

Harvatek 5mm Round Type Photo diode
HV-1205A83B

Official Product	HV-1205A83B	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-010-699
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1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified
RoHS Compliant



Orderable Information

H V - 12 0 5A8 3 B



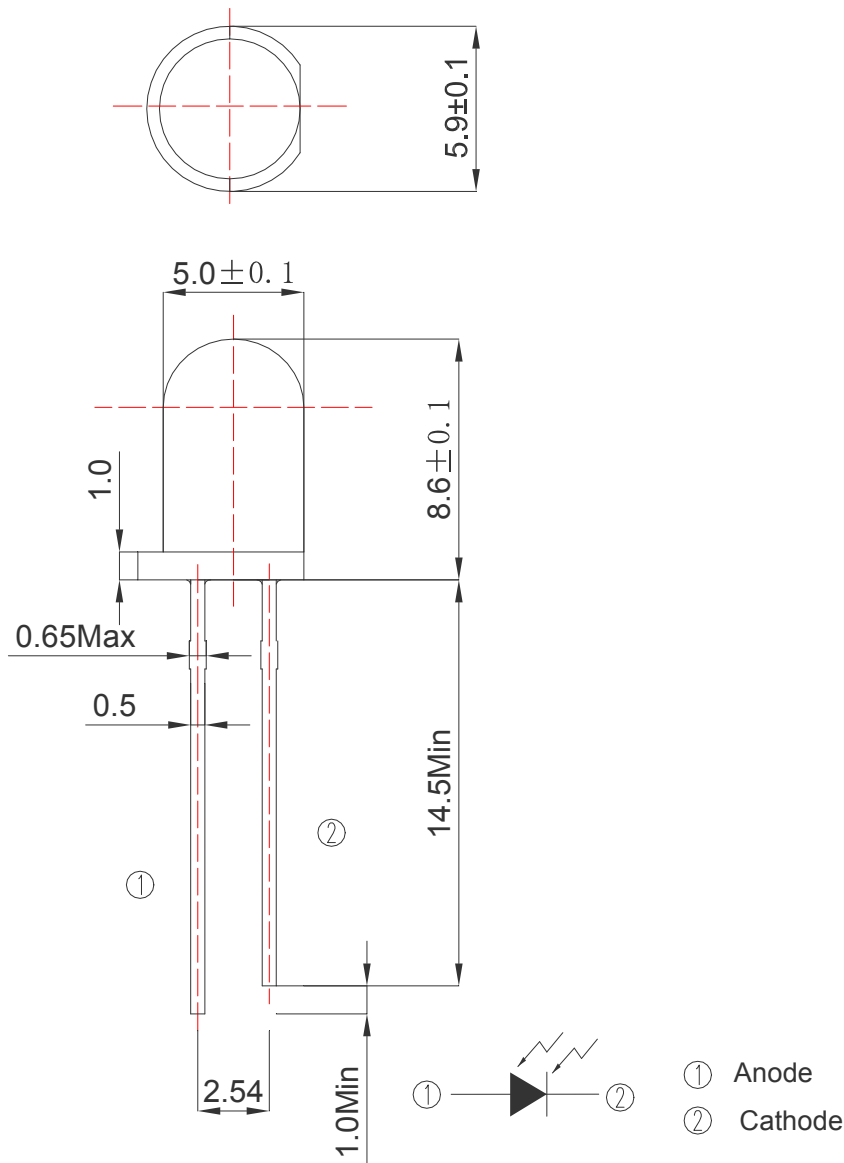
Series Name	Color Code	Remark
HV : HARVATEK	120: 940nm PD Chip. 5A83: 5.0mm Round Lamp, 8.6mm Lens B : Black Transparent.	

Features:

- Stable Color
- Popular 5.0mm Round Type Photo diode, 8.6mm lens height
- Black Transparent Lens.

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Package Dimensions:



Notes:

- 1.All dimensions are millimeters.
- 2.Tolerance is +/-0.25mm unless otherwise noted.
- 3.Specifications are subject to change without notice.

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Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	32	V
Operating Temperature	T_{opr}	-25to+85	°C
Storage Temperature	T_{stg}	-25to+85	°C
Soldering Temperature*1	T_{sol}	260	°C
Power Dissipation	P_d	150	mW

*1: Soldering time \cong 5 seconds.

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Electrical and Optical Characteristic

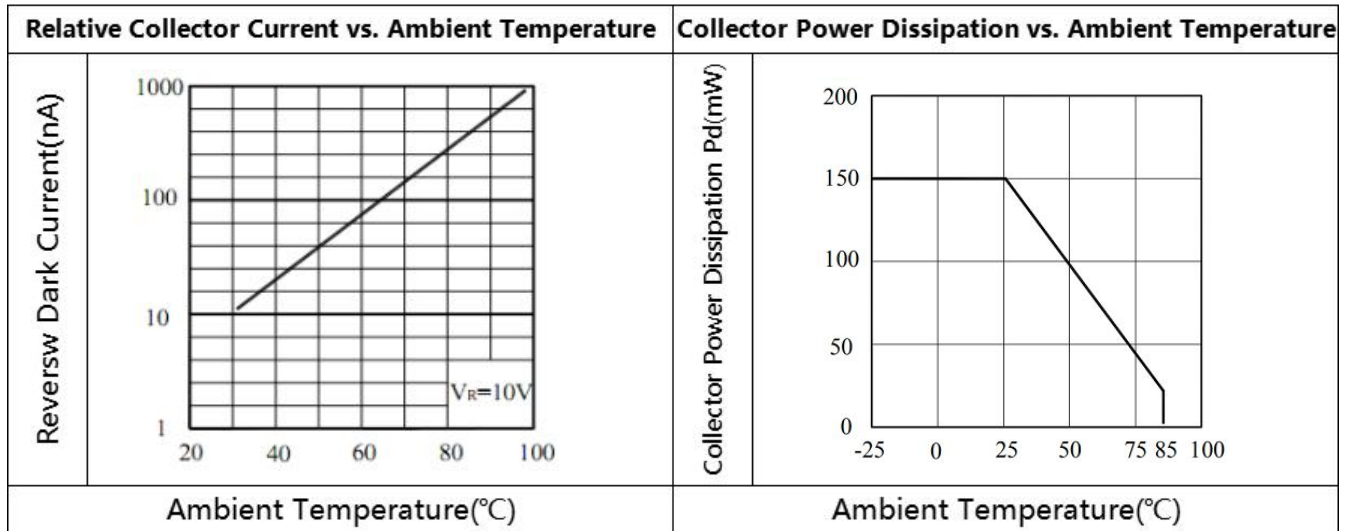
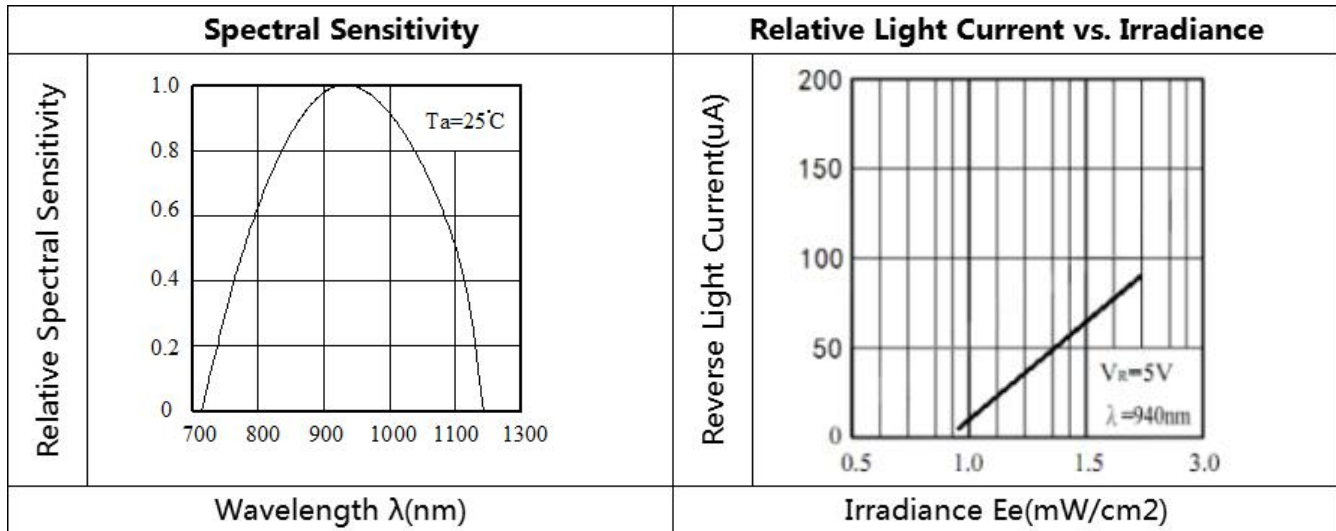
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	BV_R	$E_e=0, I_R=100\mu A$	32	/	/	V
Open Circuit Voltage	V_{oc}	$E_e=5\text{mw}/\text{cm}^2$ $\lambda_p=940\text{nm}$	/	0.39	/	V
Dark Current	I_d	$E_e=0, V_R=10V$	/	/	100	nA
Reverse Light Current	I_L	$E_e=1\text{mw}/\text{cm}^2$ $\lambda_p=940\text{nm } V_R=5V$	/	5	/	μA
Total Capacitance	C_t	$E_e=0$ $V_R=5V \quad f=1\text{mHz}$	/	18	/	pF
Peak Wavelength	λ_p	$I_F=20 \text{ mA}$	/	940	/	nm
Rang of Spectral Bandwidth	$\lambda_{0.5}$	$I_F=20 \text{ mA}$	760	/	1100	nm
Rise Time	t_r	$V_{CE}=5V$ $R_L=100\Omega$	/	45	/	nS
Fall Time	t_f		/	45	/	nS

Specifications for Bin Grading:

$I_L (\mu A)$		
Grade	Min.	Max.
L	3.36	7.8
M	5.2	10.8
N	7.2	13.8

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Typical Electro-Optical Characteristics Curves



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◆ Reliability test items and conditions :

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

Confidence level: 97%

LTPD:3%

No	Item	Test Conditions	Test Hours/Cycle	Sample Size	Failure Judgment Criteria	Ac/Er
1	Solder Heat	TEMP:260°C±5°C	10 SEC	76 PCS	$I_v \leq I_{vt} * 0.5$ or $V_f \geq U$ or $V_f \leq L$	0/1
2	Temperature Cycle	H:+100°C 15min ∫ 5min L:-40°C 15min	300 CYCLES	76 PCS		0/1
3	Thermal Shock	H:+100°C 5min ∫ 10sec L:-10°C 5min	300 CYCLES	76 PCS		0/1
4	High Temperature Storage	TEMP:100°C	1000 HRS	76 PCS		0/1
5	Low Temperature Storage	TEMP:-40°C	1000 HRS	76 PCS		0/1
6	DC Operating Life	TEMP:25°C IF=20mA	1000 HRS	76 PCS		0/1
7	High Temperature / High Humidity	85°C/85%RH	1000 HRS	76 PCS		0/1

Note: I_{vt} : To test I_v value of the chip before the reliability test.

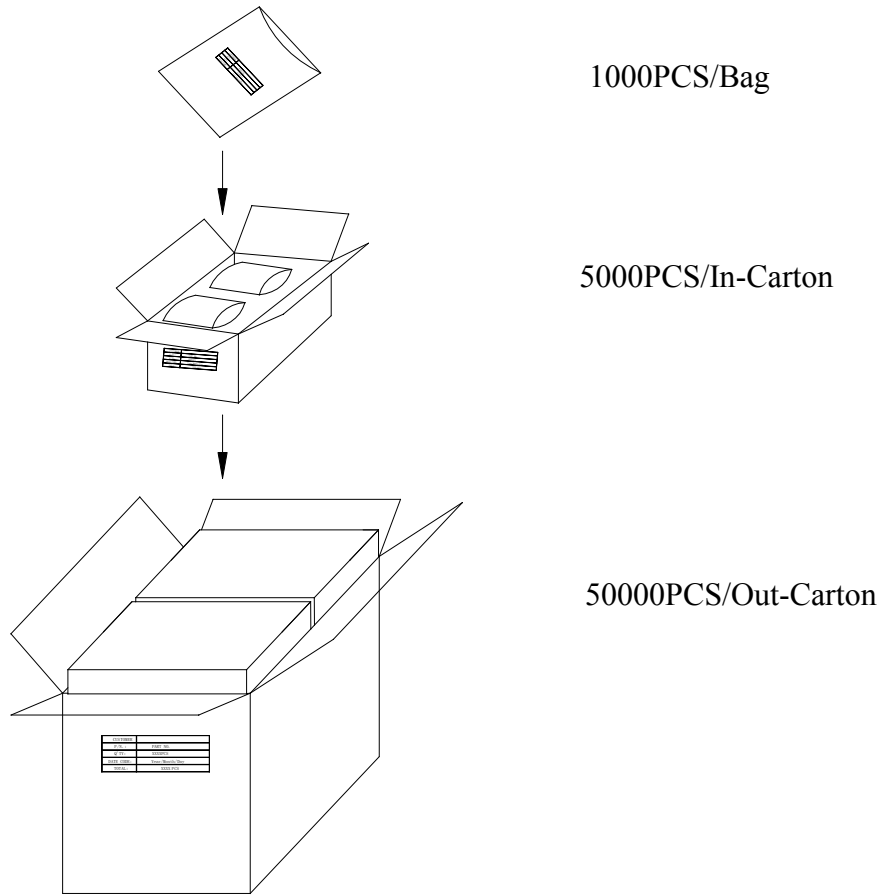
I_v : The test value of the chip that has completed the reliability test

U: Upper Specification Limit

L: Lower Specification Limit

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Packing Specification:



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Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	11-05-2019

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