

SPECIFICATION FOR GoPro LED LAMP

Part No.: **GPO2905CD/R008-HF**

Customer No.: **EAV64471901**

REV:1.1

RECEIVED
<input checked="" type="checkbox"/> MASS PRODUCTION
<input type="checkbox"/> PRELIMINARY
<input type="checkbox"/> CUSTOMER DESIGN
DEVICE NUMBER : YG218-02017
PAGE:
CUSTOMER'S APPROVAL

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2018-06-25	2018-06-25	2018-06-25

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XIAMEN G&P ELECTRONICS CO., LTD.

Catalogue

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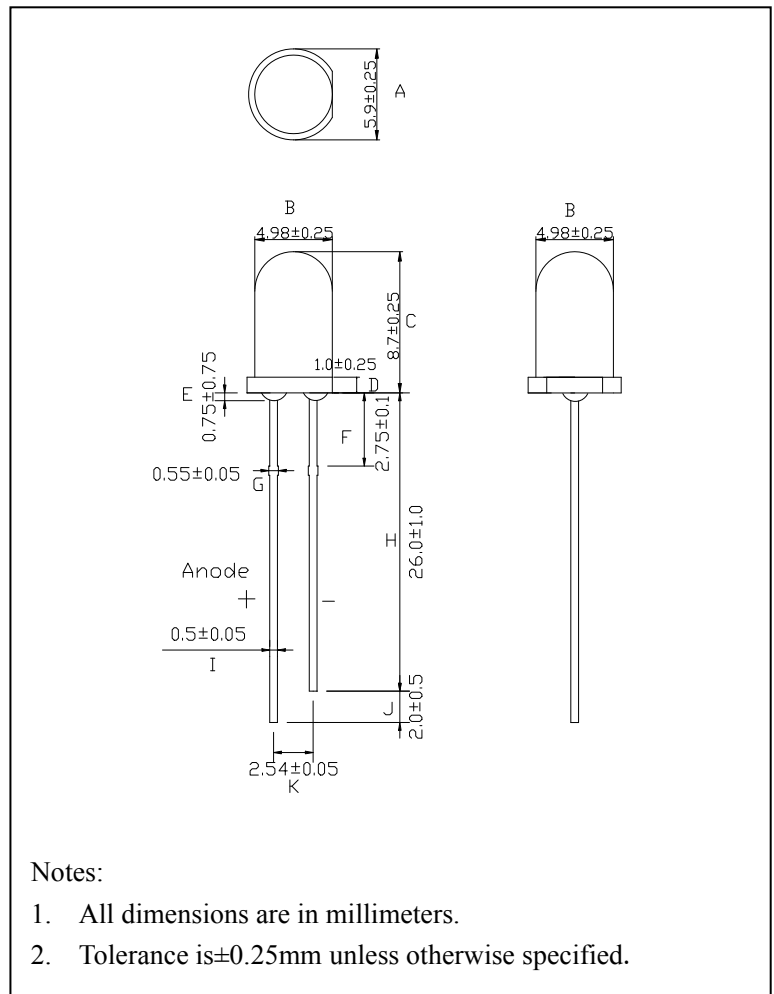
● Features:

1. Chip material: **AlGaInP**
2. Emitted color: **Orange**
3. Lens Appearance: **Water Clear**
4. Low power consumption.
5. High efficiency.
6. Low current requirement.
7. This product don't contained restriction substance, compliance RoHS standard.

● Applications:

1. TV set
2. Monitor
3. Telephone
4. Computer
5. Circuit board
6. Media, Audio

● Package dimensions:



● Absolute maximum ratings(Ta=25°C)

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	75	mW
Forward Current	IF	30	mA
Peak Forward Current*1	IFP	150	mA
Reverse Voltage	VR	5	V
Operating Temperature	Topr	-40°C ~80°C	°C
Storage Temperature	Tstg	-40°C ~85°C	°C
Soldering Temperature	Tsol	260°C (for 5 seconds)	°C
ESD(Human Body Model)	HBM	6000	V

*1Condition for IFP is pulse of 1/10 duty and 0.1msec width



● Electrical and optical characteristics(Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F=20\text{mA}$	1.70	2.00	2.40	V
Luminous Intensity	I_v	$I_F=20\text{mA}$	1150	1600	2535	mcd
Reverse Current	I_R	$V_R=5\text{V}$	-	-	10.0	μA
Peak Wave Length	λ_p	$I_F=20\text{mA}$	--	611	-	nm
Dominant Wave Length	λ_d	$I_F=20\text{mA}$	603.0	607.0	613.5	nm
Spectral Line Half-width	$\Delta\lambda$	$I_F=20\text{mA}$	-	20	-	nm
Viewing Angle	$2\theta_{1/2}$	$I_F=20\text{mA}$	-	30	-	deg

* Tolerance of Luminous Flux: $\pm 10\%$

* Tolerance of Forward Voltage: $\pm 0.1\text{V}$

* Tolerance of Dominant Wavelength: $\pm 1\text{nm}$

● Typical electro-optical characteristics curves

Fig.1 Relative intensity vs. Wavelength

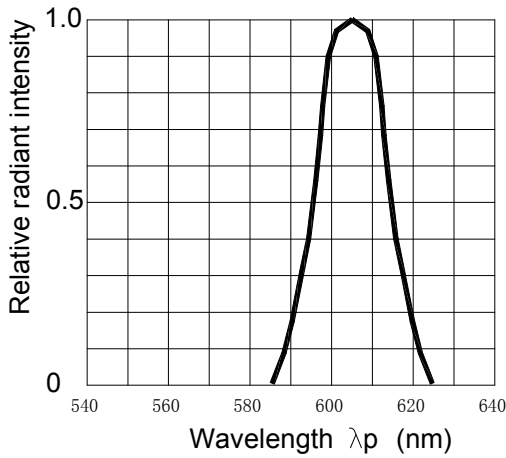


Fig.2 Forward current derating curve vs. Ambient temperature

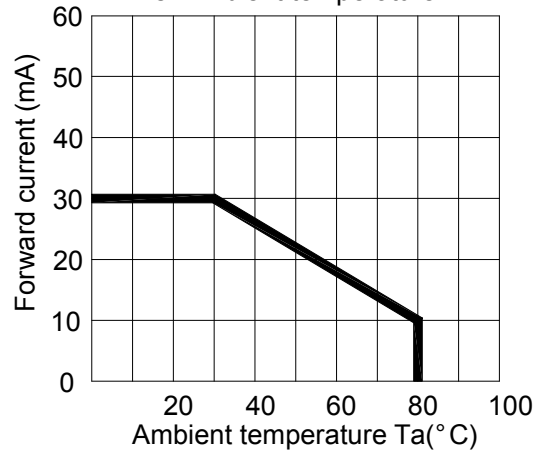


Fig.3 Forward current vs. Forward voltage

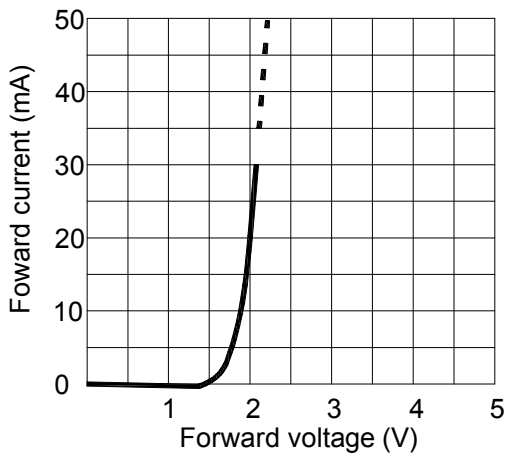


Fig.4 Relative luminous intensity vs. Ambient temperature

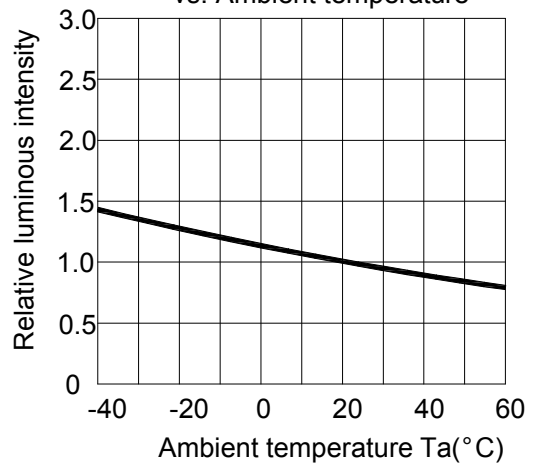


Fig.5 Relative luminous intensity vs. Forward current

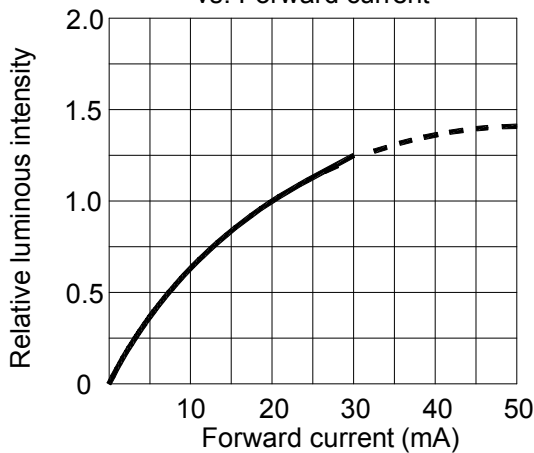
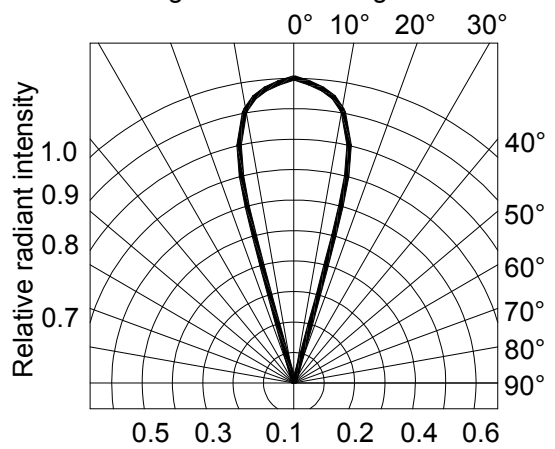


Fig.6 Radiation diagram



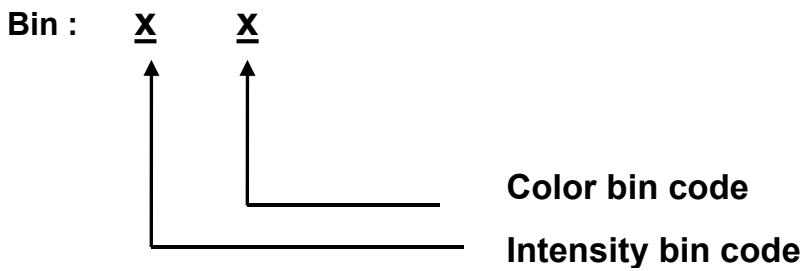
● Bin Limits

1. Luminous Intensity bin limits (At $I_F=20\text{mA}$): Luminous Intensity IV

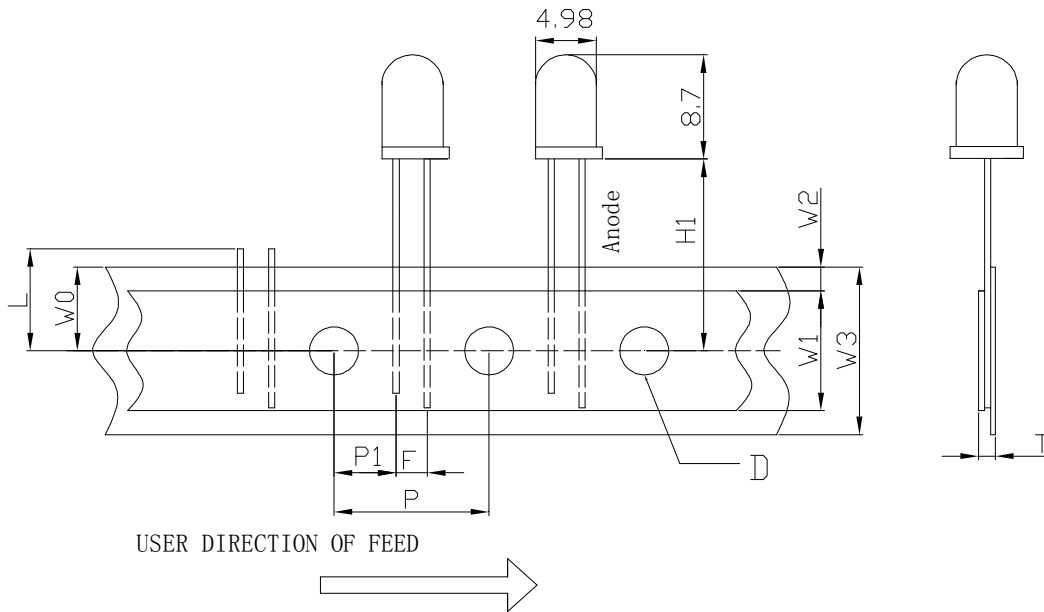
Bin Code	Min. (mcd)	Max. (mcd)
Q	1150	1500
R	1500	1950
S	1950	2535

2. Color Bin Limits (At $I_F=20\text{mA}$) : Dominant Wave Length $\lambda_d(\text{nm})$

Bin Code	Min. (V)	Max. (V)
D	603.0	606.5
E	606.5	610.0
F	610.0	613.5



● Tapping and packaging specifications(Units:mm)

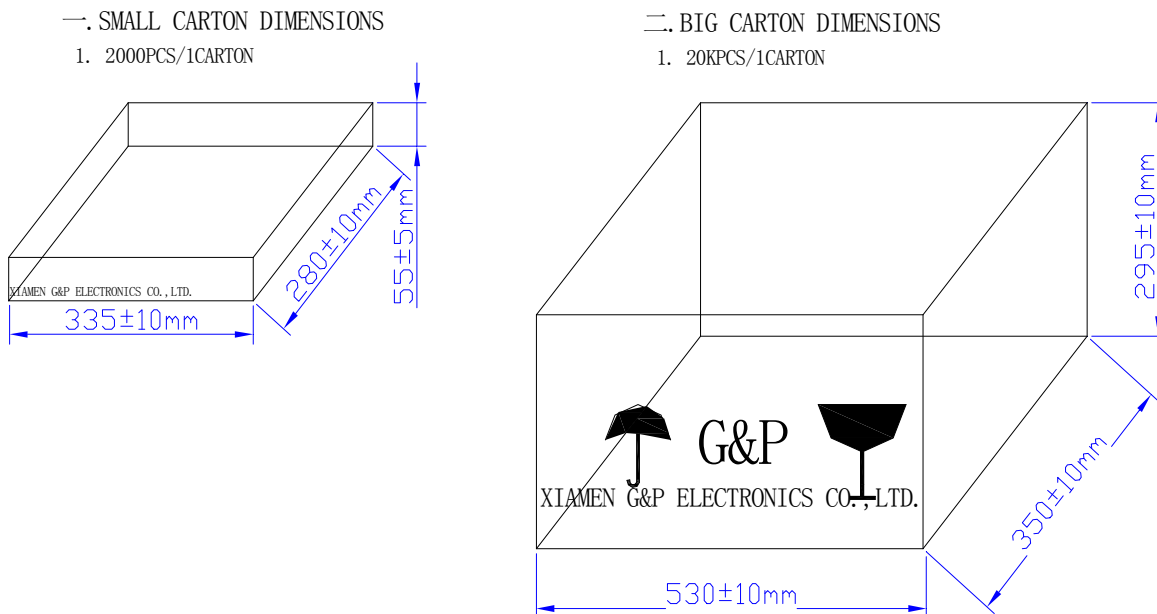


ITEM	SPEC
H1	20.9±0.5
L	11.0 Max
W0	9.0
P1	5.0
F	2.54
P	12.7
D	4.0
W1	10.0
W2	4.0 Max
W3	18.0
T	1.42 Max

Notes:

1. All dimensions are in millimeters.
2. Tolerance is±0.25mm unless otherwise specified.
3. Lead spacing is measured where the leads emerge from the package.

● PACKAGING DIMENSIONS :(mm)



Note: Tolerance is $\pm 1.0\text{mm}$ unless otherwise specified.

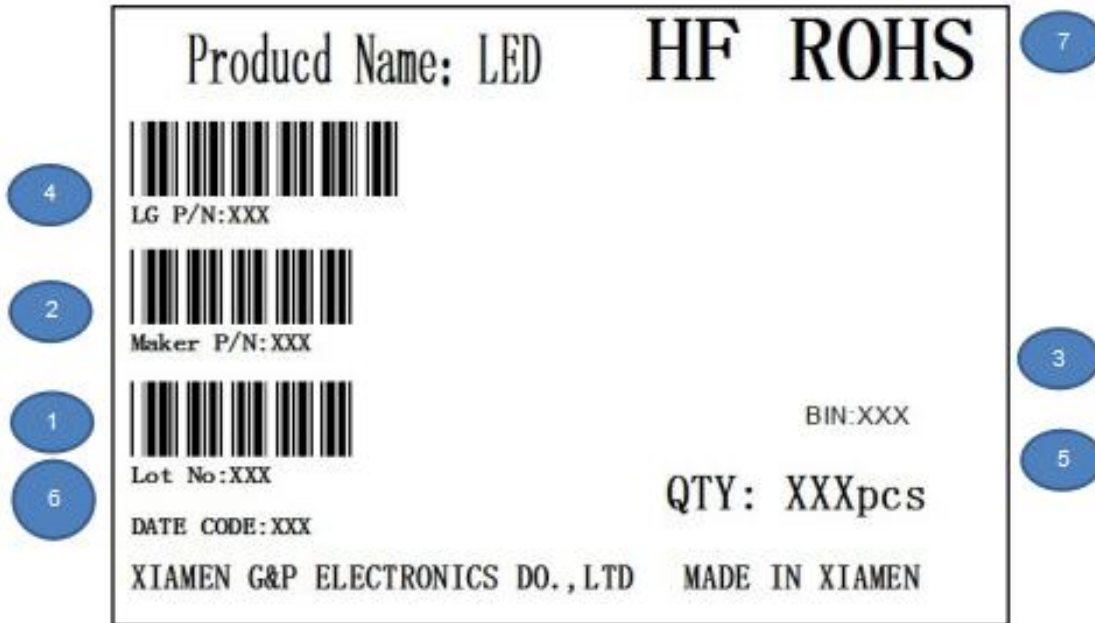
● ESD NOTES:

1. This product is electrostatic insensitive device, so static electricity and surge will damage the LED. It is required to wear a wrist-band when handling the LED. All device, equipment, machinery, desk and ground must be properly grounded.
2. ESD parameters:
 - Operator grounding $R_O < 3\text{M}\Omega$;
 - Equipment grounding $R_E < 4\Omega$;
 - Test environment ESD voltage $V_T < 50\text{V}$.
3. Not to be hand LED by unauthorized personnel out ESD bag.
4. Advise put ESD tablecloth on the worktable, and grounding. Use the ion fan If the environment ESD voltage out of limit. Especially The equipment of wave crest solder and circumfluence solder.
5. Do not directory voltage on the LED in Testing. Note the current not out of 20mA.
6. When using LED, it must use a protective resistor in series. The reverse voltage is not out of 5V.

Standard Lable and Barcode

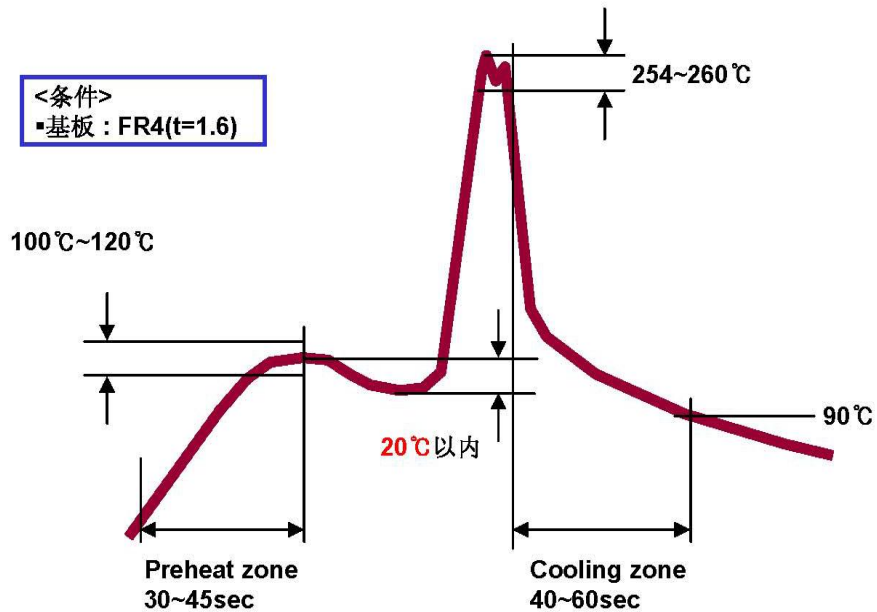
Standard Lable:Stick on Tape,Inner Ammo Box and Reels.

Bar-Code Lable size:52x76mm(Typ)

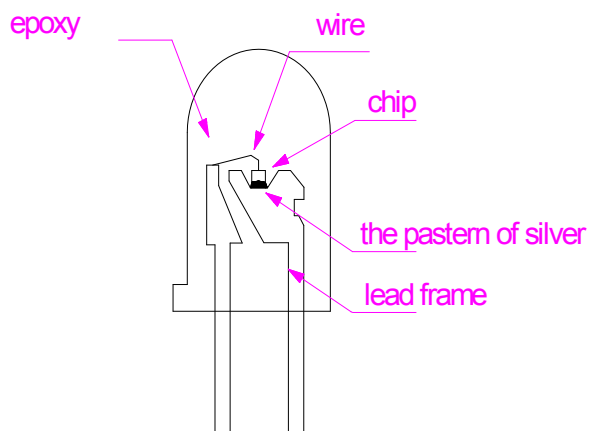


Item	Detail	Barcode
1) Lot.No./Lot	Production lot.running number	Yes
2) Maker P/N	Maker part number	Yes
3) BIN	Product Bin Code	Yes
4) LG PN	Customer part number	Yes
5) QTY	Quantity	Yes
6) DATE CODE	Date code(1807:Y=2018,Work week=07)	Yes
7) HF/RoHS	HF&RoHS Compliant Information	Yes

The non-lead wave solder curves



● Supplier Information:



Items	manufactory	Remarks
CHIP	TYNTEK /OPTO	TaiWan
LEAD FRAME	DECHOU/JIEHUI	NINGBO/GUANGDONG
THE PASTERN OF SILVER	HENKEL	SHANGHAI
WIRE	HERAEUS	SHANDONG
Epoxy	FINE POLYMERS	TAIWAN

RELIABILITY TEST ITEM AND CONDITION

NO	Parameter	Condition	Reference Standard	Judgment
1	Stable humidity	Intensity: Temperature:90±5℃ Relative humidity 85+5/-0% Time :1000H	MIL STD -202:103B JIS C7021 :B-11	Restore 1H in a standard atmosphere press, then test parameter. Judgment: $V_F \leq 1.1V_F$ (original data) $I_R \leq I_R$ (MAX) $I_V \geq 0.5I_V$ (original data)
2	Low temperature storage	Temperature: -40±2℃ Time: 1000H	JIS C 7021 :B12	Restore 1H in a standard atmosphere press, then test parameter. Judgment: $V_F \leq 1.1V_F$ (original data) $I_R \leq I_R$ (MAX) $I_V \geq 0.5I_V$ (original data)
3	High temperature storage	Temperature: 90±2℃ Time: 1000H	MIL-STD-883:1008 JIS C 7021 :B-10	Restore 1H in a standard atmosphere press, then test parameter. Judgment: $V_F \leq 1.1V_F$ (original data) $I_R \leq I_R$ (MAX) $I_V \geq 0.5I_V$ (original data)
4	Solder Ability	Temperature: 245±3℃ Time: 10±1S	MIL-STD-202:208D MIL-STD-750-2026 MIL-STD-883:2003 JIS C 7021 :A-2	The area of covering solder exceed 3/4, and the surface as clean as a whistle Judgment: $V_F \leq 1.1V_F$ (original data) $I_R \leq I_R$ (MAX) $I_V \geq 0.5I_V$ (original data)
5	Solder endurance heat test	Temperature: 260±5℃ Time: 10±1S Test the parameter	MIL-STD-202:201A MIL-STD-750:2031 JIS C 7021 :A-1	Restore 30 min in a standard atmosphere press, then test the parameter Judgment: $V_F \leq 1.1V_F$ (original data) $I_R \leq I_R$ (MAX) $I_V \geq 0.5I_V$ (original data)
6	Hand Solder Endurance Heat	Temperature: 350±5℃ Time: 3±1S	-	Restore 1H in a standard atmosphere press, then test parameter. Judgment: $V_F \leq 1.1V_F$ (original data) $I_R \leq I_R$ (MAX) $I_V \geq 0.5I_V$ (original data)
7	Temperature circle	Low temperature: -40±2℃, 30min Room temperature: 25℃, 10min High temperature: 90±2℃, 30min Room temperature: 25℃, 10min, 100 cycle	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS C 7021 :A-4	Restore 1H in a standard atmosphere press, then test parameter. Judgment: $V_F \leq 1.1V_F$ (original data) $I_R \leq I_R$ (MAX) $I_V \geq 0.5I_V$ (original data)

8	Life test	Temperature: 85±5°C IF=20mA Time: 1000H	MIL-STD-750:1026 MIL-STD-883:1005 JIS C 7021 :B-1	Restore 1H in a standard atmosphere press, then test parameter. Judgment: $V_F \leq 1.1V_F$ (original data) $I_R \leq I_R$ (MAX) $I_V \geq 0.5I_V$ (original data)
9	Hight Temperature Electrifying	Temperature:85±5°C,IF=5mA, Time: 500H Indoor temperature: 2H	-	Restore 1H in a standard atmosphere press, then test parameter. Judgment: $V_F \leq 1.1V_F$ (original data) $I_R \leq I_R$ (MAX) $I_V \geq 0.5I_V$ (original data)
10	Lead bending intensity	Weight 2kg Time:5S Weight 250g 00~900~00 bend, 3 cycles	MIL-STD-750:2036 JIS C 7021 :A-11	The pin should not be broken or stretched Judgment: $V_F \leq 1.1V_F$ (original data) $I_R \leq I_R$ (MAX) $I_V \geq 0.5I_V$ (original data)
11	NaCl spray	Temperature: 35±5°C Consistence:5% NaCl Spray:8H 1 cycle:16H 2cycle	JIS C 0023-1989	The pin should not be oxidized Judgment: $V_F \leq 1.1V_F$ (original data) $I_R \leq I_R$ (MAX) $I_V \geq 0.5I_V$ (original data)
12	wave solder	Reference: The non-lead wave solder curves	-	Externality:Use CCD to check if the spun gold of the led dent or not. Judgment: $V_F \leq 1.1V_F$ (original data) $I_R \leq I_R$ (MAX) $I_V \geq 0.5I_V$ (original data)

