

Harvatek 5.0mm Round PT LED LAMP**HV-1303303B**

Official Product	HV-1303303B	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-688
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Nov. 05 2019	Version of 1.0	Page 1/11

DISCLAIMER

HARVATEK reserves the right to make changes without further notice to any products herein to improve reliability, function or design. HARVATEK does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights, nor the rights of others.

LIFE SUPPORT POLICY

HARVATEK's products are not authorized for use as critical components in life support devices or systems without the express written approval of the President of HARVATEK or HARVATEK INTERNATIONAL. As used herein:

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.

Official Product	HV-1303303B	Customer Part No.		Data Sheet No.
	*****	*****		CDAE-010-688
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov. 05 2019	Version of 1.0	Page 2/11

Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified
RoHS Compliant



Orderable Information

HV - 130 3303 B



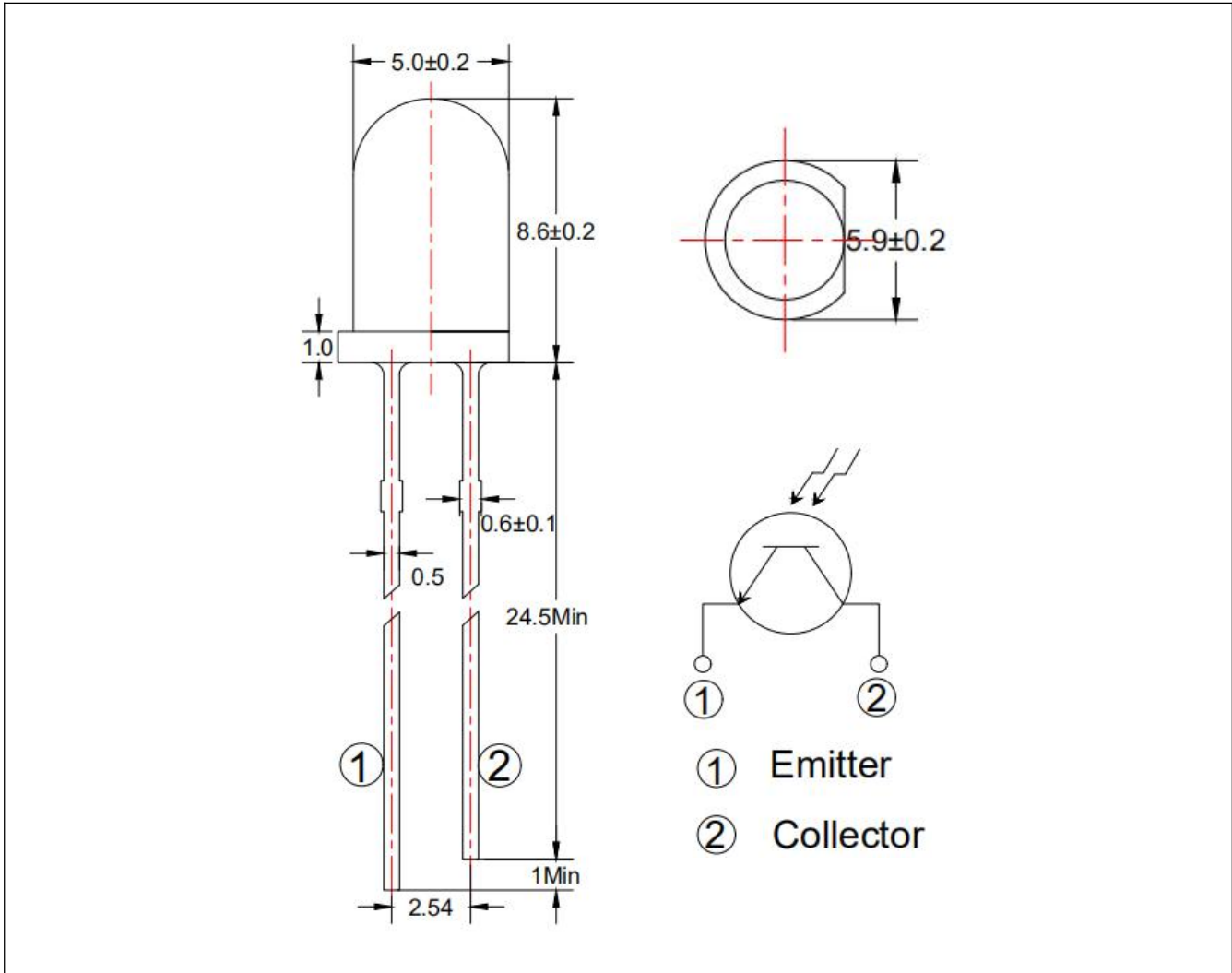
Series Name	Color Code	Remark
HV : HARVATEK	130: 840-1100nm Silicon PT Chip. 3303: 5.0mm Round Lamp, 8.6mm Lens B : Black.	

Features:

- Stable Color
- Popular 5.0mm through hole package, 8.6mm lens height.
- Black lens.

Official Product	HV-1303303B	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-688
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov. 05 2019	Version of 1.0
			Page 3/11

Package Dimensions:



Notes:

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

Official Product	HV-1303303B	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-688
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Nov. 05 2019	Version of 1.0	Page 4/11

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Collector Current	I _c	20	mA
Operating Temperature	T _{opr}	-40to+85	°C
Storage Temperature	T _{stg}	-40to+100	°C
Soldering Temperature*1	T _{sol}	260±5	°C
Power Dissipation	P _d	75	mW
Collector-Emitter Voltage	V _{ceo}	30	V
Emitter-Collector Voltage	V _{ceo}	5	V

*1:Soldering time ≦ 5 seconds.

Official Product	HV-1303303B	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-688
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov. 05 2019	Version of 1.0
			Page 5/11

Electrical and Optical Characteristic

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
On State Collector Current	$I_{C(on)}$	$V_{ce}=5V$ $E_e=0.555mW/cm^2$	0.70	3.0	/	μA
Collector Dark Current	I_d	$V_{ce}=20V$	/	/	100	nA
Collector – Emitter Breakdown Voltage	BV_{ceo}	$I_c=100\mu A$	30	/	/	V
Emitter-Collector Breakdown Voltage	$B V_{eco}$	$I_e=100\mu A$	5	/	/	V
Collector-Emitter Saturation Voltage	$V_{ce(sat)}$	$I_c=0.5mA$ $I_F=20 mA$	/	/	0.4	V
Peak Wavelength	λ_p	/	/	940	/	nm
Rang of Spectral Bandwidth	$\lambda_{0.5}$	/	840	/	1100	nm
Rise Time	t_r	$V_{CE}=5V$ $I_C=1mA$ $R_L=1000\Omega$	/	15	/	μS
Fall Time	t_f		/	15	/	μS

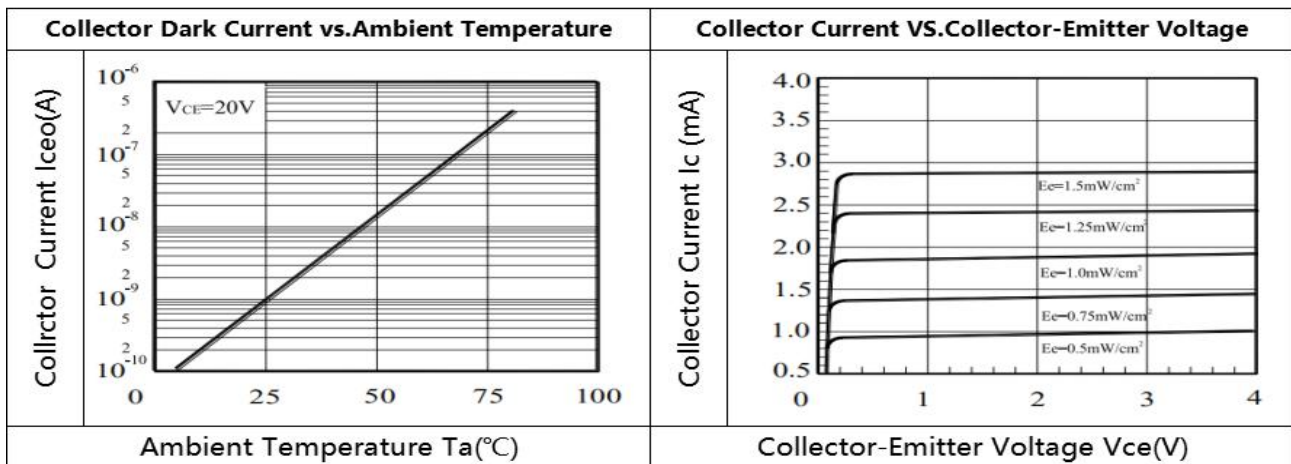
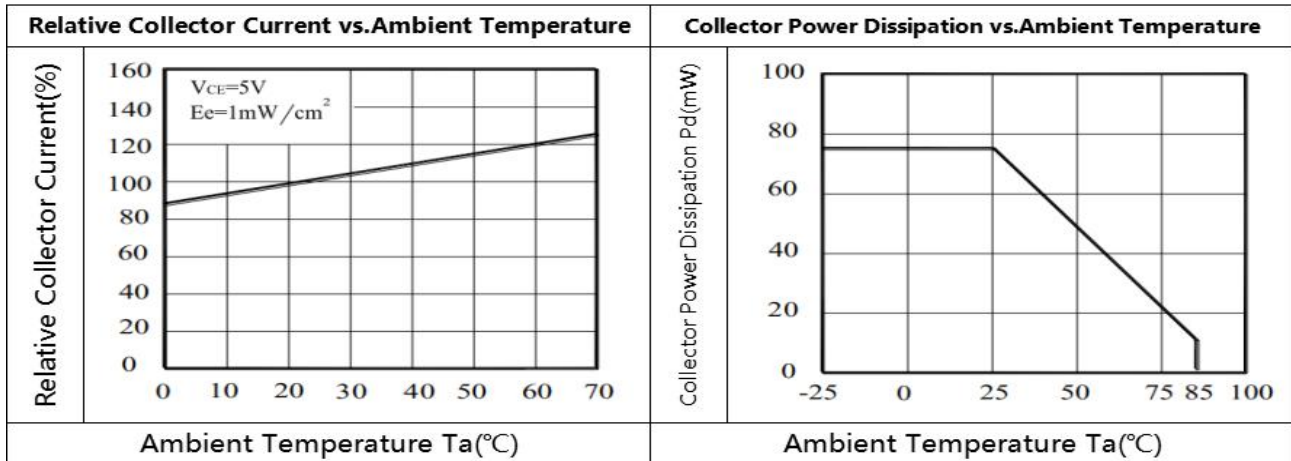
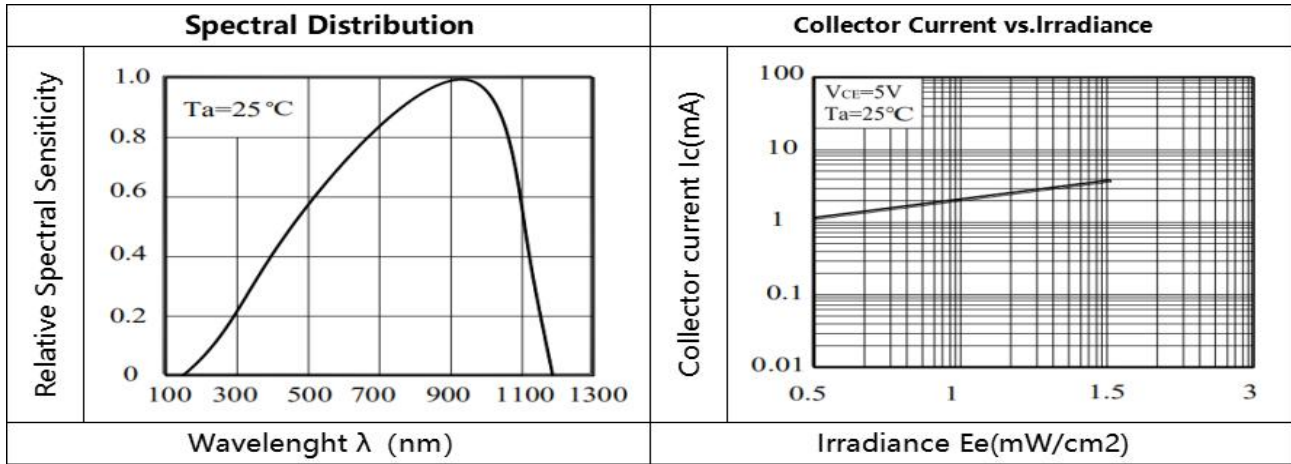
Official Product	HV-1303303B	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-688
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov. 05 2019	Version of 1.0
			Page 6/11

Specifications for Bin Grading:

Ic(uA)		
Grade	Min.	Max.
G	0.7	1.9
H	1.14	2.6
J	1.77	3.61
K	2.67	5.07
L	4.18	7.07
M	5.68	8.48
N	7.18	9.98
P	8.68	11.5

Official Product	HV-1303303B	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-688
Specifications are subject to change without notice. Data and drawings herein are copyrighted.	Nov. 05 2019	Version of 1.0	Page 7/11

Typical Electro-Optical Characteristics Curve



Official Product	HV-1303303B	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-688
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov. 05 2019	Version of 1.0
			Page 8/11

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	$I_v \cong I_{vt} * 0.5$ or $V_f \cong U$ or $V_f \cong L$	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.

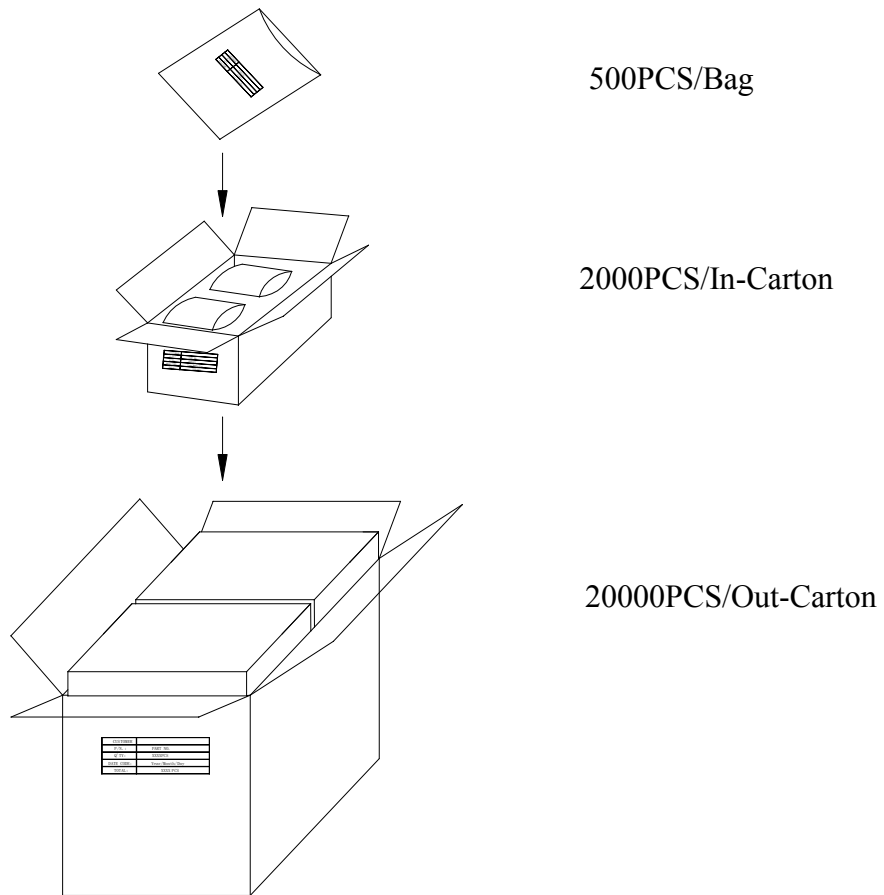
I_v : The test value of the chip that has completed the reliability test

U: Upper Specification Limit

L: Lower Specification Limit

Official Product	HV-1303303B	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-688
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov. 05 2019	Version of 1.0
			Page 9/11

Packing Specification:



Official Product	HV-1303303B	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-688
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov. 05 2019	Version of 1.0
			Page 10/11

Revision History

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

Official Product	HV-1303303B	Customer Part No.	Data Sheet No.
	*****	*****	CDAE-010-688
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Nov. 05 2019	Version of 1.0
			Page 11/11