



SIDE LOOK PHOTO DIODE

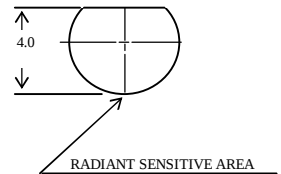
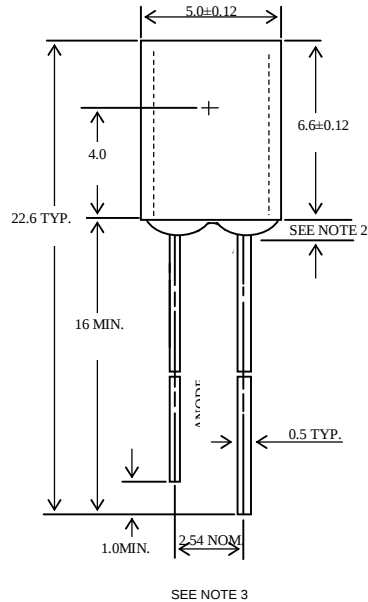
PART NO. : CPD-85H1C

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



P ———> | ———> N

Features

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

Notes :

- Tolerance is ± 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°C to $+85^\circ\text{C}$	
Storage Temperature Range	-40°C to $+100^\circ\text{C}$	
Lead Soldering Temperature	260°C for 5 seconds	



Optical-Electrical Characteristics

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

Parameter	Test Conditions	Symbol	Min.	Typ.	Max.	Unit
Reverse Break Down Voltage	$I_R=0.1\text{mA}$ $E_e=0$	$V_{(BR)R}$	30	-----	-----	V
Reverse Dark Current	$V_R=10\text{V}$ $E_e=0$	I_D	-----	-----	30	nA
Open Circuit Voltage	$\lambda_p=850\text{nm}$ $E_e=0.1\text{mW/cm}^2$	V_{OC}	-----	350	-----	mV
Rise Time	$V_R=10\text{V}$ $\lambda_p=850\text{nm}$	T_r	-----	30	-----	nsec
Fall Time	$R_L=1\text{KW}$	T_f	-----	30	-----	
Light Current	$V_R=5\text{V}$, $\lambda_p=850\text{nm}$ $E_e=1\text{mW/cm}^2$	I_L	9.5	20	-----	μA
Total Capacitance	$V_R=3\text{V}$, $f=1\text{MHz}$ $E_e=0$	C_T	-----	25	-----	pF

Typical Optical-Electrical Characteristic Curves

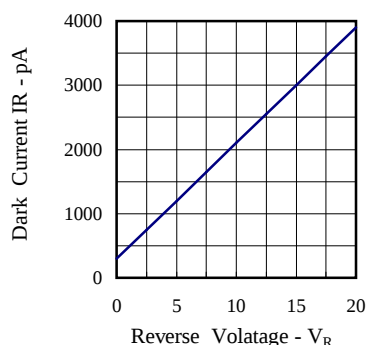


FIG.1 DARK CURRENT VS REVERSE VOLTAGE
 $T_{AMB}=25^{\circ}\text{C}$, $E_e=0\text{ mW/cm}^2$

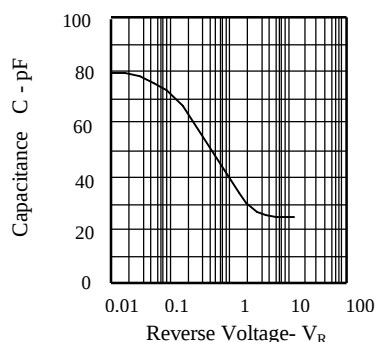


FIG.2 CAPACITANCE VS. REVERSE VOLTAGE
 $F=1\text{MHz}$; $E_e=0\text{mW/cm}^2$

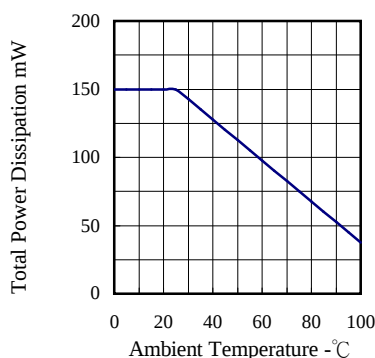


FIG.3 TOTAL POWER DISSIPATION
VS. AMBIENT TEMPERATURE

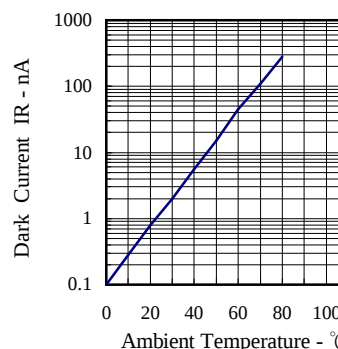


FIG.4 DARK CURRENT VS AMBIENT TEMPERATURE
 $V_R=10\text{V}$, $E_e=0\text{ mw/cm}^2$



Typical Optical-Electrical Characteristic Curves

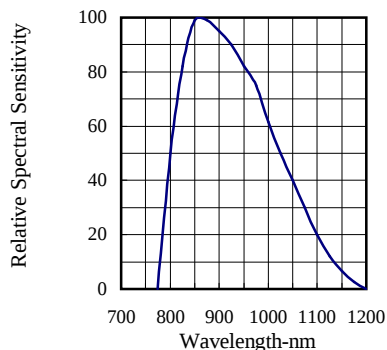


FIG.5 RELATIVE SPECTRAL SENSITIVITY
VS. WAVELENGTH

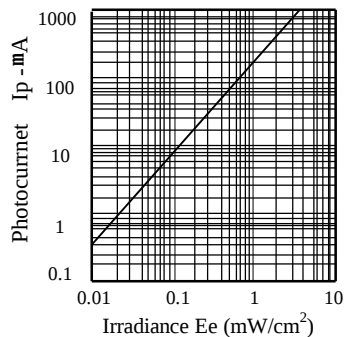


FIG.6 PHOTOCURRENT VS.
IRRADIANCE = 850 nm

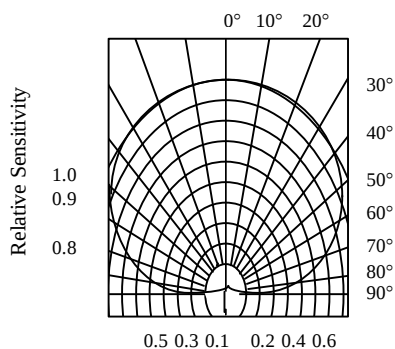


FIG.7 SENSITIVITY DIAGRAM



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 : $IR \geq U \times 2$ $I_e \leq L \times 0.8$ $VF \geq U \times 1.2$

U : Upper Specification Limit L : Lower Specification Limit