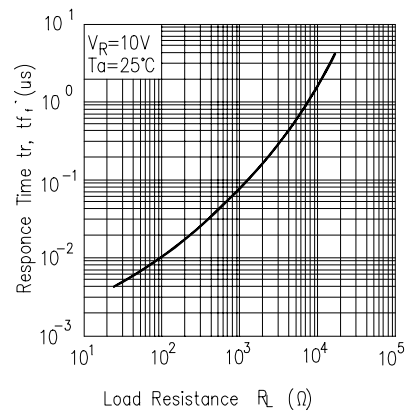


Fig.6 Response Time vs. Load Resistance



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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/Re
1	Solder Heat	TEMP : $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$	5secs	22pcs	$I_R \geq U \times 2$ $E_e \leq L \times 0.8$ $V_F \geq U \times 1.2$ U : Upper Specification Limit L : Lower Specification Limit	0/1
2	Temperature Cycle	H : $+85^{\circ}\text{C}$ 30mins 5mins $\updownarrow$ L : -55°C 30mins	50Cycle	22pcs		0/1
3	Thermal Shock	H : $+100^{\circ}\text{C}$ 5mins 10secs $\updownarrow$ L : -10°C 5mins	50Cycle	22pcs		0/1
4	High Temperature Storage	TEMP. : $+100^{\circ}\text{C}$	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP. : -55°C	1000hrs	22pcs		0/1
6	DC Operating Life	$V_R = 5\text{V}$	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85°C / 85% R.H	1000hrs	22pcs		0/1

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