



PP1101W-1

Surface Mount PIN Photodiode/Flat Lenz Type

Features

Package	Flat Lenz Type, Water clear epoxy
Product features	<ul style="list-style-type: none">• Small Size• Outer Dimension 3.0 x 2.0 x 1.5mm (L x W x H)• Photo Current : 4mA TYP. ($V_{CE}=5V, E_e=5mW/cm^2$)• Wide Distribution• No lead package• RoHS compliant
Peak Sensitivity Wavelength	950nm
Half Intensity Angle	140 deg.
Die materials	Si
Assembly method	Auto pick & place machine (Auto Mounter)
Soldering methods	Reflow soldering, and manual soldering ※Please refer to Soldering Conditions about soldering.
Taping and reel	2,500pcs per reel in a 8mm width tape. (Standard) Reel diameter: ϕ 180mm
ESD	2kV (HBM)

Recommended Applications

Car Audio, Electric Household Appliances, OA/FA, PC/Peripheral Equipment, Other General Applications



Absolute Maximum Ratings

(Ta=25°C)

Item	Symbol	Absolute Maximum Ratings	Unit
Power Dissipation	P_d	30	mW
Reverse Voltage	V_R	15	V
Operating Temperature	T_{opr}	-30~+85	°C
Storage Temperature	T_{stg}	-30~+90	°C

Electro-Optical Characteristics

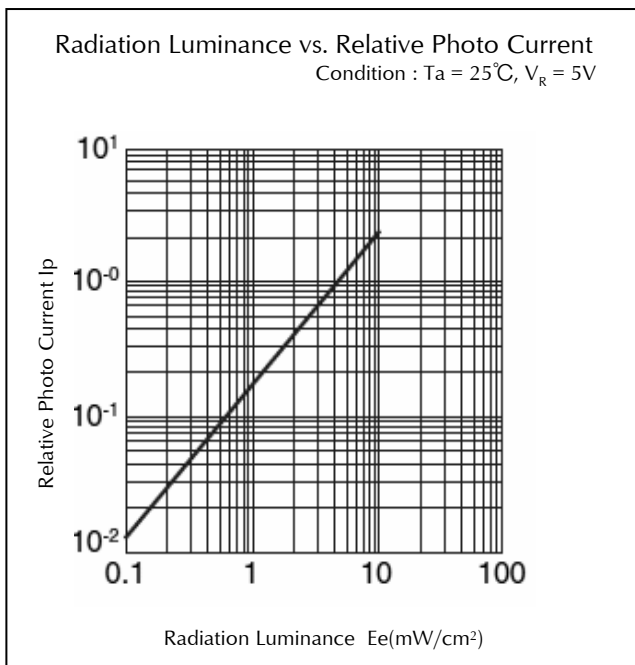
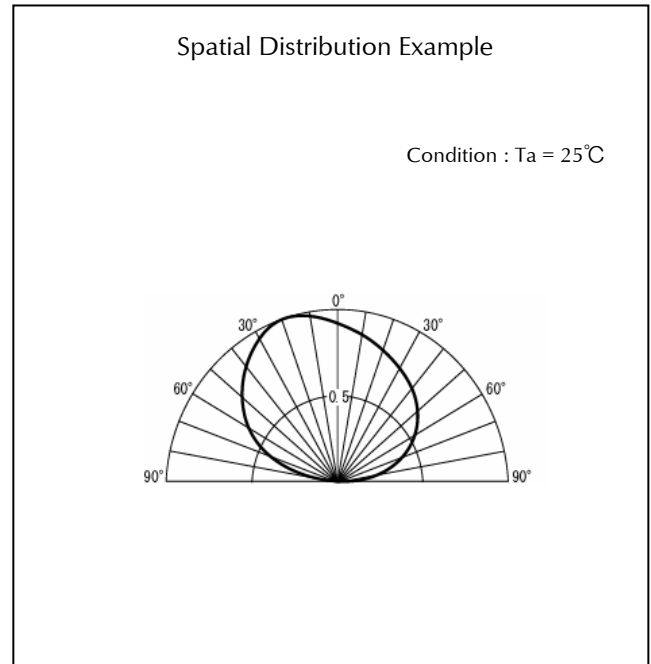
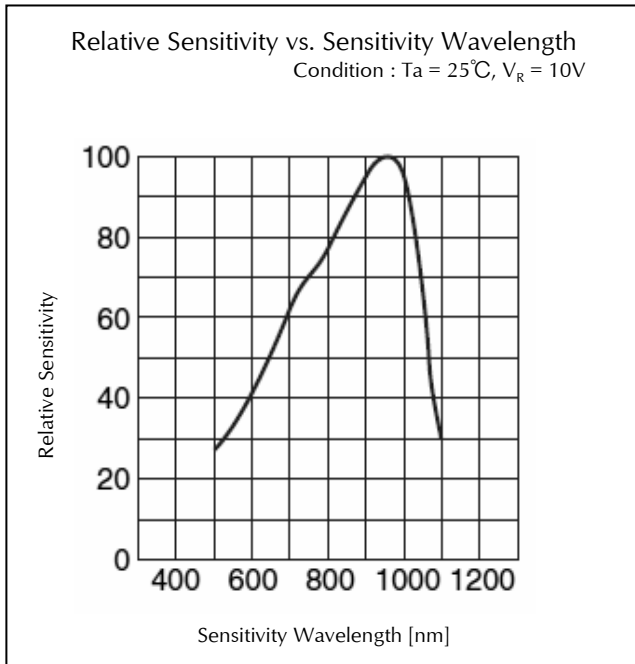
(Ta=25°C)

Item	Conditions	Symbol	Characteristics		Unit
			TYP.		
Photo Current	$V_R=5V$, $E_e=5mW/cm^2$ ※1	I_p	TYP.	4	μA
Response Time	$V_R=10V$, $R_L=1,000\Omega$	tr/ta	TYP.	50	ns
Capacity	$V_R=10V$, $f=1MHz$	C_T	TYP.	3	pF
Dark Current	$V_R=10V$	I_D	Max.	10	nA
Peak Sensitivity Wavelength	$V_R=0V$	λ_p	TYP.	950	nm
Sensitivity	$V_R=5V$, $\lambda=950nm$	S	TYP.	0.64	A/W
Spatial Half Width	$V_R=5V$	$\Delta\theta$	TYP.	140	deg.

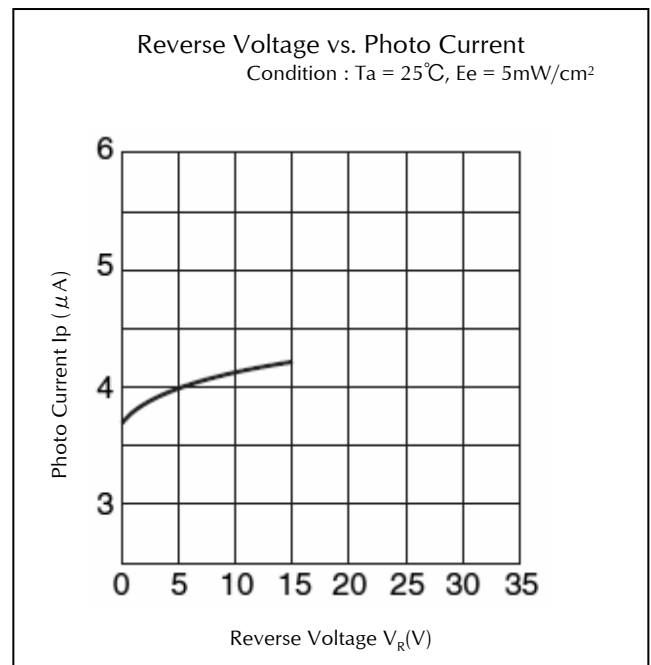
※1 Color temperature is 2,856K. Employs a standard tungsten lamp.



Technical Data



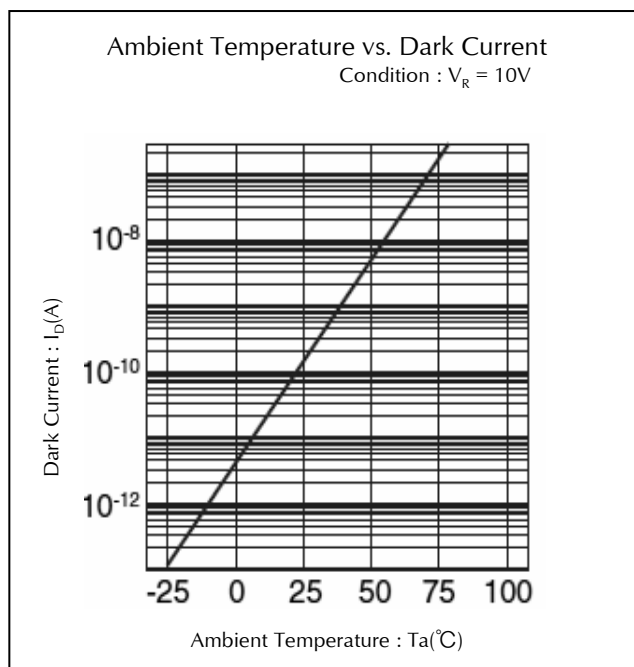
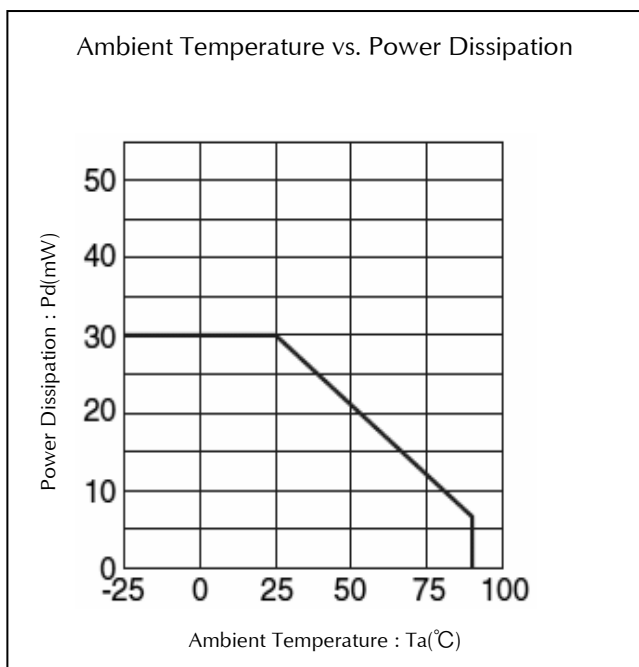
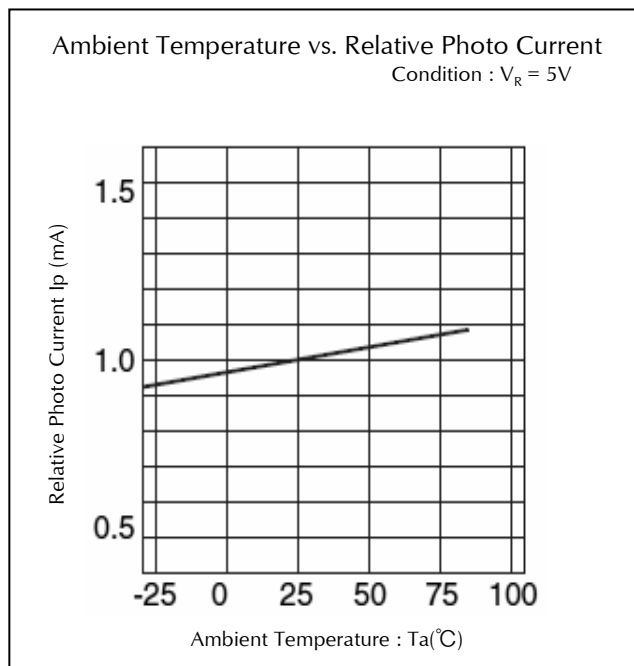
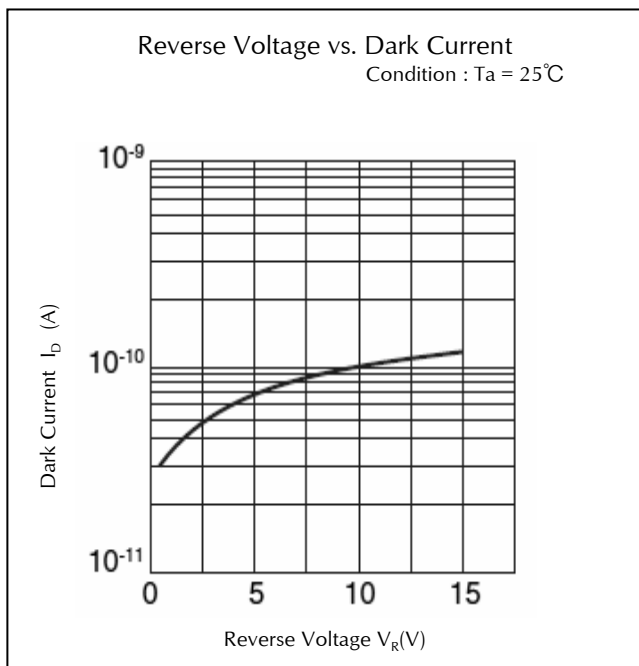
It is based on $E_e=5\text{mW}/\text{cm}^2$.
Employs a standard tungsten lamp of 2,856K.



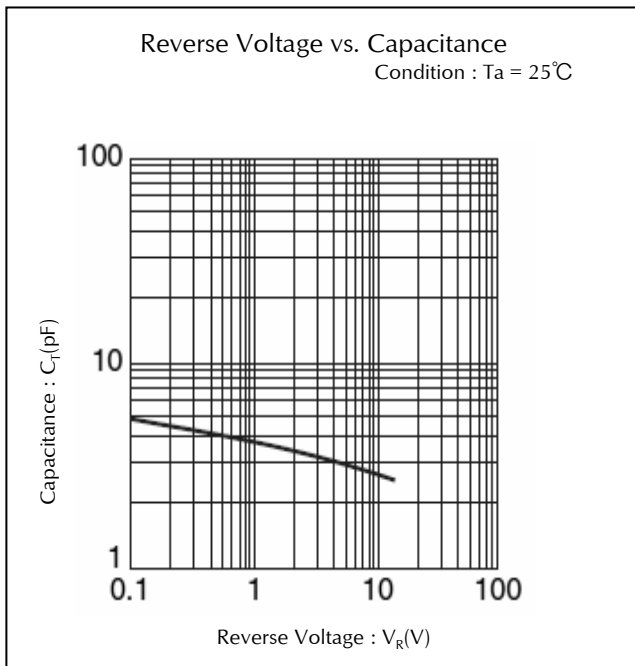
Employs a standard tungsten lamp of 2,856K.



Technical Data



Technical Data

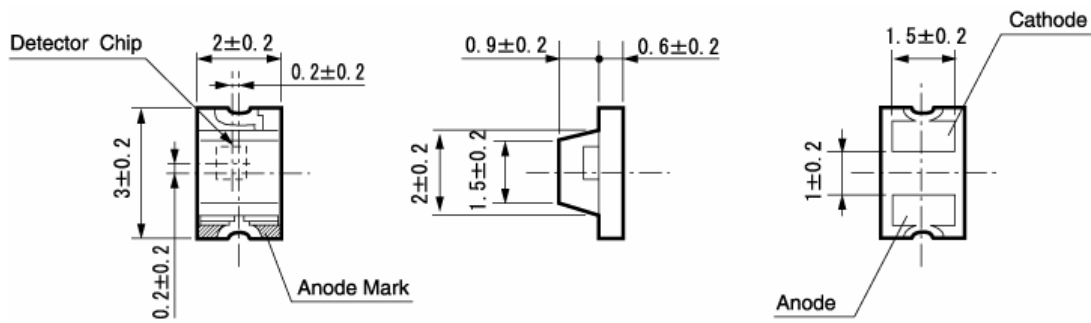




Package Dimensions

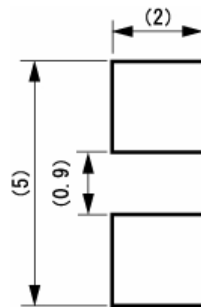
(Unit: mm)

Weight: (7.80)mg



Recommended Soldering Pattern

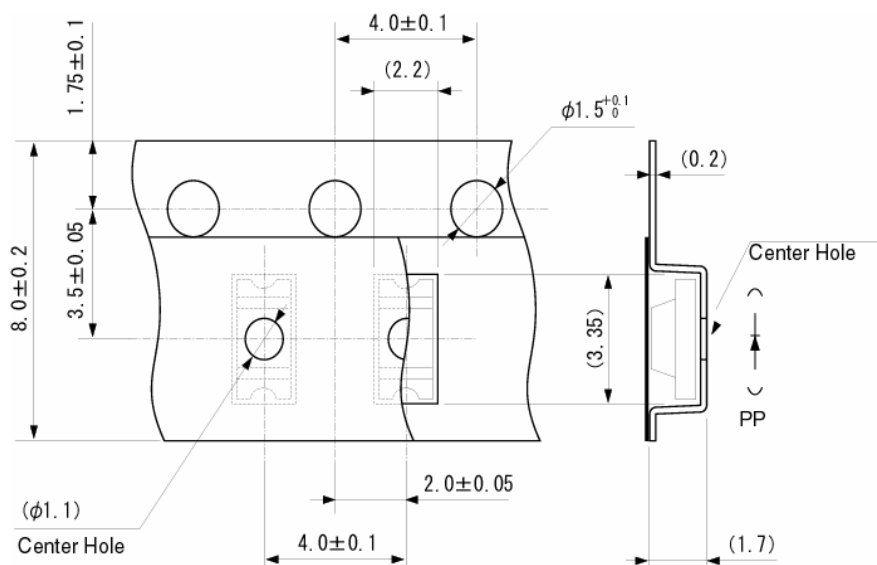
(Unit: mm)



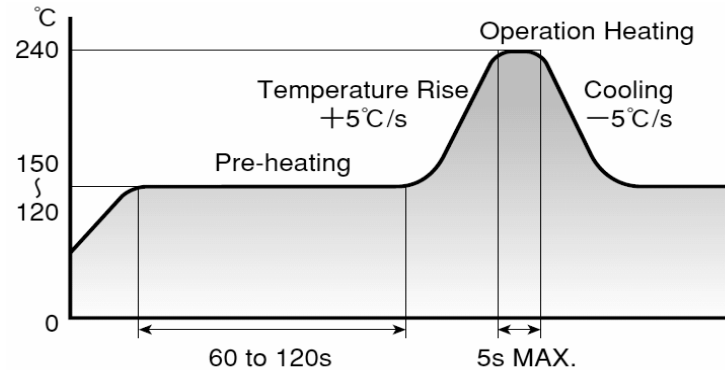
Taping Specification

(Unit: mm)

Quantity: 2,500pcs/ reel (standard)



Reflow Soldering Conditions



- 1) The above profile temperature gives the maximum temperature of the device resin surface. Please set the temperature so as to avoid exceeding this range.
- 2) Total times of reflow soldering process shall be no more than 2 times. When the second reflow soldering process is performed, intervals between the first and second reflow should be short as possible (while allowing some time for the component to return to normal temperature after the first reflow) in order to prevent the device from absorbing moisture.
- 3) Temperature fluctuation to the device during the pre-heating process shall be minimized.

Manual Soldering Conditions

Iron tip temp.	280 °C	(MAX.) (30 W Max.)
Soldering time and frequency	3 s	(MAX.)
	1 time	(MAX.)

Baking Conditions

Please eliminate moisture when the following occurs:

- (a) The indicator of dry tablet in the aluminum dry bag did not indicate blue.
- (b) It took 24 hours after opening the aluminum dry bag.

Recommended baking condition: $60 \pm 5^\circ\text{C}$, 12~24h



Reliability Testing Result

Reliability Testing Result	Applicable Standard	Testing Conditions	Duration	Failure
Room Temp. Operating Life	EIAJ ED-4701/100(101)	Ta = 25°C, Pd = Maximum Rated Power Dissipation	1,000 h	0/16
Resistance to Soldering Heat	EIAJ ED-4701/300(302)	260±5°C, 3mm from package base	5sec	0/16
		265±5°C, 3mm from package base	5sec	0/16
Temperature Cycling	EIAJ ED-4701/100(105)	Minimum Rated Storage Temperature(30min) ~Normal Temperature(15min) ~Maximum Rated Storage Temperature(30min) ~Normal Temperature(15min)	5 cycles	0/16
Wet High Temp. Storage Life	EIAJ ED-4701/100(103)	Ta = 60±2°C, RH = 90±5%	1,000 h	0/16
High Temp. Storage Life	EIAJ ED-4701/200(201)	Ta = Maximum Rated Storage Temperature	1,000 h	0/16
Low Temp. Storage Life	EIAJ ED-4701/200(202)	Ta = Minimum Rated Storage Temperature	1,000 h	0/16
Lead Tension	EIAJ ED-4701/400(401)	10N, 1time (□0.4 and Flat Package : 5N)	10sec	0/16
Vibration, Variable Frequency	EIAJ ED-4701/400(403)	98.1m/s ² (10G), 100 ~ 2KHz sweep for 20min., XYZ each direction	2 h	0/16

Failure Criteria

Items	Symbols	Conditions	Failure criteria
Photo Current	I _P	E _E Value of each product Irradiance of Photo Current V _R Value of each product Reverse Voltage of Photo Current	Testing Max. Value ≥ Initial Value x 1.3 Testing Min. Value ≤ Initial Value x 0.7
Dark Current	I _D	V _R Value of each product Reverse Voltage of Dark Current	Testing Max. Value ≥ Spec. Max. Value x 1.2
Cosmetic Appearance	-	-	No notable, decoloration, deformation and cracking



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