



## SIDE LOOK PHOTO DIODE

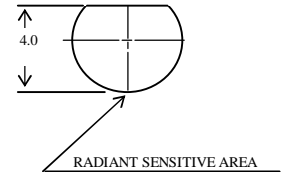
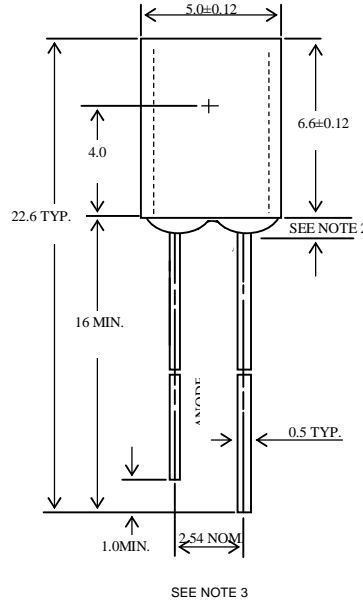
## PART NO. : CPD-85H1C

### Description

The CPD-85H1C is a photodiode mounted in special dark plastic package and suitable for the IRED (850nm/880nm/940nm) Type.

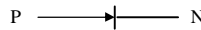
### Package Dimensions

Unit: mm



### Features

- High photo sensitivity
- Low junction capacitance
- High cut-off frequency
- Fast switching time



### Notes :

- Tolerance is  $\pm 0.25$  mm unless otherwise noted.
- Protruded resin under flange is 1.0 mm max.
- Lead spacing is measured where the leads emerge from the package.

### Absolute Maximum Ratings

@  $T_A=25^\circ\text{C}$

Parameter	Maximum Rating	Unit
Power Dissipation	150	mW
Operating Temperature Range	$-25^\circ\text{C}$ to $+85^\circ\text{C}$	
Storage Temperature Range	$-40^\circ\text{C}$ to $+100^\circ\text{C}$	
Lead Soldering Temperature	$260^\circ\text{C}$ for 5 seconds	



### Optical-Electrical Characteristics

@ T<sub>A</sub>=25°C

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Reverse Break Down Voltage	I <sub>R</sub> =0.1mA E <sub>e</sub> =0	V <sub>(BR)R</sub>	30			V
Reverse Dark Current	V <sub>R</sub> =10V E <sub>e</sub> =0	I <sub>D</sub>			30	nA
Open Circuit Voltage	850nm E <sub>e</sub> =0.1mW/cm <sup>2</sup>	V <sub>OC</sub>		350		mV
Rise Time	V <sub>R</sub> =10V 850nm	T <sub>r</sub>		30		nsec
Fall Time	R <sub>L</sub> =1KW	T <sub>f</sub>		30		
Light Current	V <sub>R</sub> =5V, 850nm E <sub>e</sub> = 1mW/cm <sup>2</sup>	I <sub>L</sub>	9.5	20		
Total Capacitance	V <sub>R</sub> =3V, f=1MHz E <sub>e</sub> =0	C <sub>T</sub>		25		pF

### Typical Optical-Electrical Characteristic Curves

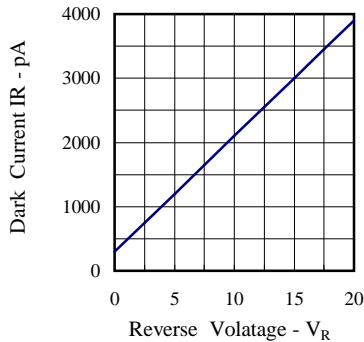


FIG.1 DARK CURRENT VS REVERSE VOLTAGE  
T<sub>AMB</sub>=25°C, E<sub>e</sub>=0 mW/cm<sup>2</sup>

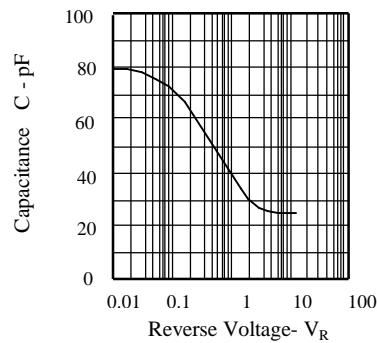


FIG.2 CAPACITANCE VS. REVERSE VOLTAGE  
F=1MHz ; E<sub>e</sub>=0mW/cm<sup>2</sup>

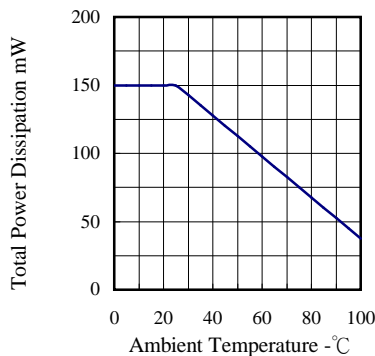


FIG.3 TOTAL POWER DISSIPATION  
VS. AMBIENT TEMPERATURE

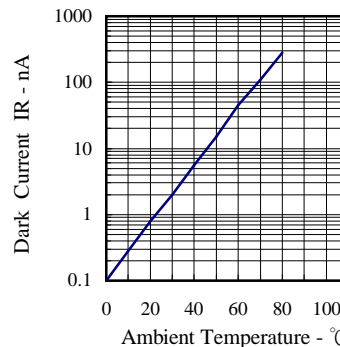


FIG.4 DARK CURRENT VS AMBIENT TEMPERATURE  
V<sub>R</sub>=10V, E<sub>e</sub>=0 mw/cm<sup>2</sup>



### Typical Optical-Electrical Characteristic Curves

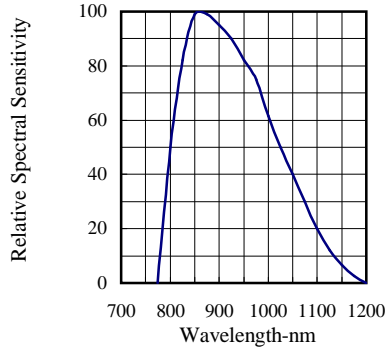


FIG.5 RELATIVE SPECTRAL SENSITIVITY VS. WAVELENGTH

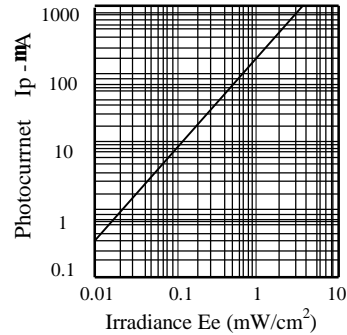


FIG.6 PHOTOCURRENT VS. IRRADIANCE = 850 nm

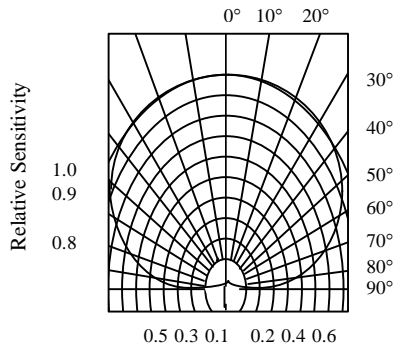


FIG.7 SENSITIVITY DIAGRAM



## Reliability test items and test conditions

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

Confidence level : 90%

LTPD (group of permitted defect rate): 10%

No.	Item	Test Conditions	Test Hours/ Cycles	Sample Sizes	Ac/Re	Reference Standard
1	REFLOW Soldering	Temp. : 260 ±5	5secs	22PCS	0/1	JEITA ED-4701 300 302
2	Temperature Cycle	H : +100 15min ~ 5 min L : -40 15min	100Cycles	22PCS	0/1	JEITA ED-4701 100 305
3	Thermal Shock	H : +100 5min ~ 10 sec L : -10 5min	100Cycles	22PCS	0/1	MIL-STD-202G
4	High Temperature Storage	Temp. : 100	1000Hrs	22PCS	0/1	JEITA ED-4701 200 201
5	Low Temperature Storage	Temp. : -40	1000Hrs	22PCS	0/1	JEITA ED-4701 200 202
6	DC Operating Life	IF = 50 mA	1000Hrs	22PCS	0/1	Tested with CGX standard
7	High Temperature/ High Humidity	85 /RH85%	1000Hrs	22PCS	0/1	JEITA ED-4701 100 103

Notes : Failure Judgement Criteria : IR U×2 Ie L×0.8 VF U×1.2

U : Upper Specification Limit L : Lower Specification Limit