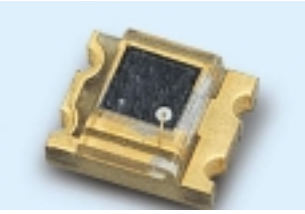
Technical Data Sheet
Silicin PIN Photodiode

PD15-22C/TR8



Features
- Fast response time
- High photo sensitivity
- Small junction capacitance
- Package in 8mm tape in “7” diameter reel

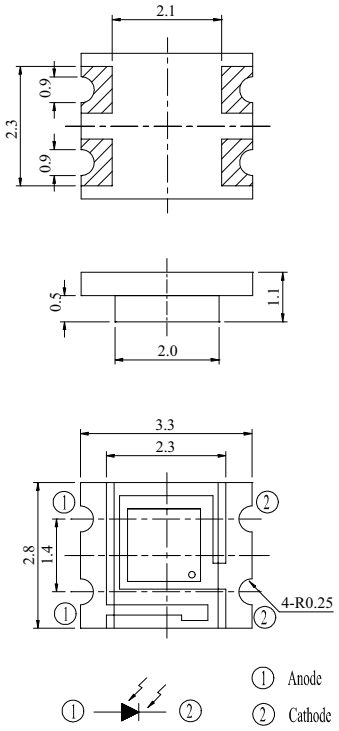
Descriptions
- PD15-22C/TR8 is a high speed and high sensitive PIN photodiode in miniature flat top view lens SMD package and it is molded in a water clear plastic. The device is Spectrally matched to visible and infrared emitting diode.

Applications
- High speed photo detector
- Copier
- Game machine

Device Selection Guide

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

Package Dimensions



Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions ± 0.1mm

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Units
Reverse Voltage	V_R	32	mA
Operating Temperature	T_{opr}	-25 ~ +85	℃
Storage Temperature	T_{stg}	-40 ~ +85	℃
Soldering Temperature	T_{sol}	260	℃
Power Dissipation at(or below) 25℃ Free Air Temperature	P_c	150	mW

Notes: *1:Soldering time≦5 seconds.

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Rang Of Spectral Bandwidth	$\lambda_{0.5}$	---	400	---	1100	nm
Wavelength Of Peak Sensitivity	λ_P	---	---	940	---	nm
Open-Circuit Voltage	V_{OC}	Ee=5mW /cm^2 λ_P=940nm	---	0.41	---	V
Short-Circuit Current	I_{SC}	Ee=1mW /cm^2 λ_P=875nm	---	6.5	---	μA
Reverse Light Current	I_L	Ee=1mW /cm^2 λ_P=875nm V_R=5V	4.2	6.5	---	μA
Dark Current	I_D	Ee=0mW /cm^2 V_R=10V	---	---	10	nA
Reverse Breakdown Voltage	B_{VR}	Ee=0mW /cm^2 I_R=100 μA	32	170	---	V
Total Capacitance	C_t	Ee=0mW /cm^2 f=1MHz V_R=5V	---	6	---	pF
Rise Time	t_r	V_R=5V R_L=1000Ω	---	10	---	nS
Fall Time	t_f		---	10	---	

Typical Electro-Optical Characteristics Curves

Fig.1 Power Dissipation vs. Ambient Temperature

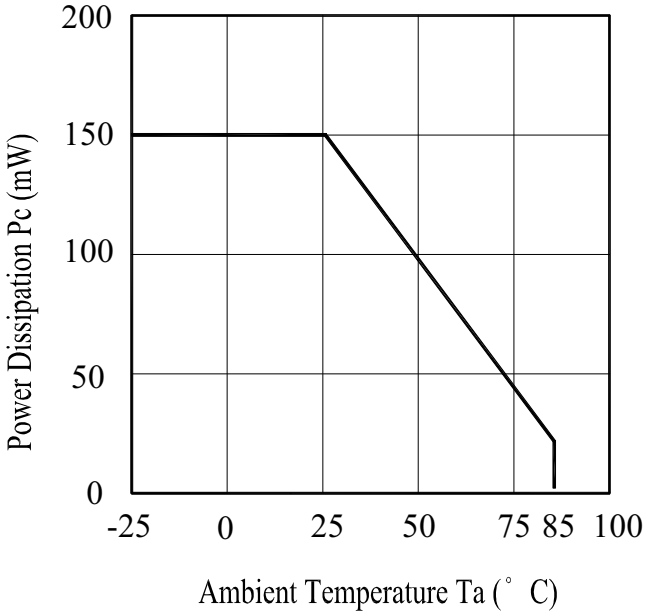


Fig.2 Spectral Sensitivity

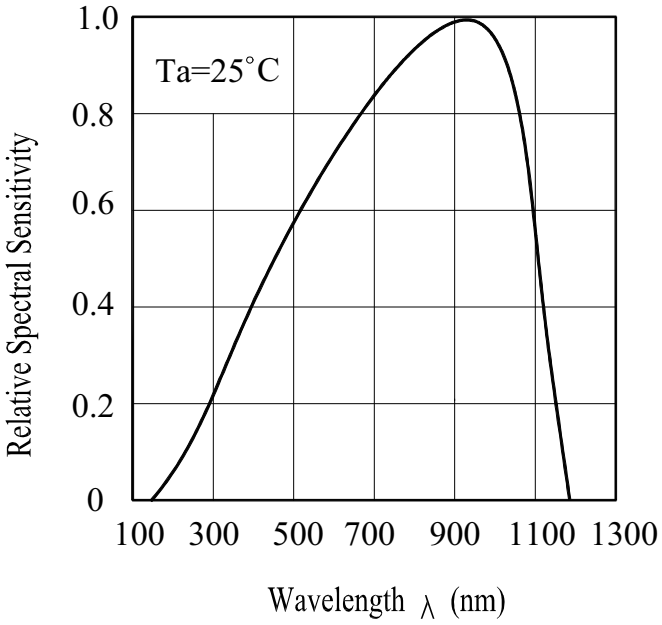


Fig.3 Dark Current vs. Ambient Temperature

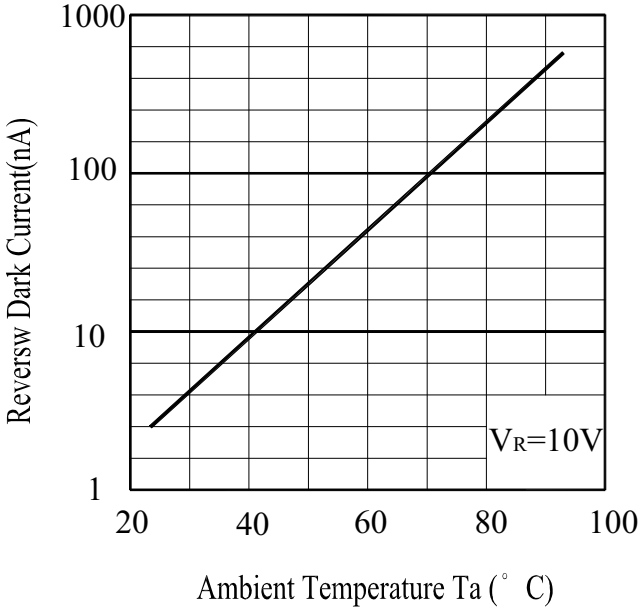
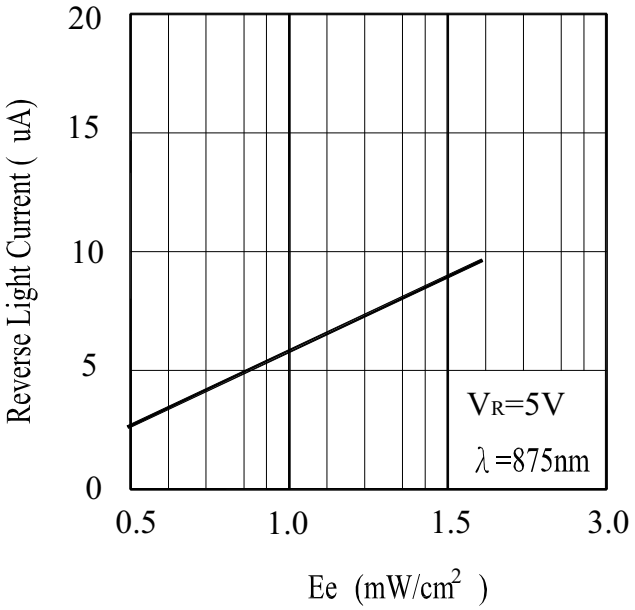


Fig.4 Reverse Light Current vs. Ee



Typical Electro-Optical Characteristics Curves

Fig.5 Terminal Capacitance vs. Reverse Voltage

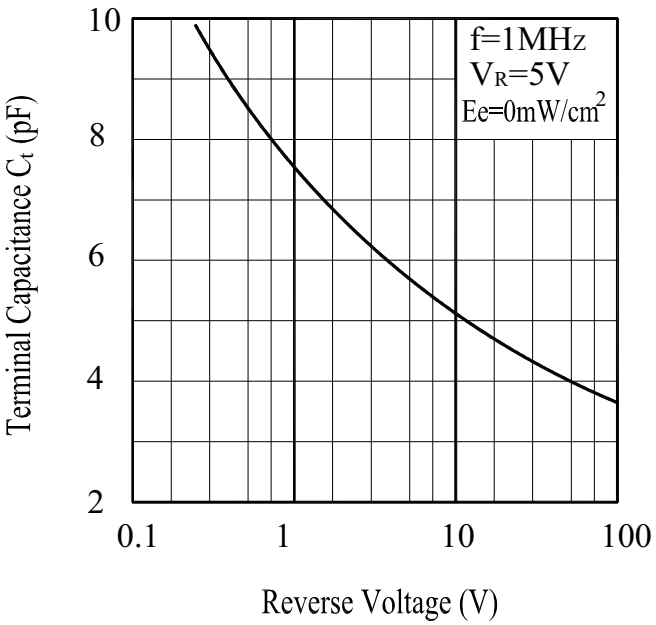
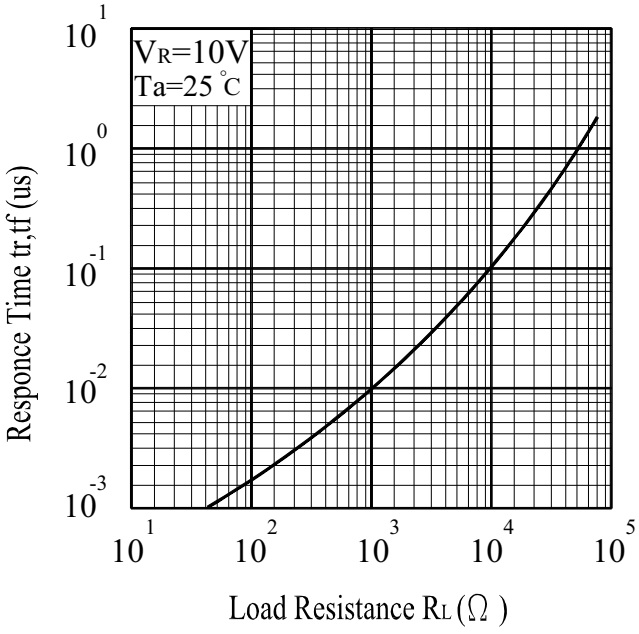
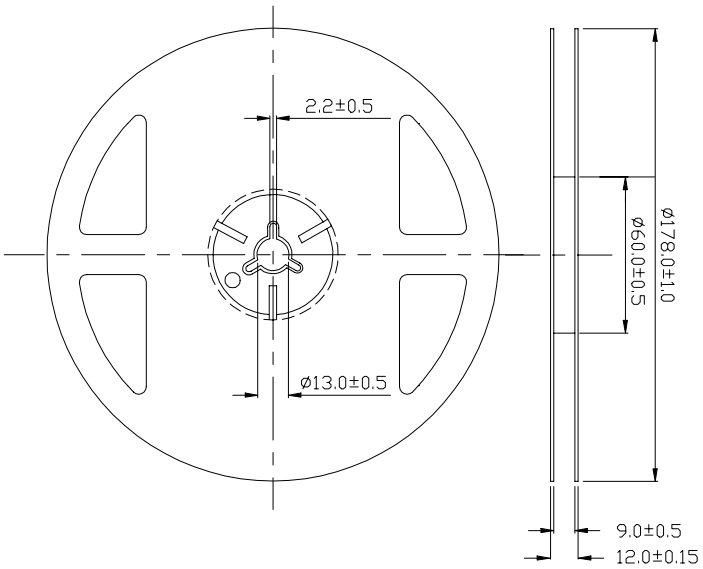


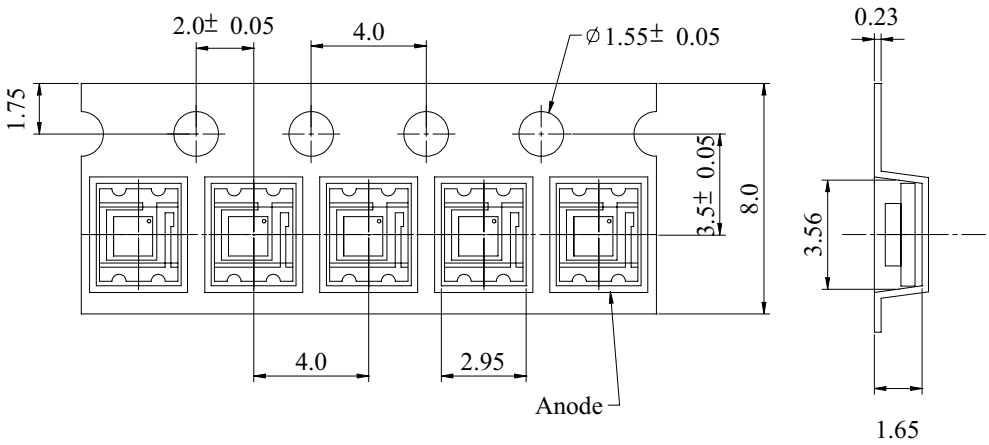
Fig.6 Response Time vs. Load Resistance



Package Dimensions



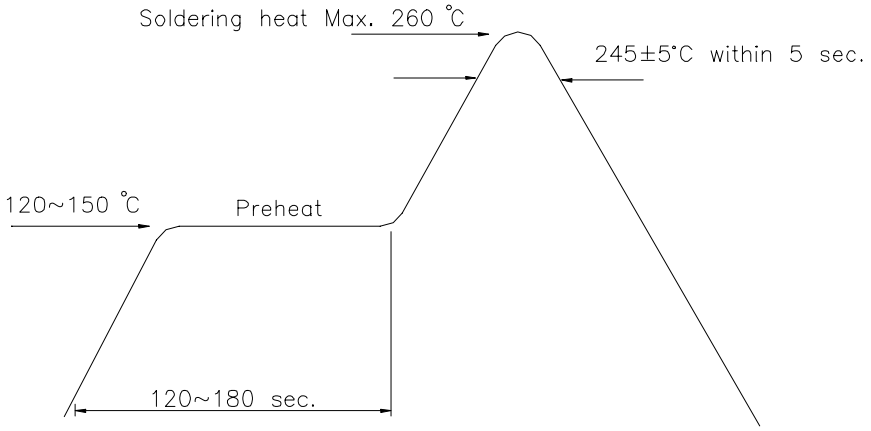
Loaded Quantity Per Reel 2000PCS/Reel



Tolerances Unless Dimension± 0.1
Angle± 0.5
Unit:mm

Soldering heat reliability(DIP)

Please refer to the following figure



Soldering Iron

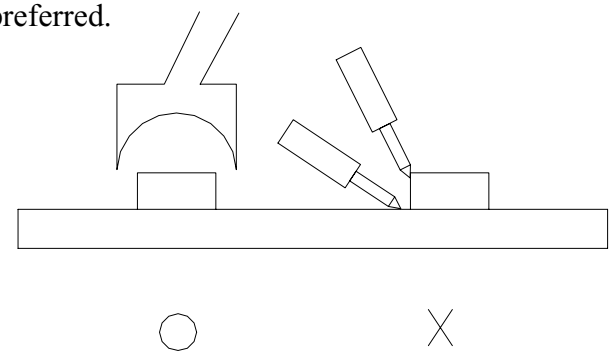
Basic spec is ≦5 sec when 260℃. If temperature is higher , time should be shorter (+10℃ ⟶ -1sec).Power dissipation of Iron should be smaller than 15W ,and temperature should be controllable. Surface temperature of the device should be under 230℃.

Rework

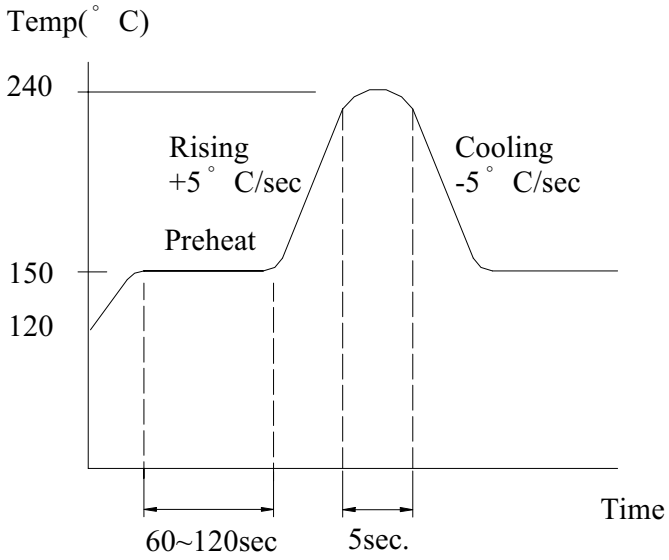
1.Customer must finish rework within 5 sec under 260℃

2.The head of iron can not touch copper foil.

3.Twin-head type is preferred.



Reflow Temp./Time



Precautions For Use

1.Over-current-proof

Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change(Burn out will happen).

2.Storage

2.1 The operation of temperature and R.H are：5℃ ~35℃ ， R.H.60%.

2.2 Once the package is opened , the products be should be used within a week. Otherwise , they should be keep in a damp proof box with desiccation anent. Considering the tape life , we suggest our customers to use products within a year (from production date).

2-3.If opened more than one week in an atmosphere 5℃ ~35℃ ，R.H.60%.,they should be treated at 60℃± 5℃ for 15hrs.

2-4.When you discover that the desiccant in the package has a pink color(normal=blue), you should treat them in the same conditions as 2.3

Reliability Test Item And Condition

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

Confidence level：90%

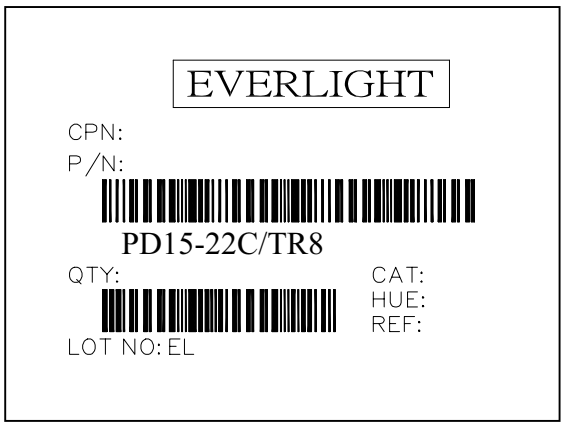
LTPD：10%

NO.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Failure Judgement Criteria	Ac/Re
1	REFLOW	TEMP.：240℃± 5℃ 5secs	6Mins	22pcs	$I_L \leqq L \times 0.8$ L：Lower Specification Limit	0/1
2	Temperature Cycle	H : +85℃ 30mins ↕ 5mins L : -55℃ 30mins	50Cycles	22pcs		0/1
3	Thermal Shock	H :+100℃ 5mins ↕ 10secs L :-10℃ 5mins	50Cycles	22pcs		0/1
4	High Temperature Storage	TEMP.：+100℃	1000hrs	22pcs		0/1
5	Low Temperature Storage	TEMP.：-55℃	1000hrs	22pcs		0/1
6	DC Operating Life	V_R=5V	1000hrs	22pcs		0/1
7	High Temperature/ High Humidity	85℃ / 85% R.H	1000hrs	22pcs		0/1

Packing Quantity Specification

1. 2000Pcs/1 Volume，1 Volume/1Bag
2. 55Bags/1Carton

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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