



Technical Data Sheet

2.0mm Silicon PIN Photodiode T-1

PT104-6B

Features

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

Descriptions

PT104-6B is a high speed and high sensitive PIN photodiode in a standard 3Φplastic package.

The epoxy package itself is an IR filter, spectrally matched to IR emitter.

Applications

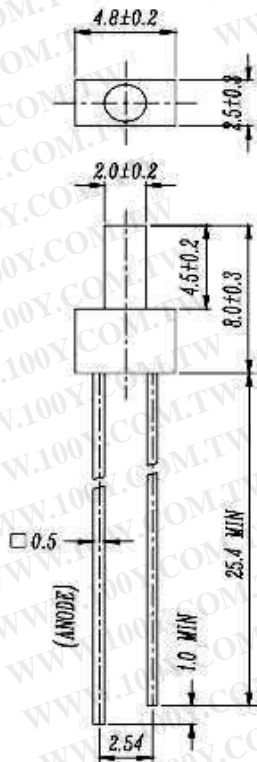
- Automatic door sensor
- Copier
- Game machine

Device Selection Guide

LED Part No.	Chip Material	Lens Color
PD	Silicon	Black

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-34970699
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

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
Operating Temperature	T _{opr}	-25 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +85	°C
Soldering Temperature	T _{sol}	260	°C
Power Dissipation at (or below) 25°C Free Air Temperature	P _c	150	mW

Notes: *1: Soldering time ≤ 5 seconds.



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Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Rang Of Spectral Bandwidth	$\lambda_{0.5}$	---	840	---	1100	nm
Wavelength Of Peak Sensitivity	λ_p	---	---	940	---	nm
Open-Circuit Voltage	V_{oc}	Ee=5mW/cm ² $\lambda_p=940\text{nm}$	---	0.44	---	V
Short- Circuit Current	I_{sc}	Ee=1mW/cm ² $\lambda_p=940\text{nm}$	---	8.0	---	μA
Reverse Light Current	I_L	Ee=1mW/cm ² $\lambda_p=940\text{nm}$ $V_R=5\text{V}$	3.5	8.0	---	μA
Reverse Dark Current	I_D	Ee=0mW/cm ² $V_R=10\text{V}$	---	---	10	nA
Reverse Breakdown Voltage	B_{VR}	Ee=0mW/cm ² $I_R=100\mu\text{A}$	32	170	---	V
Total Capacitance	C_t	Ee=0mW/cm ² $V_R=5\text{V}$ $f=1\text{MHz}$	---	10	---	pF
Rise Time	t_r	$V_R=10\text{V}$	---	10	---	nS
Fall Time	t_f	$R_L=100\Omega$	---	10	---	
View Angle	2 θ 1/2	$I_F=20\text{mA}$	--	30	--	deg

Typical Electro-Optical Characteristics Curves

Fig.1 Power Dissipation vs. Ambient Temperature

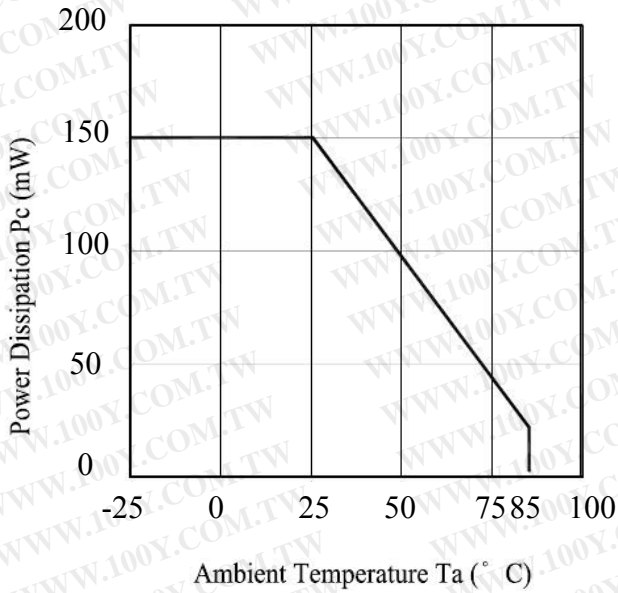


Fig.2 Spectral Sensitivity

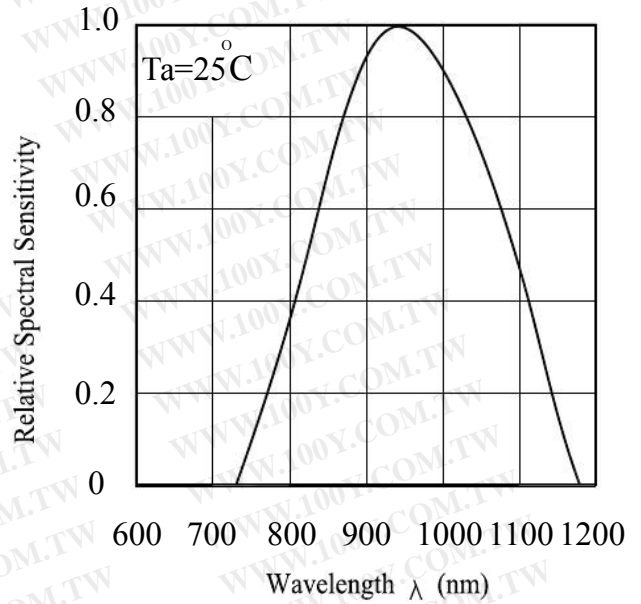


Fig.3 Dark Current vs. Ambient Temperature

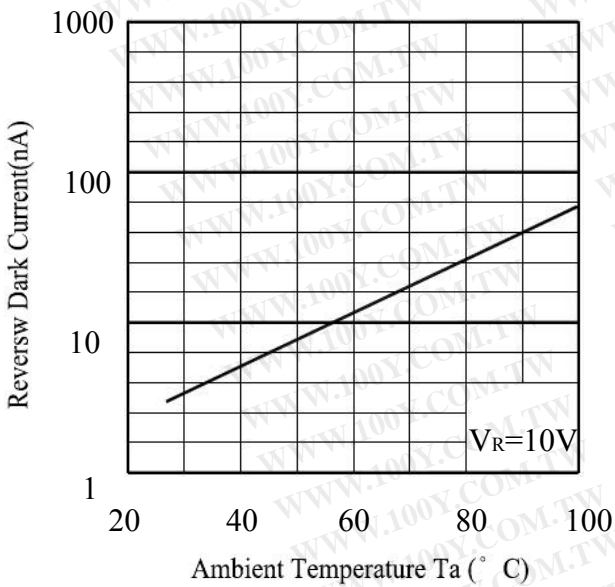
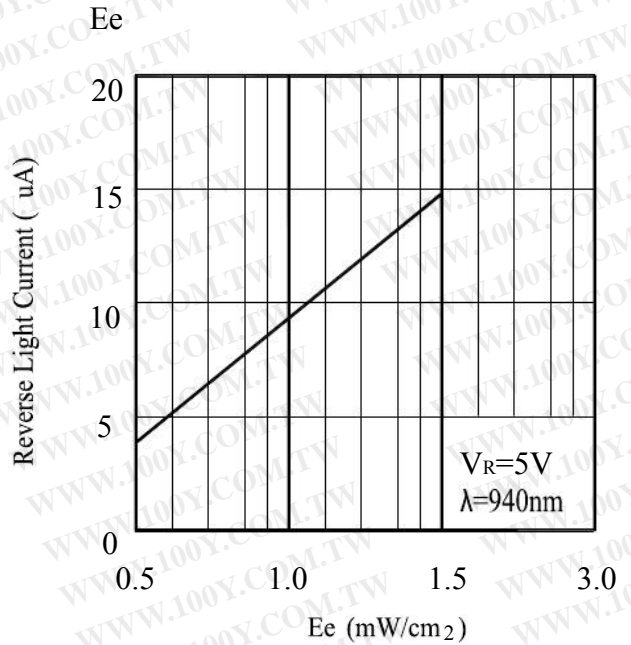


Fig. 4 Reverse Light Current vs. E_e



Typical Electro-Optical Characteristics Curves

Fig.5 Terminal Capacitance vs.

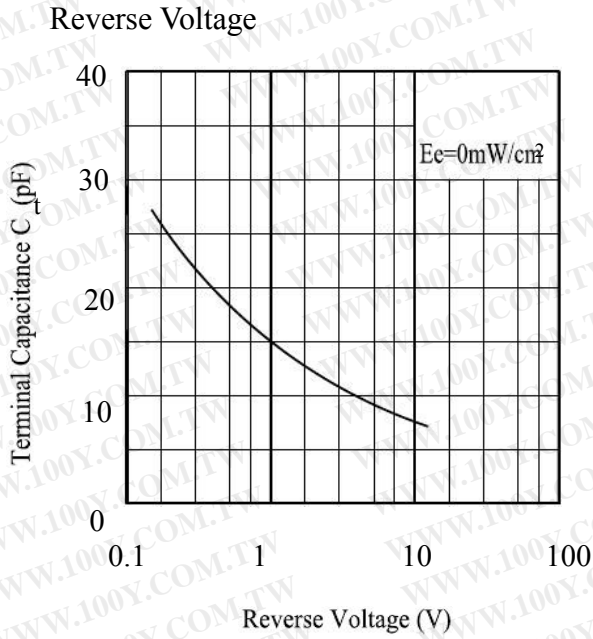


Fig.6 Response Time vs.

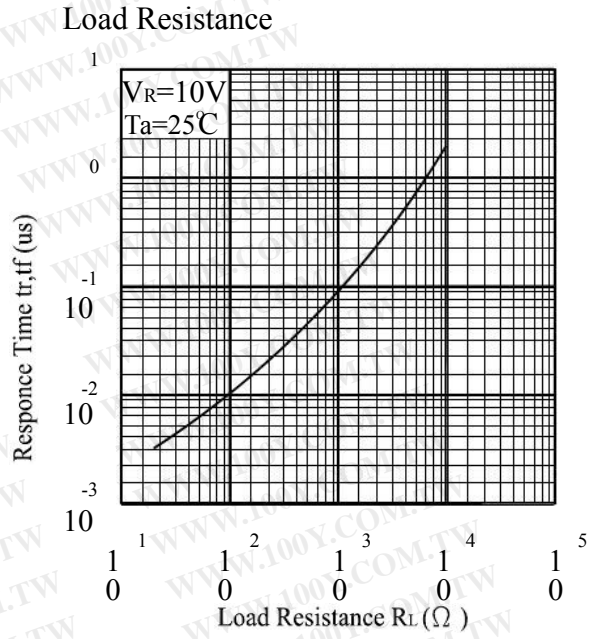


Fig.7 Relative Reverse Light Current vs. Ambient Temperature ($^\circ C$)

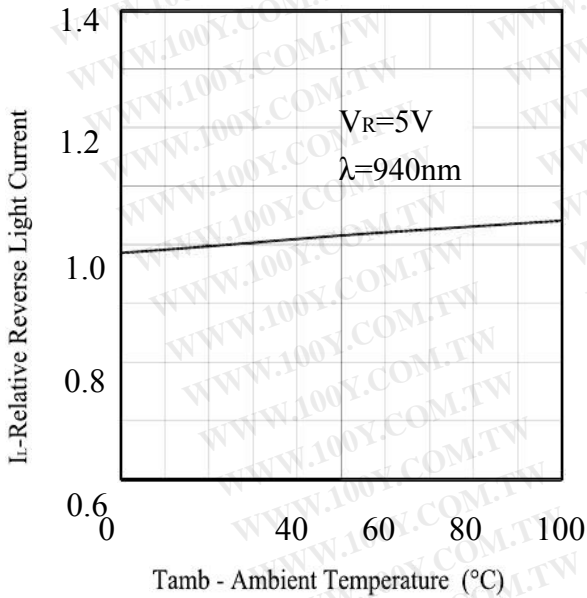
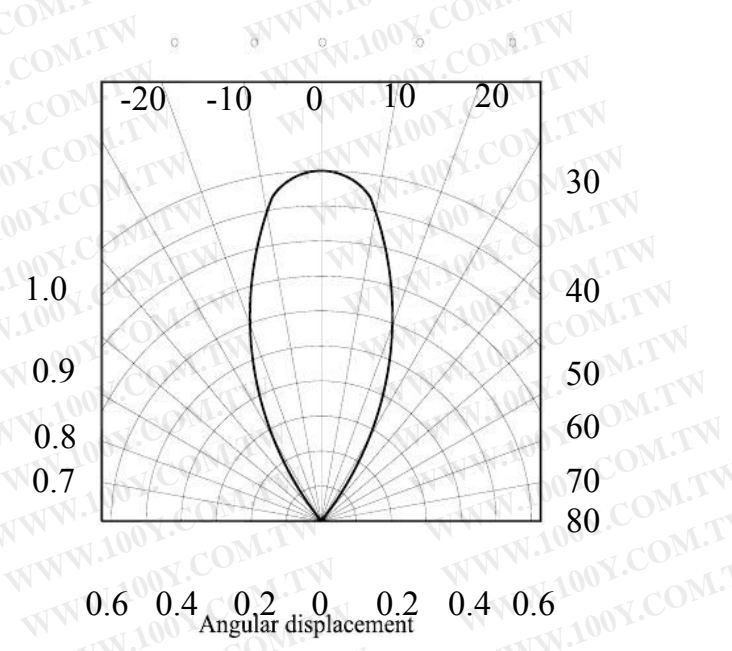


Fig.8 Sensitivity Diagram





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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.: $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$	10secs	22pcs		0/1
2	Temperature Cycle	H : $+100^{\circ}\text{C}$ 15mins \updownarrow 5mins L : -40°C 15mins	300Cycles	22pcs	$I_L \leq L \times 0.8$ L: Lower	0/1
3	Thermal Shock	H : $+100^{\circ}\text{C}$ 5mins \updownarrow 10secs L : -10°C 5mins	300Cycles	22pcs	Specification Limit	0/1
4	High Temperature Storage	TEMP.: $+100^{\circ}\text{C}$	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP.: -40°C	1000hrs	22pcs		0/1
6	DC Operating Life		1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	$V_R=5\text{V}$ $85^{\circ}\text{C} / 85\% \text{ R.H}$	1000hrs	22pcs		0/1



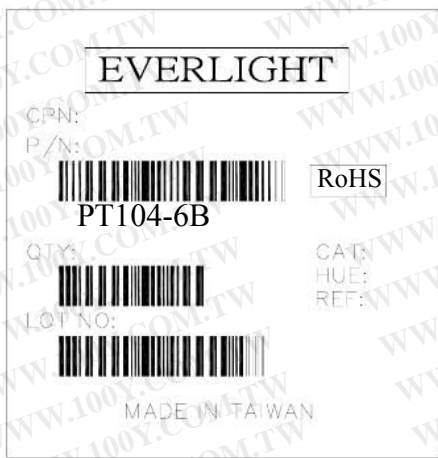
PT104-6B

Packing Quantity Specification

- 1.1000PCS/1Bag, 4Bags/1Box
- 2.10Boxes/1Carton

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Label Form Specification



- 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

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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