

Harvatek 10.1*5.6*5.5mm Reflective Type Sensor
HV-22S101055/829B-L8-F28

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|--|--------------------------|-------------------|----------------|----------------|
| Official Product | HV-22S101055/829B-L8-F28 | Customer Part No. | | Data Sheet No. |
| | ***** | ***** | | CDAE-050-086 |
| Specifications are subject to change without notice. Data and drawings herein are copyrighted. | | Oct. 27 2019 | Version of 1.0 | Page 1/11 |

DISCLAIMER

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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.

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Compliance and Certification

ISO9002, QS9000 and ISO14001 Certified

RoHS Compliant



Orderable Information

H V - 22S 101 055 / 829 B - L8 - F28

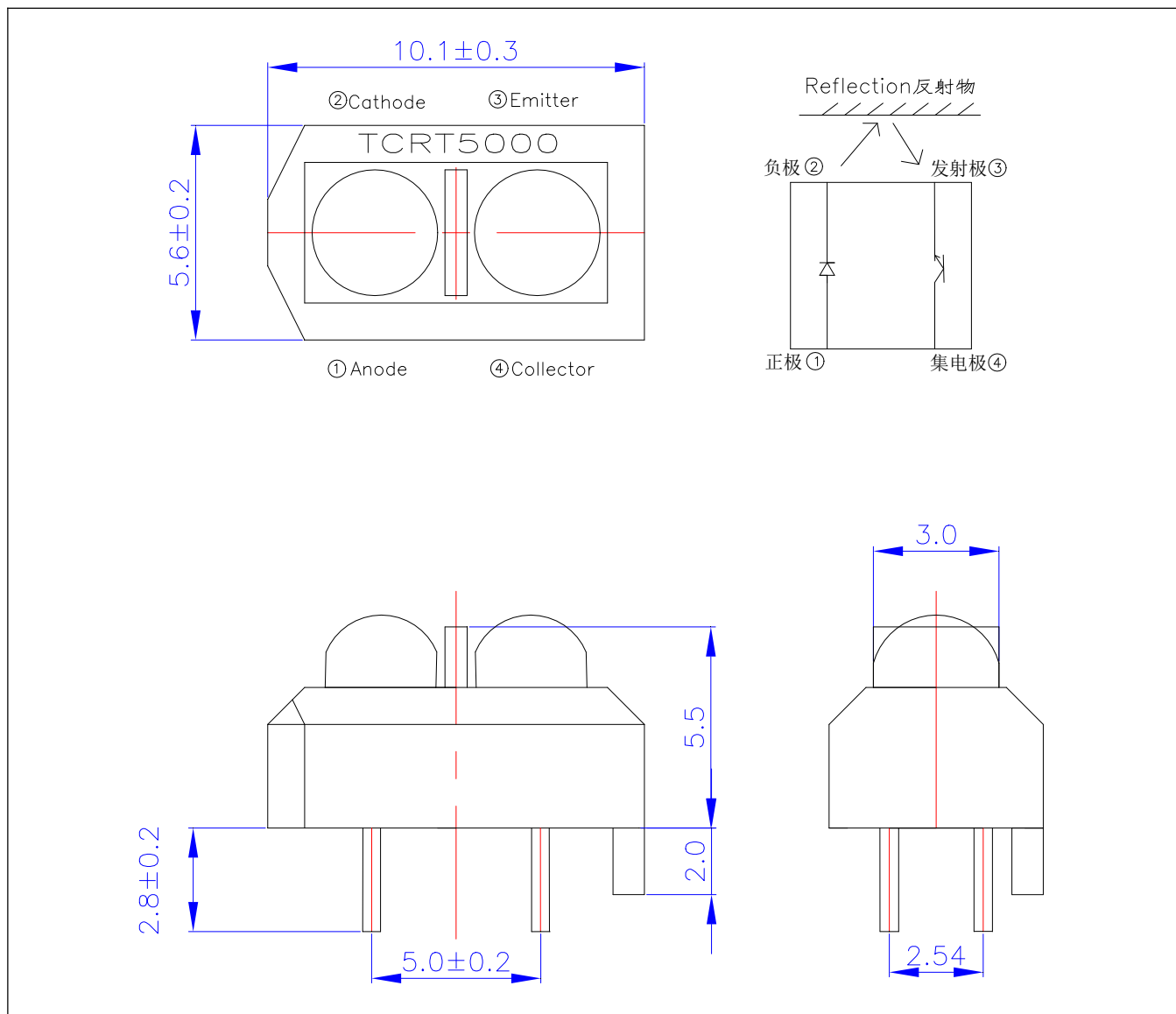
| Series Name | Color Code | Remark |
|------------------|---|--------|
| HV : HARVATEK | 22S101055 : 10.1*5.6*5.5mm Reflective Type Sensor. With AlGaAs Infrared emitter & Silicon Photo transistor. 829 : Lamp Model. B : PT Lens Color is Black L8-F28:HARVATEK Part No. | |

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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3.Specifications are subject to change without notice.

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

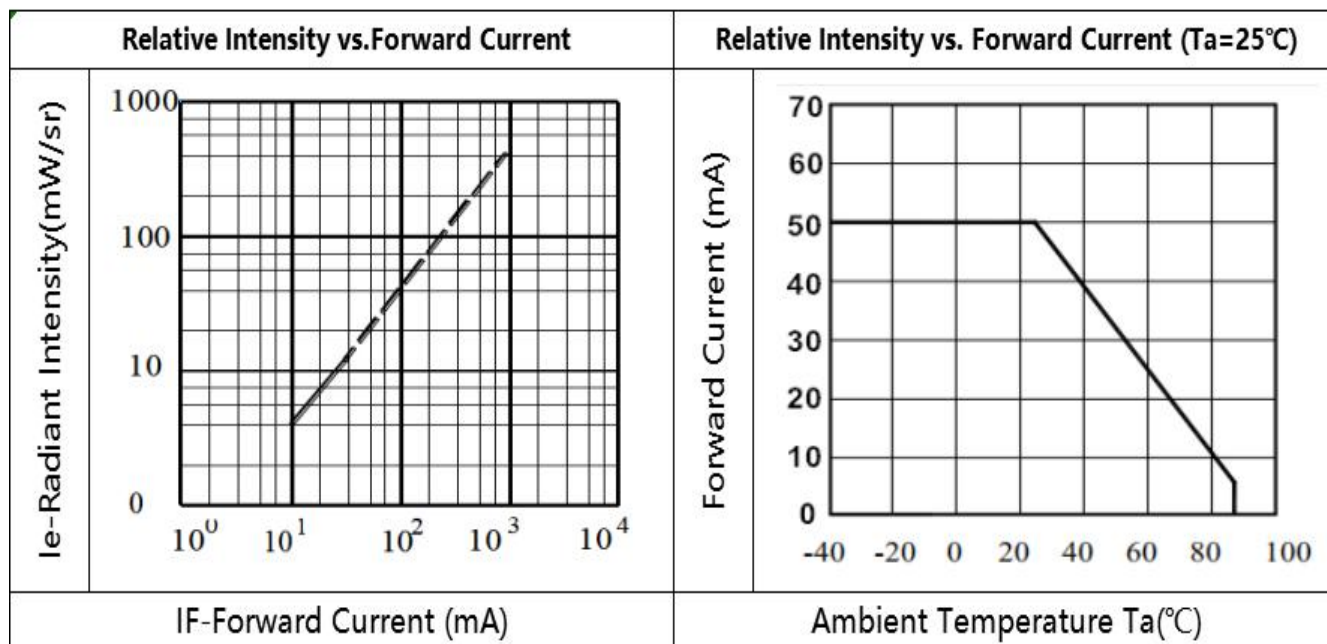
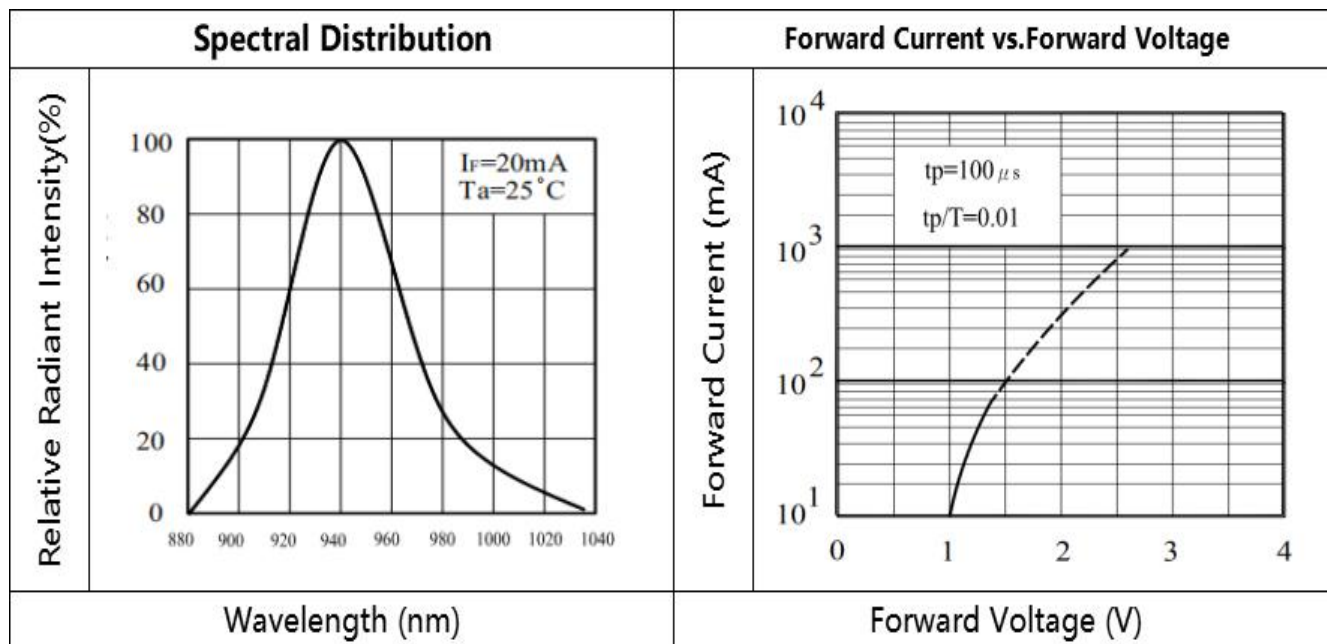
| Parameter | | Symbol | Condition | Min. | Typ. | Max. | Unit |
|--------------------------|-----------------|---------------|---|------|------|------|------------------|
| Emitter | Forward Voltage | V_F | $I_F=20\text{ mA}$ | / | 1.2 | 1.5 | V |
| | Reverse Current | I_R | $V_R=5\text{ V}$ | / | / | 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 | $I_{C(ON)}$ | $V_{CE}=5\text{V}$ $I_F=20\text{ mA}$ | 0.6 | / | 1.6 | mA |
| | Rise time | T_r | $V_{CE}=5\text{V}$ $I_C=1\text{mA}$ $R_L=1\text{K } \Omega$ | / | 15 | / | $\mu\text{ sec}$ |
| | Fall time | T_f | | / | 15 | / | $\mu\text{ sec}$ |

Specifications for Bin Grading:

| $I_C(\text{mA})$ | | |
|------------------|------|------|
| Grade | Min. | Max. |
| F | 0.6 | 1.35 |
| G | 0.7 | 1.6 |

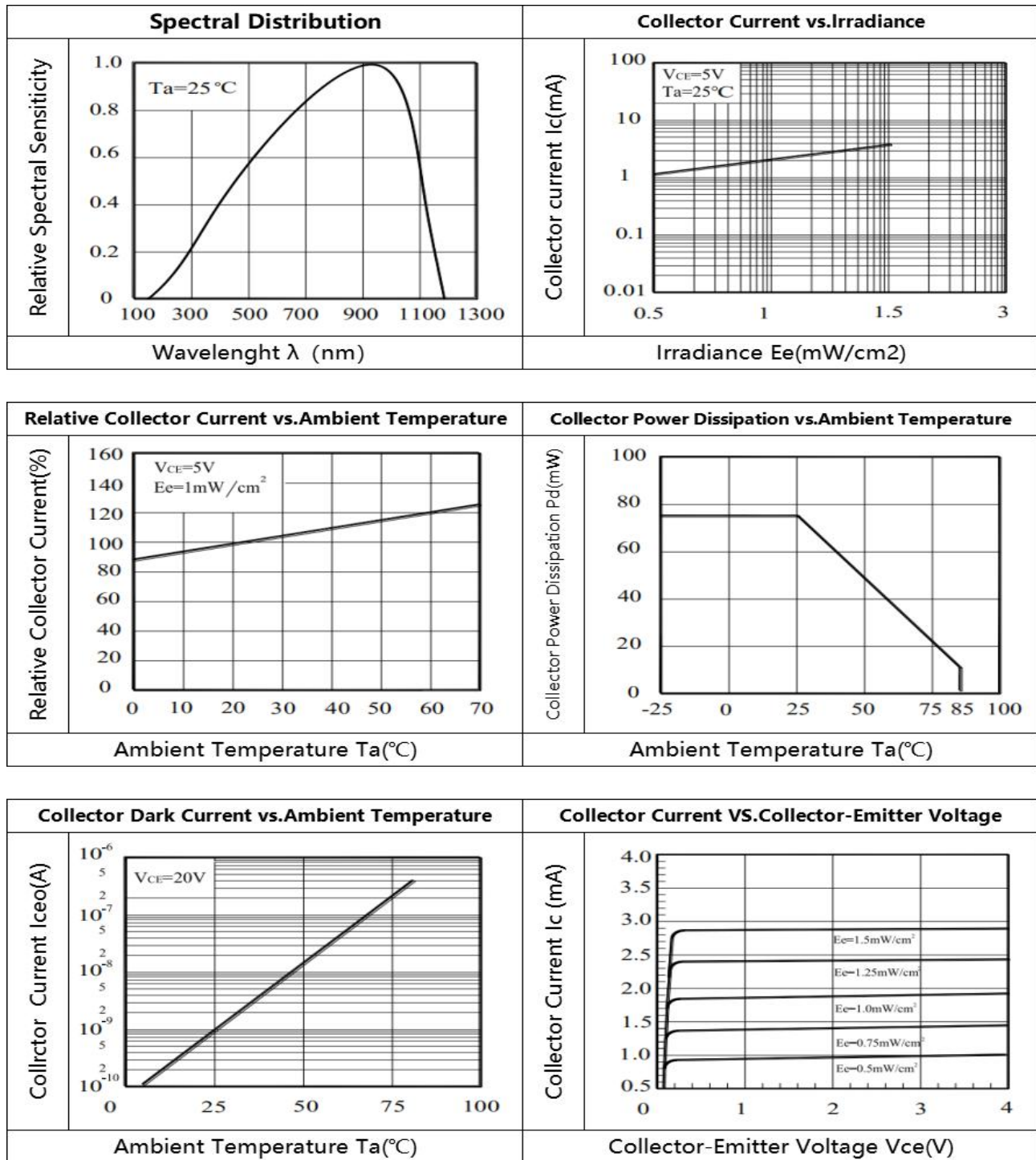
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Typical Electro-Optical Characteristics Curves For IR



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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.

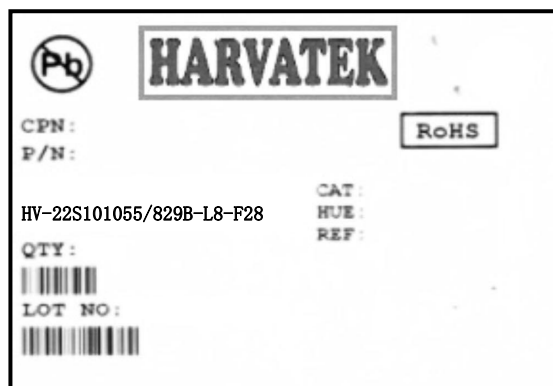
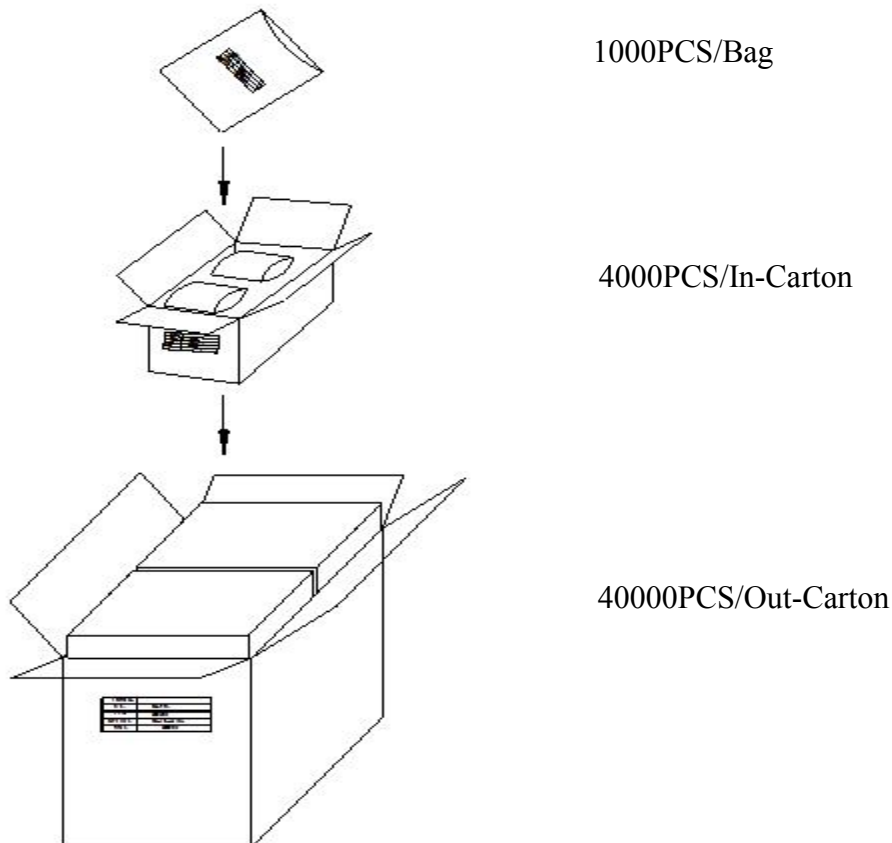
I_v: The test value of the chip that has completed the reliability test

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 | 10-27-2019 |
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