

Harvatek 5.0mm Round LED LAMP**HV-YG23304C-L51-C0028**

Official Product	HV-YG23304C-L51-C0028	Customer Part No.		Data Sheet No.
	*****	*****		HV-YG23304C-L51-C0028
Specifications are subject to change without notice. Data and drawings herein are copyrighted.		Mar.14 2023	Version of 1.1	Page 1/14

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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 - YG 23304 C - L51 - C0028

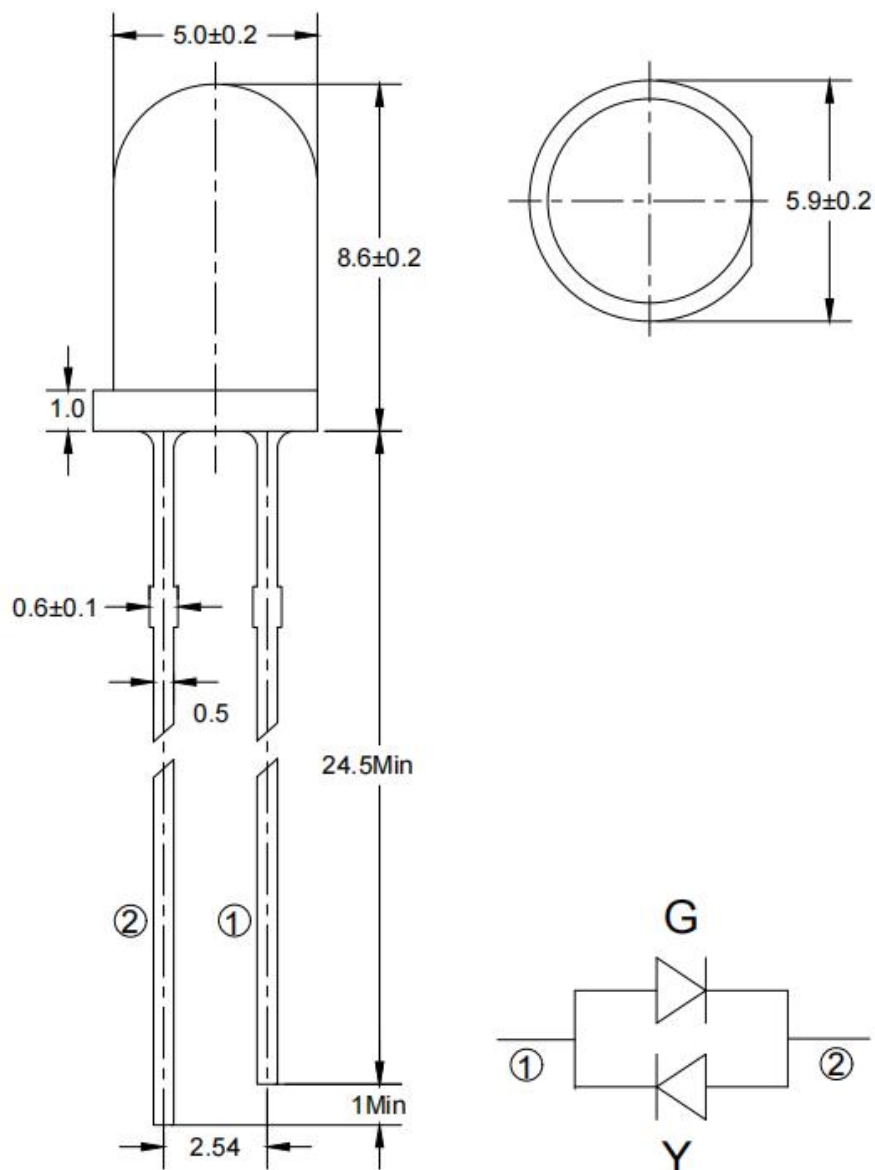
Series Name	Color Code	Remark
HV : HARVATEK	YG23304: 5.0mm Round LED LAMP,8.6mm Lens. AlGaInP 590nm Yellow chip. AlGaInP 570nm Green chip. C: Water clear. L51: HARVATEK Part No.	C0028: Customer Product Code

Features:

- Stable Color.
- Popular 5.0mm through hole package, 8.6mm lens height.
- Water clear 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
Forward Current	I _F	Y/G	30	mA
Operating Temperature	T _{opr}	Y/G	-40to+85	°C
Storage Temperature	T _{stg}	Y/G	-40to+85	°C
Soldering Temperature*1	T _{sol}	Y/G	260±5	°C
Reverse Voltage	V _R	Y/G	1.1	V
Power Dissipation	P _d	Y/G	75	mW
Peak Forward Current*2	I _{FP}	Y/G	75	mA

*1:Soldering time ≒ 5 seconds. *2:Pulse Width ≒ 100μs and Duty ≒ 1%.

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Electrical and Optical Characteristic

Parameter	Symbol		Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I_v	Y	$I_F=20\text{mA}$	200	500	/	mcd
		G		60	150	/	
Viewing Angle	$2\theta_{1/2}$	Y/G	$I_F=20\text{mA}$	/	20	/	Deg
Forward Voltage	V_F	Y/G	$I_F=20\text{mA}$	/	2.0	2.4	V
Peak Emission Wavelength	λ_P	Y	$I_F=20\text{mA}$	/	595	/	nm
		G		/	575	/	
Dominant Wavelength	λ_d	Y	$I_F=20\text{mA}$	/	590	/	nm
		G		/	570	/	
Spectral Line Half-Width	$\Delta\lambda$	Y	$I_F=20\text{mA}$	/	25	/	nm
		G		/	20	/	
Reverse Current	I_R	Y/G	$V_R=1.1\text{ V}$	/	/	10	μA

Notes:

$\theta_{1/2}$ is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

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Specifications for Bin Grading:(Y)

Iv (mcd)		
Grade	Min.	Max.
T	200	500
U	400	800
V	630	1250

λd (nm)		
Grade	Min.	Max.
3	585	588
4	587	590
5	589	592
6	591	594
7	593	595

Notes:

- 1.Luminous intensity: +/-15%.
- 2.Wavelength: +/-1nm.

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Specifications for Bin Grading:(G)

Iv (mcd)		
Grade	Min.	Max.
Q	60	125
R	100	200
S	160	320

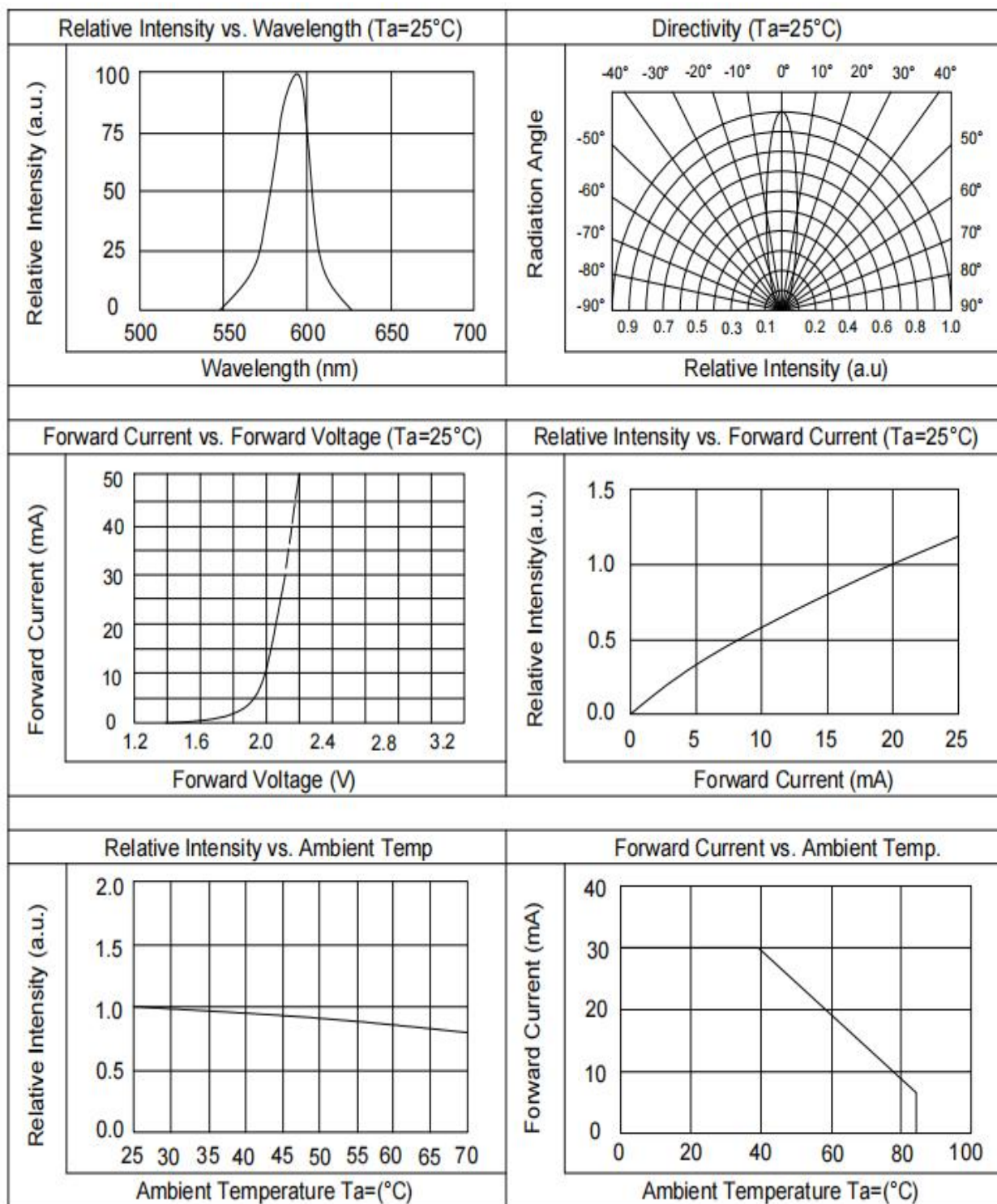
λd (nm)		
Grade	Min.	Max.
5	566	569
6	568	571
7	570	573
8	572	575
9	574	577

Notes:

- 1.Luminous intensity: +/-15%.
- 2.Wavelength: +/-1nm.

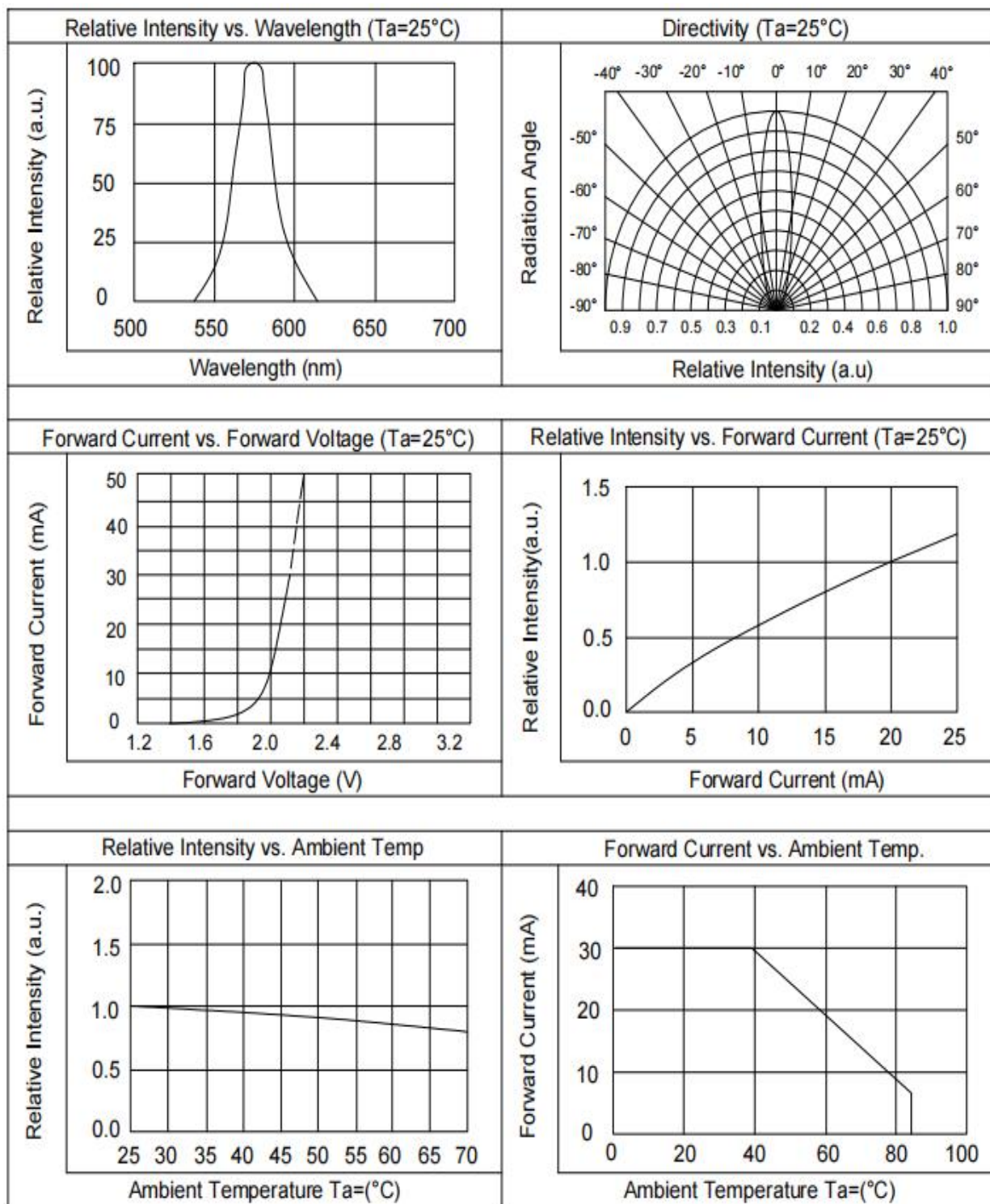
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Typical Electro-Optical Characteristics Curves(Y)



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Typical Electro-Optical Characteristics Curves(G)



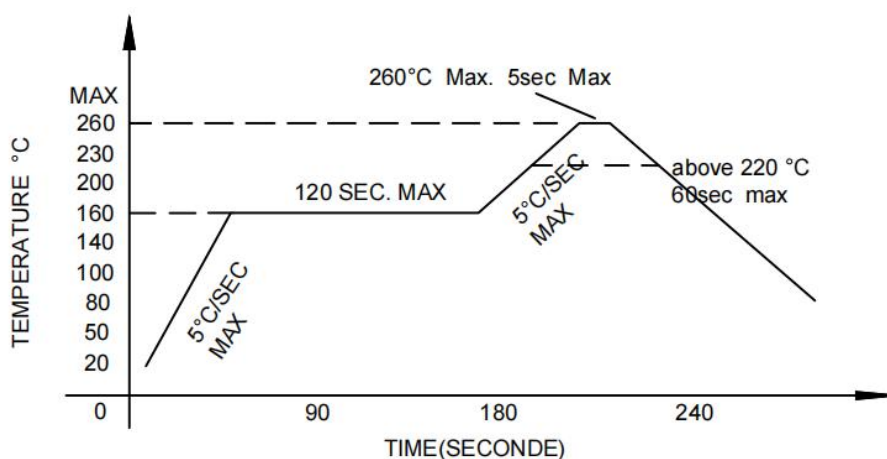
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Soldering condition

- Careful attention should be paid during soldering. When soldering, leave more than 2mm from solder joint to Led, and soldering beyond the base of the tie bar is recommended.
- Avoiding applying any stress to the lead frame while the LED are at high temperature particularly when soldering.
- Dip and hand soldering should not be done more than one time.
- After soldering the LED, the epoxy bulb should be protected from mechanical shock or vibration until the LED return to room temperature.
- A rapid-rate process is not recommended for cooling the LED down from the peak temperature.
- Although the recommended soldering conditions are specified in the above table, dip or hand soldering at the lowest possible temperature is desirable for the LED.
- Wave soldering parameter must be set and maintain according to recommended temperature and dwell time in the solder wave.

Recommended soldering conditions

Hand Soldering		Wave Soldering	
Temp. at tip of iron	300°C Max. (30W Max.)	Preheat temp.	160°C Max. (120 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260°C Max., 5 sec Max
Distance	2mm Min.(From solder joint to Led)	Distance	2mm Min. (From solder joint to Led)



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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.

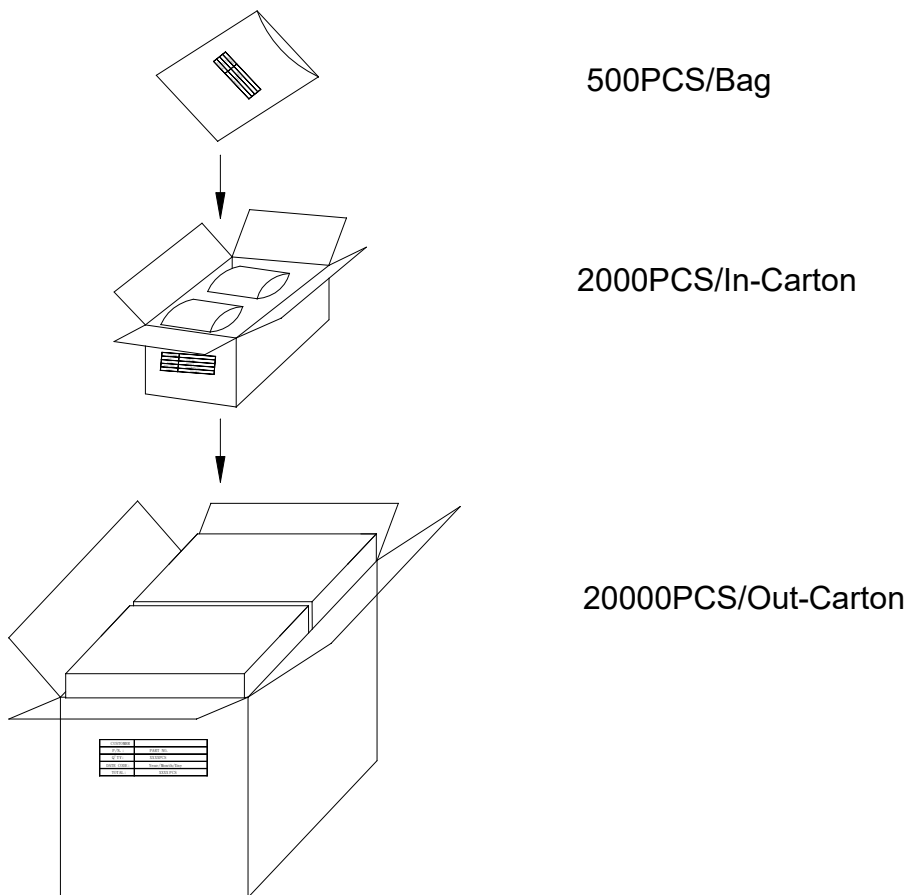
I_v : The test value of the chip that has completed the reliability test.






U: Upper Specification Limit.

L: Lower Specification Limit.

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Packing Specification:



	HARVATEK	
CPN:		RoHs
P/N:		
		
HV-YG23304C-L51-C0028		
QTY:		CAT:
		HUE:
LOT NO:		REF:
		

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Revision History

Revision	Page	Version No.	Revision Date
Initial Release		1.0	02-09-2023
Modify the graphic	4	1.1	03-14-2023

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