

**Harvatek 8.7*4.5*5.9mm Reflective Type Sensor
HV-22S087059/829B-R-F28**

Official Product	HV-22S087059/829B-R-F28	Customer Part No.	Data Sheet No.
*	*****	*****	HV-22S087059/829B-R-F28
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LIFE SUPPORT POLICY

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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 - 22S 087 059 / 829 B- R - F28

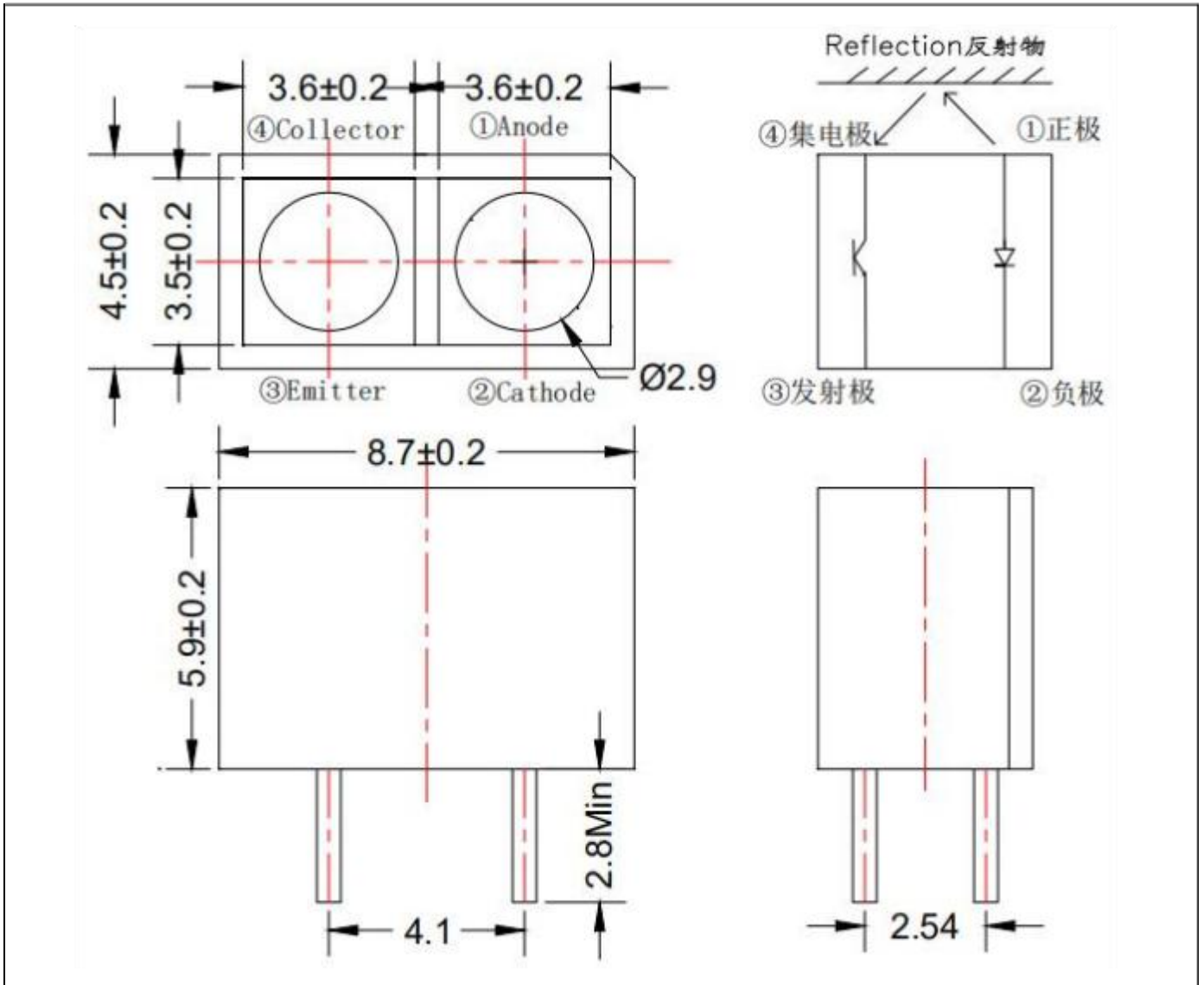
Series Name	Color Code
HV : HARVATEK	22S087059 : 8.7*4.5*5.9mm Reflective Type Sensor. With AlGaAs Infrared emitter & Silicon Photo transistor. 829 : HARVATEK Part No. B : PT Lens Color is Black. R-F28:HARVATEK Part No.

Features:

- . Low power consumption.
- . High analytic.
- . Fast response.
- . Good lock and easy to assembly.

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Package Dimensions:



Notes:

1. All dimensions are millimeters.
2. Tolerance is +/-0.25mm unless otherwise noted.
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Absolute Maximum Ratings at Ta=25°C

Parameter		Symbol	Rating	Unit
Emitter	Forward Current	I _F	50	mA
	Power Dissipation	P _d	75	mW
	Reverse Voltage	V _R	5	V
	Peak Forward Current * 1	I _{FP}	1	A
Receiver	Collector Current	I _c	20	mA
	Power Dissipation	P _d	75	mW
	Collector-Emitter Voltage	V _{ceo}	30	V
	Emitter-Collector Voltage	V _{eco}	5	V
Operating Temperature		T _{opr}	-40to+85	°C
Storage Temperature		T _{stg}	-40to+100	°C
Soldering Temperature *2		T _{sol}	260±5	°C

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

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Electrical and Optical Characteristic

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Emitter	Forward Voltage	V_F	$I_F=20\text{ mA}$	/	1.2	1.5	V
	Reverse Current	I_R	$V_R= 5\text{ V}$	/	/	10	μA
	Peak Wavelength	λ_p	$I_F=20\text{ mA}$	930	940	/	nm
Receiver	Dark Current	I_d	$V_{CE}=20\text{V}$	/	/	100	nA
	C-E Saturation	$V_{ce(sat)}$	$I_C=0.5\text{mA}$ $I_F=20\text{ mA}$	/	/	0.4	V
Transfer Characteristics	Collect Current	$I_{C(ON)}$	$V_{CE}=5\text{V}$ $I_F=20\text{ mA}$	0.2	/	/	mA
	Rise time	T_r	$V_{CE}=5\text{V}$ $I_C= 1\text{mA}$	/	15	/	$\mu\text{ sec}$
	Fall time	T_f	$R_L=1\text{K } \Omega$	/	15	/	$\mu\text{ sec}$

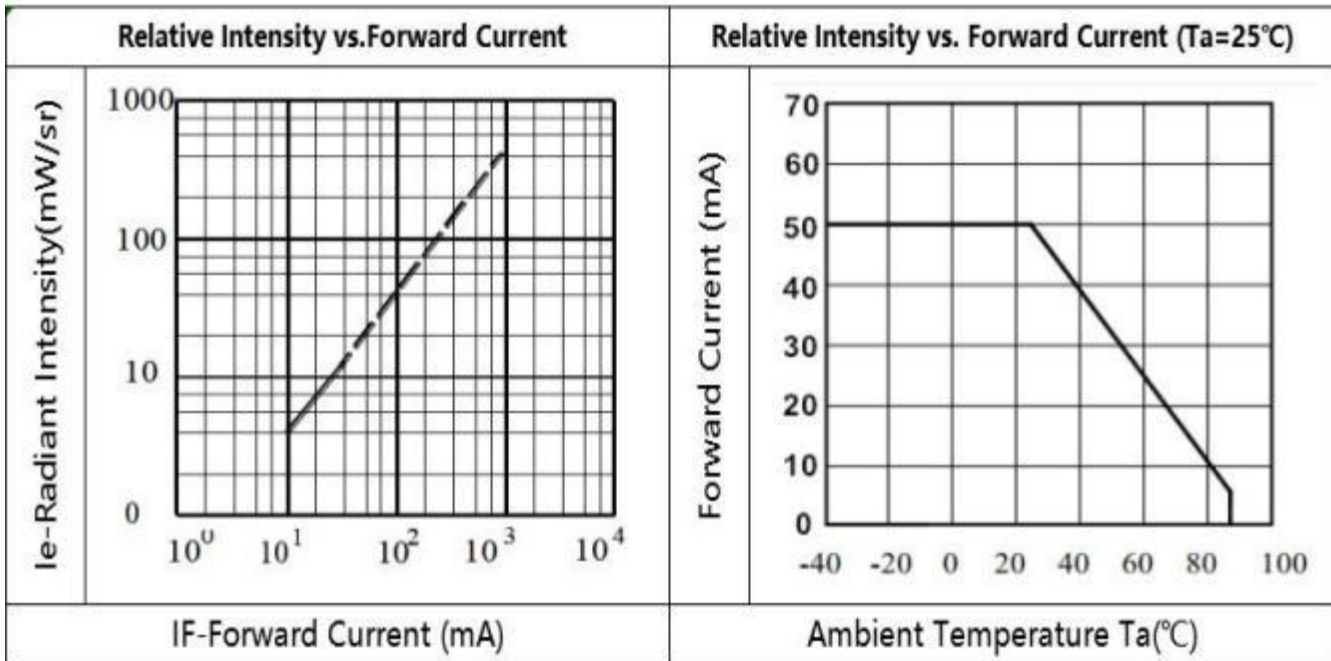
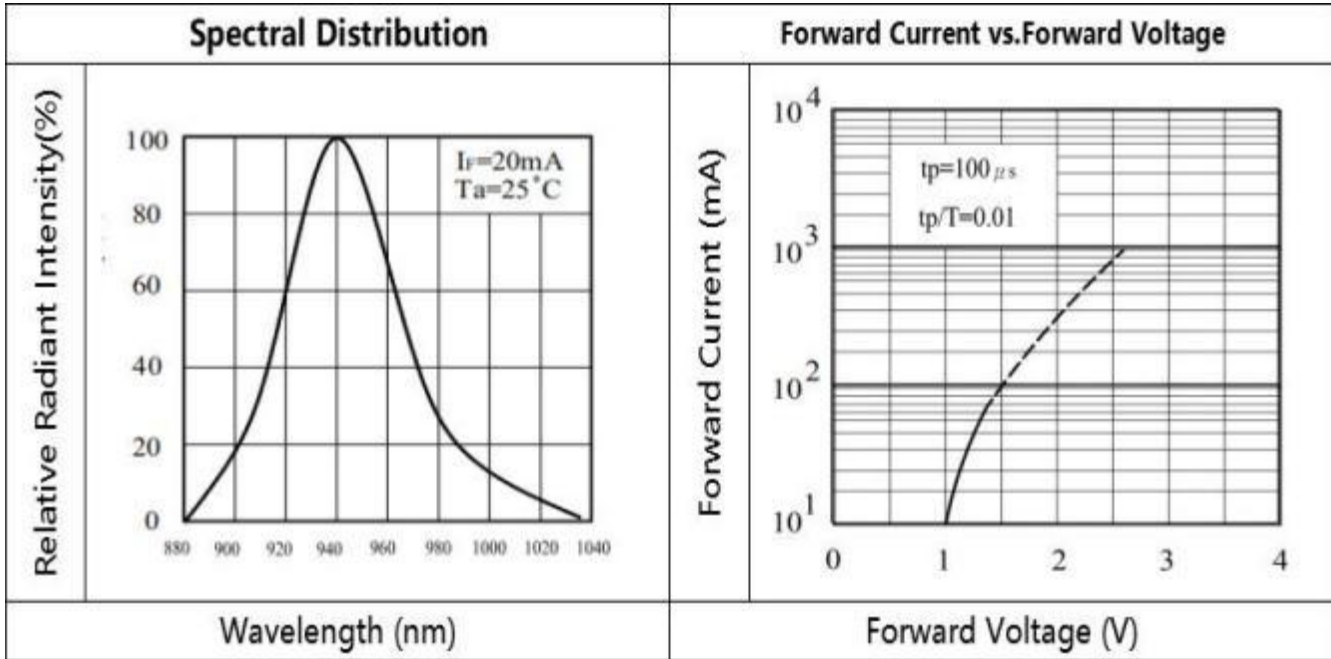
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Specifications for Bin Grading:

Ic(mA)		
Grade	Min.	Max.
E	0.2	0.87
F	0.4	1.35
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

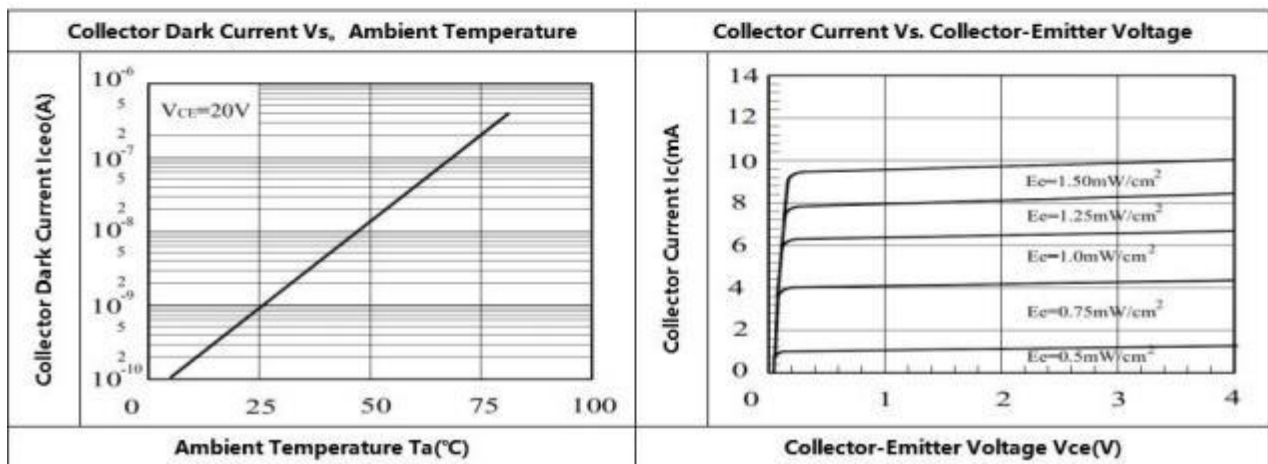
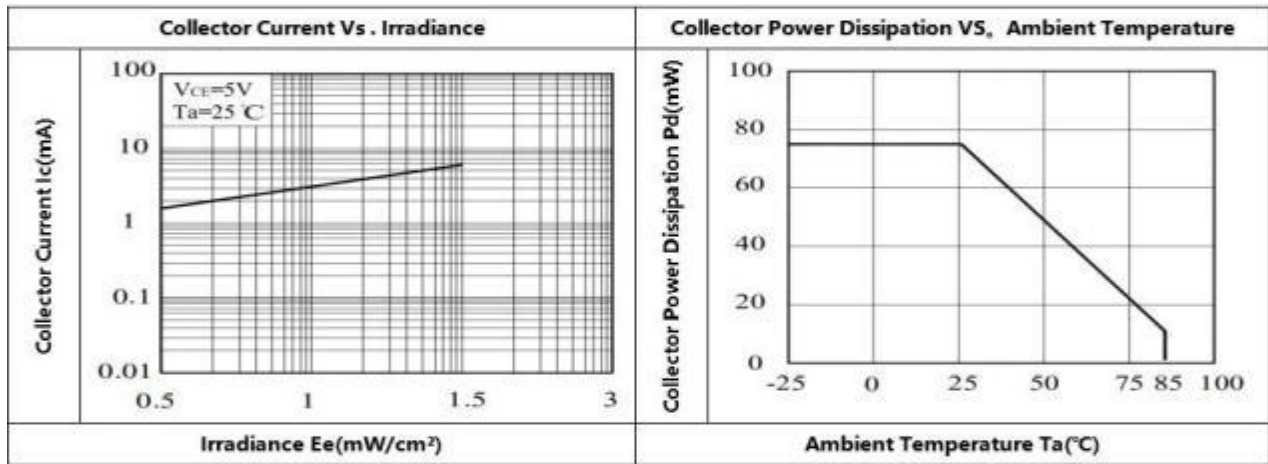
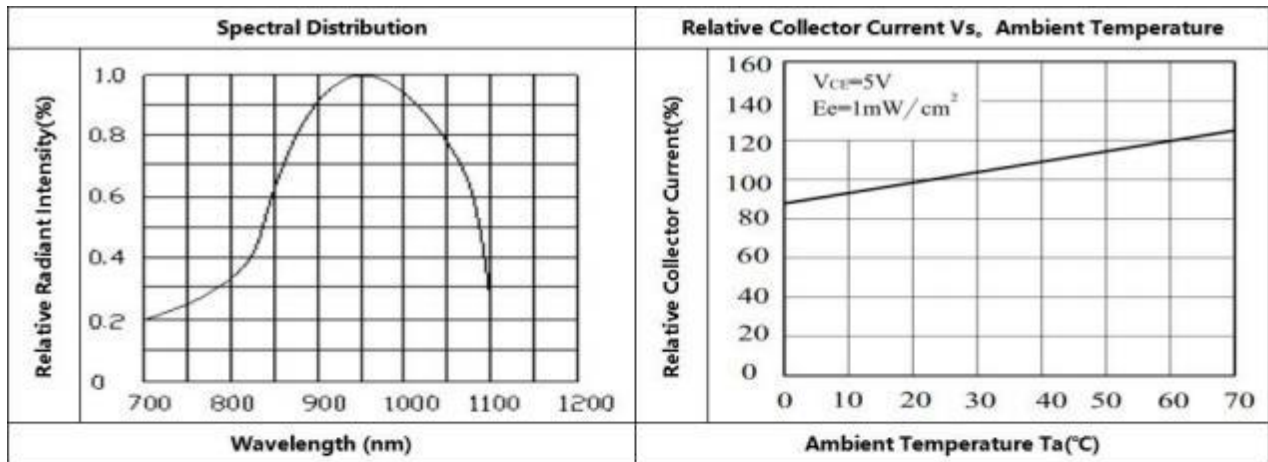
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Typical Electro-Optical Characteristics Curves For IR



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Typical Electro-Optical Characteristics Curves For PT



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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: Ivt: To test I_v value of the chip before the reliability test.

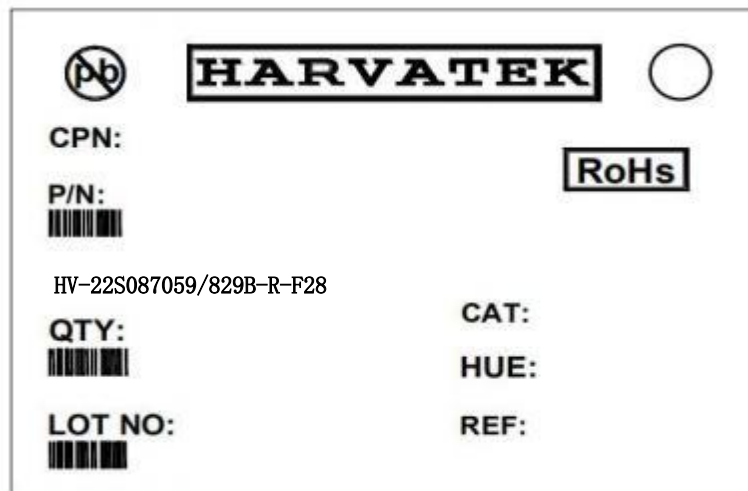
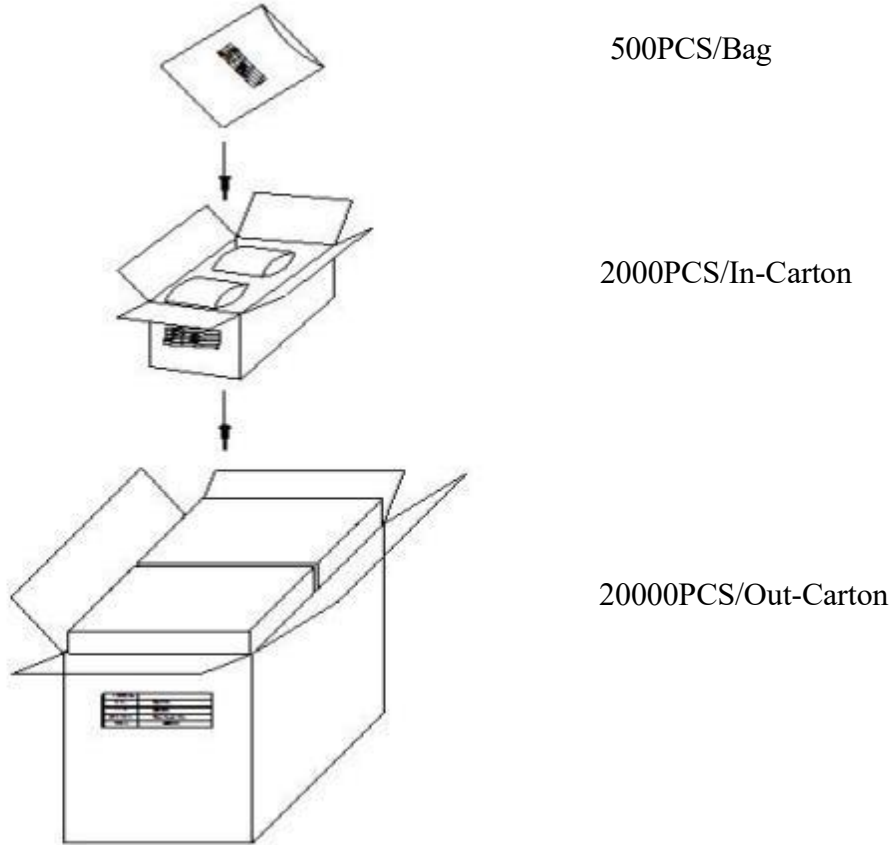
I_v: The test value of the chip that has completed the reliability test

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	12-11-2020

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