

Technical Data Sheet

2.98 x 5.25mm Silicon PIN Photodiode

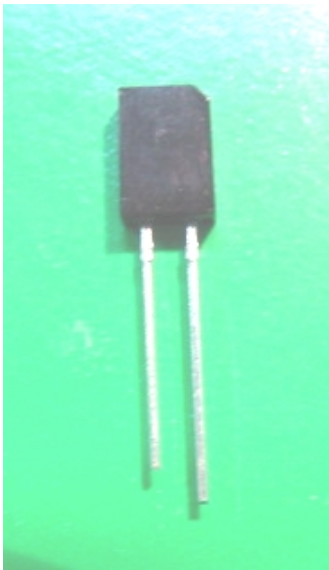
PD1648B/C4/L5-R

Features

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

Descriptions

- PD1648B/C4/L5-R is a high speed and sensitive plastic PIN photodiode in a flat side view plastic package. The epoxy package itself is an IR filter, spectrally matched to GaAs or GaAlAs IR emitter.



Applications

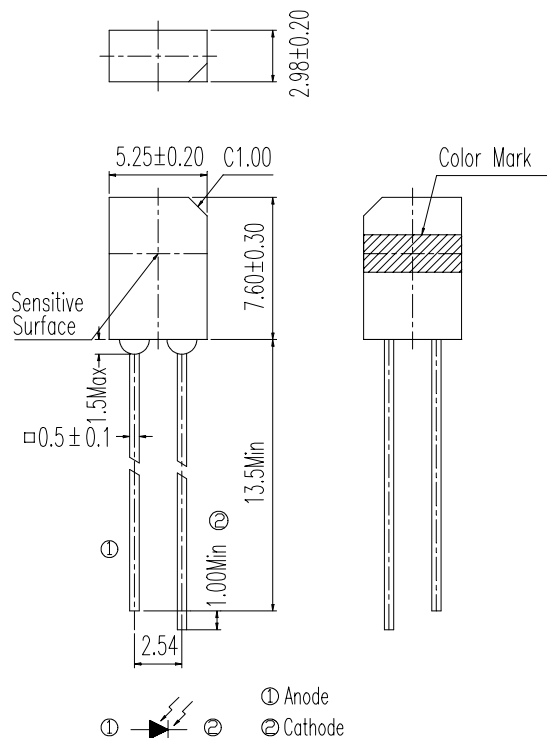
- High speed photo detector
- Camera
- Infrared remote controller for TVs VCR, audio equipment, air conditioner, etc. equipment, air conditioner, etc.

Device Selection Guide

LED Part No.	Chip	Lens Color
	Material	
PD	Silicon	Black

Device No:DPD-164-042

Package Dimensions



- Notes:** 1.All dimensions are in millimeters
2.Tolerances unless dimensions $\pm 0.25\text{mm}$

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	$\lambda_{0.5}$	-----	---	840-1200	---	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=5m W/cm ² λ_p =940nm	---	100	---	μA
Reverse Light Current	I_L	Ee=5m W/cm ² λ_p =940nm V_R =5V	80	100	---	
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

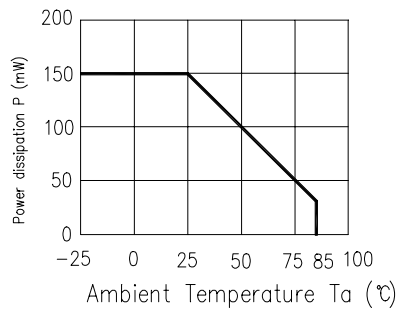


Fig.2 Spectral Sensitivity

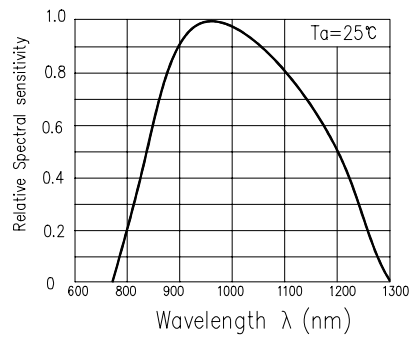


Fig.3 Dark Current vs. Ambient Temperature

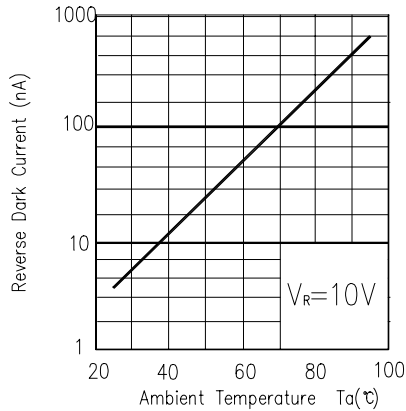


Fig.4 Reverse Light Current vs. E_e

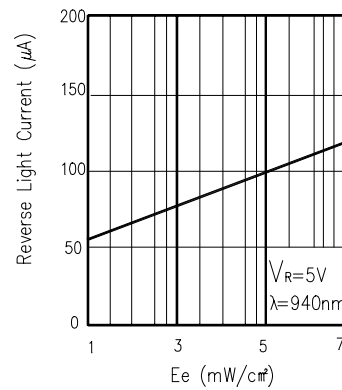


Fig.5 Terminal Capacitance vs. Reverse Voltage

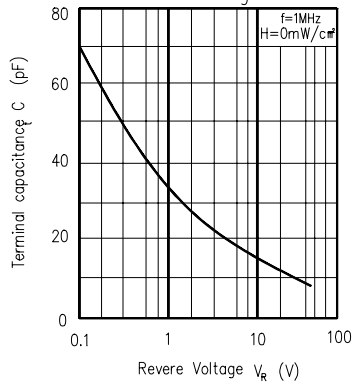
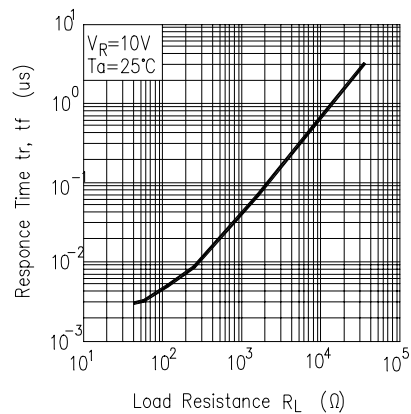


Fig.6 Response Time vs. Load Resistance



Device No:DPD-164-042

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 Judgment Criteria	Ac/Re
1	Solder Heat	TEMP. : $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$	10secs	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 $\updownarrow$ 5mins L : -55°C 30mins	50Cycles	22pcs		0/1
3	Thermal Shock	H : $+100^{\circ}\text{C}$ 5mins $\updownarrow$ 10secs L : -10°C 5mins	50Cycles	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	$I_F = 20\text{mA}$	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85°C / 85% R.H	1000hrs	22pcs		0/1

EVERLIGHT ELECTRONICS CO., LTD.

Office: No 25, Lane 76, Sec 3, Chung Yang Rd,
Tucheng, Taipei 236, Taiwan, R.O.C

Tel: 886-2-2267-2000, 2267-9936

Fax: 886-2267-6244, 2267-6189, 2267-6306

<http://www.everlight.com>

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