Pb-free HEAT

PP801

Through-hole PIN Photodiode/Wide Distribution Type

Features

Package	Concave Lenz type, Water clear epoxy
Product features	・Photo Current : 190 μ A TYP. (V_R=12V,Ee=5mW/cm^2) ・Wide Distribution ・Lead-free soldering compatible ・RoHS compliant
Peak Sensitivity Wavelength	950nm
Half Intensity Angle	156 deg.
Die materials	Si
Soldering methods	TTW (Through The Wave) soldering and manual soldering ※Please refer to Soldering Conditions about soldering.
ESD	2kV (HBM)

Recommended Applications

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

Absolute Maximum Ratings

(Ta=25℃)

Item	Symbol	Absolute Maximum Ratings	Unit
Power Dissipation	P_d	300	mW
Reverse Voltage	V_R	12	V
Operating Temperature	T_{opr}	-20~+70	℃
Storage Temperature	T_{stg}	-20~+70	℃

Electro-Optical Characteristics

(Ta=25℃)

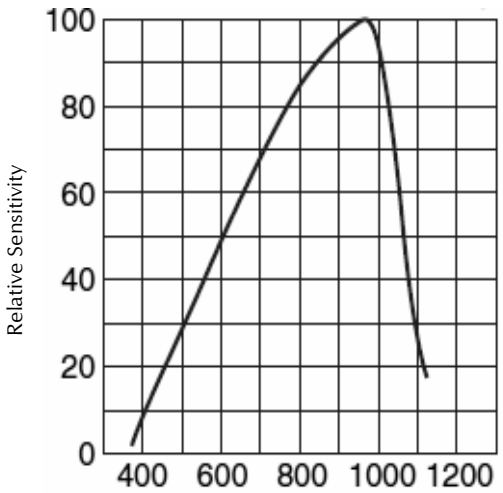
Item	Conditions	Symbol	Characteristics		Unit
Photo Current	V_R=12V, Ee=5mW/cm^2 ※1	Ip	TYP.	190	μA
Response Time	V_R=12V, R_L=1,000Ω	tr/tf	TYP.	150	ns
Capacity	V_R=12V, f=1MHz	C_T	TYP.	35	pF
Dark Current	V_R=12V	I_D	Max.	20	nA
Peak Sensitivity Wavelength	V_R=0V	λp	TYP.	950	nm
Sensitivity	V_R=5V, λ=950nm	S	TYP.	0.64	A/W
Spatial Half Width	V_R=12V	Δθ	TYP.	156	deg.

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

Technical Data

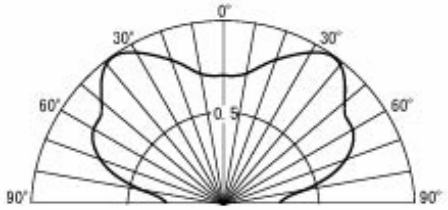
Relative Sensitivity vs. Sensitivity Wavelength

Condition : Ta = 25℃, V_R = 12V



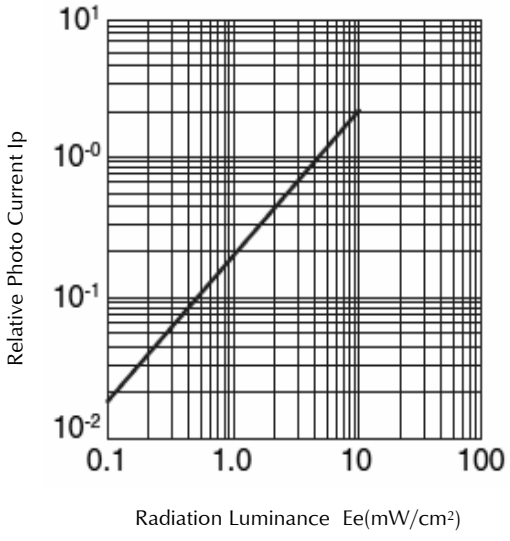
Spatial Distribution Example

Condition : Ta = 25℃



Radiation Luminance vs. Relative Photo Current

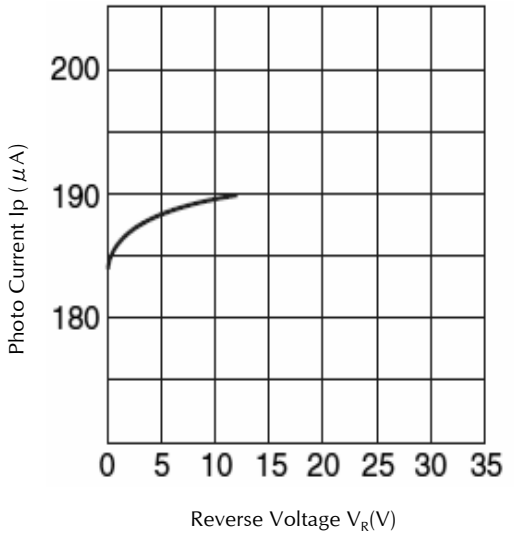
Condition : Ta = 25℃, V_R = 12V



It is based on Ee=5mW/cm².
Employs a standard tungsten lamp of 2,856K.

Reverse Voltage vs. Photo Current

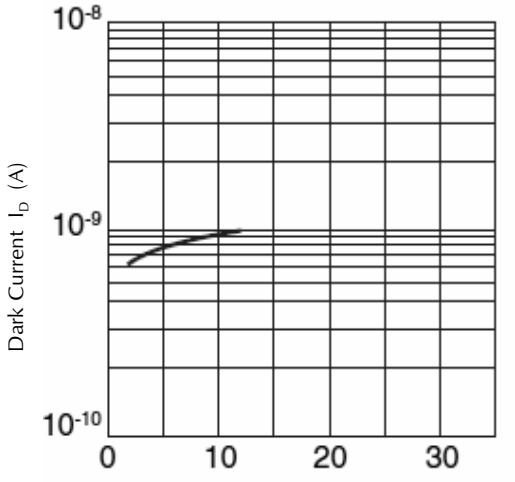
Condition : Ta = 25℃, Ee = 5mW/cm²



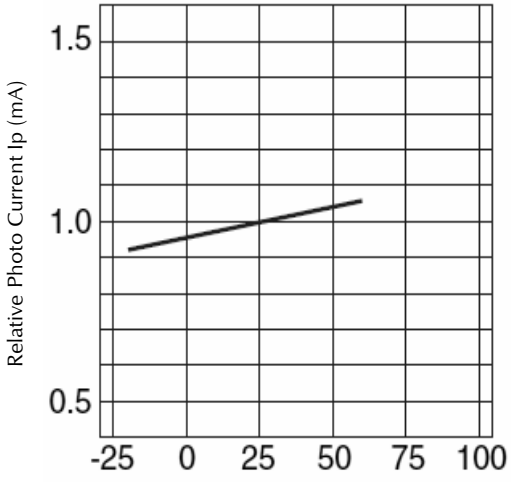
Employs a standard tungsten lamp of 2,856K.

Technical Data

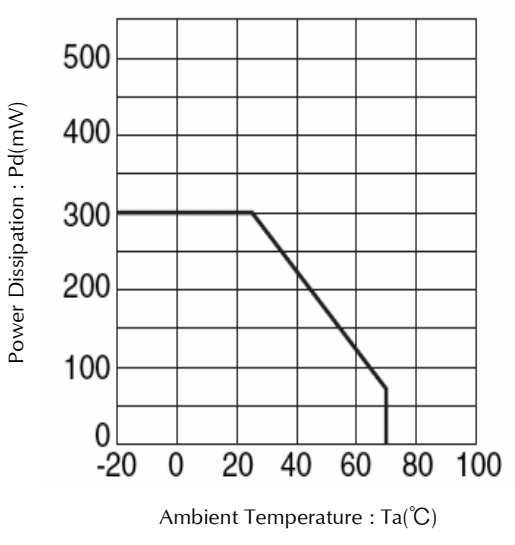
Reverse Voltage vs. Dark Current
Condition : Ta = 25℃



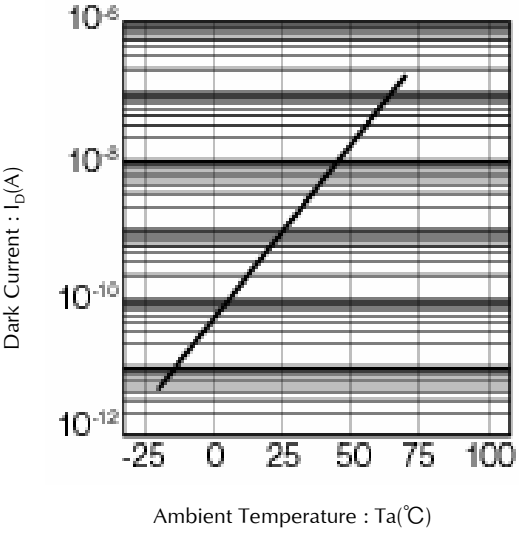
Ambient Temperature vs. Relative Photo Current
Condition : V_R = 12V



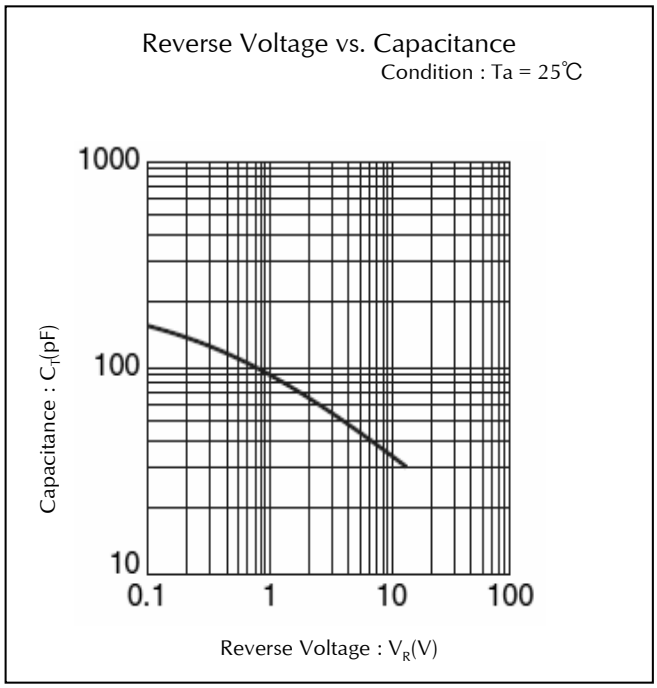
Ambient Temperature vs. Power Dissipation



Ambient Temperature vs. Dark Current
Condition : V_R = 12V

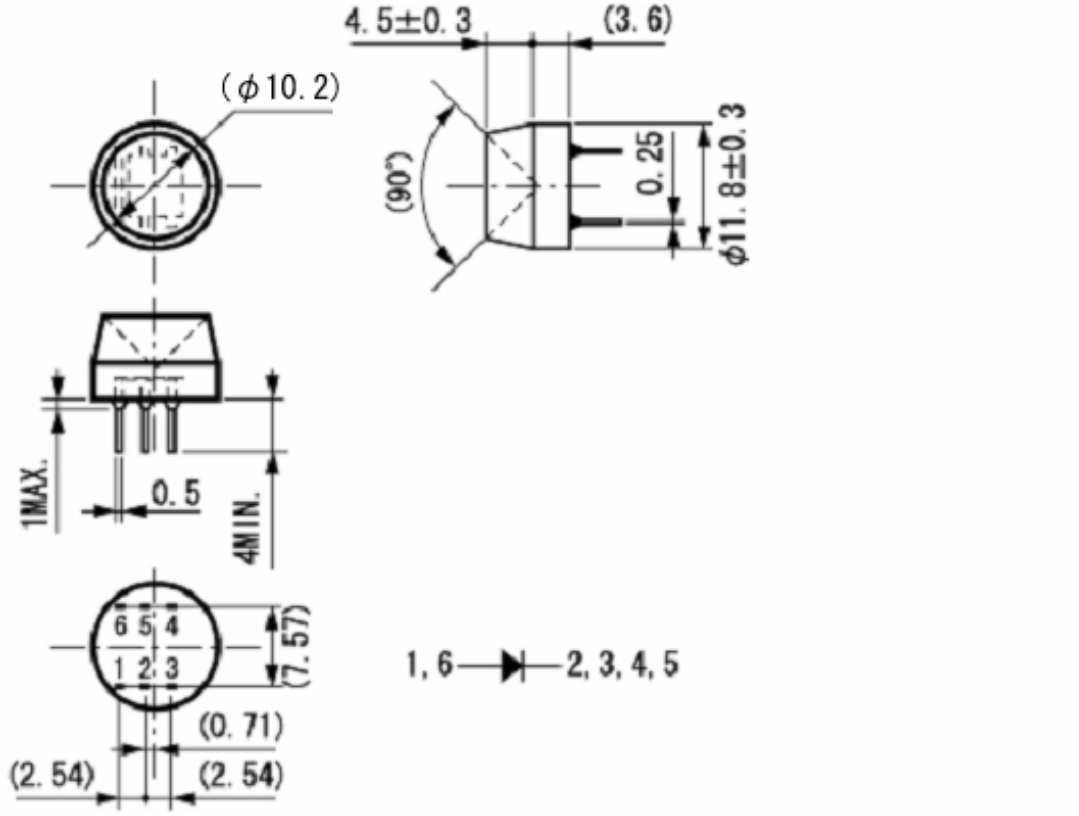


Technical Data



Package Dimensions

(Unit: mm)



TTW (Through The Wave) soldering Conditions

Pre-heating	100 ℃	(MAX.) Resin surface temperature
Solder Bath Temp.	265 ℃	(MAX.)
Dipping Time	5 s	(MAX.)
Position	At least 3.0 mm away from the root of lead	

1) The dip soldering process shall be twice maximum.
2) The product shall be cooled to normal temperature before the second dipping process.

※The detail is described to LED and Photodetector handling precautions of home page:
"Mounting through-hole Type Devices" and "Soldering", and use it after the confirmation, please.

Manual Soldering Conditions

Iron tip temp.	400 ℃	(MAX.) (30 W Max.)
Soldering time and frequency	3 s 1 time	(MAX.) (MAX.)
Position	At least 3.0 mm away from the root of lead	

※The detail is described to LED and Photodetector handling precautions of home page:
"Mounting through-hole Type Devices" and "Soldering", and use it after the confirmation, please.

Reliability Testing Result

Reliability Testing Result	Applicable Standard	Testing Conditions	Duration	Failure
Room Temp. Operating Life	EIAJ ED-4701/100(101)	Ta = 25℃, Pd = Maxium Rated Power Dissipation	1,000 h	0/16
Resistance to Soldering Heat	EIAJ ED-4701/300(302)	265±5℃, 3mm from package base	5s	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℃, 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)	5N,1time	10s	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

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