SPECIFICATION

Customer Name					
Customer No.					
Product Description			**Photo Interrupter**		
Product Model			**ORTR-422S-(GK)**		
Orient Confirm			**Customer Confirm**		
Approved by	**Checked by**	**Prepared by**	**Approved by**	**Quality**	**Engineering**
Chenjunyuan	Linshixiu	Zhengdagui			
Judge outcome：		**OK**	**Judge outcome：**		

Add：Block A 3rd Floor No.4 Building Tian An Cyber Park Huang Ge Rd, Long Gang Dist, Shenzhen, GD
TEL：0755-29681816 **URL：www.orient-opto.com**

1、Features

- Fast response time.
- High sensitivity.
- Thin and small package.
- Pb free.
- This product itself will remain within RoHS compliant version.
- Compliance with EU REACH.

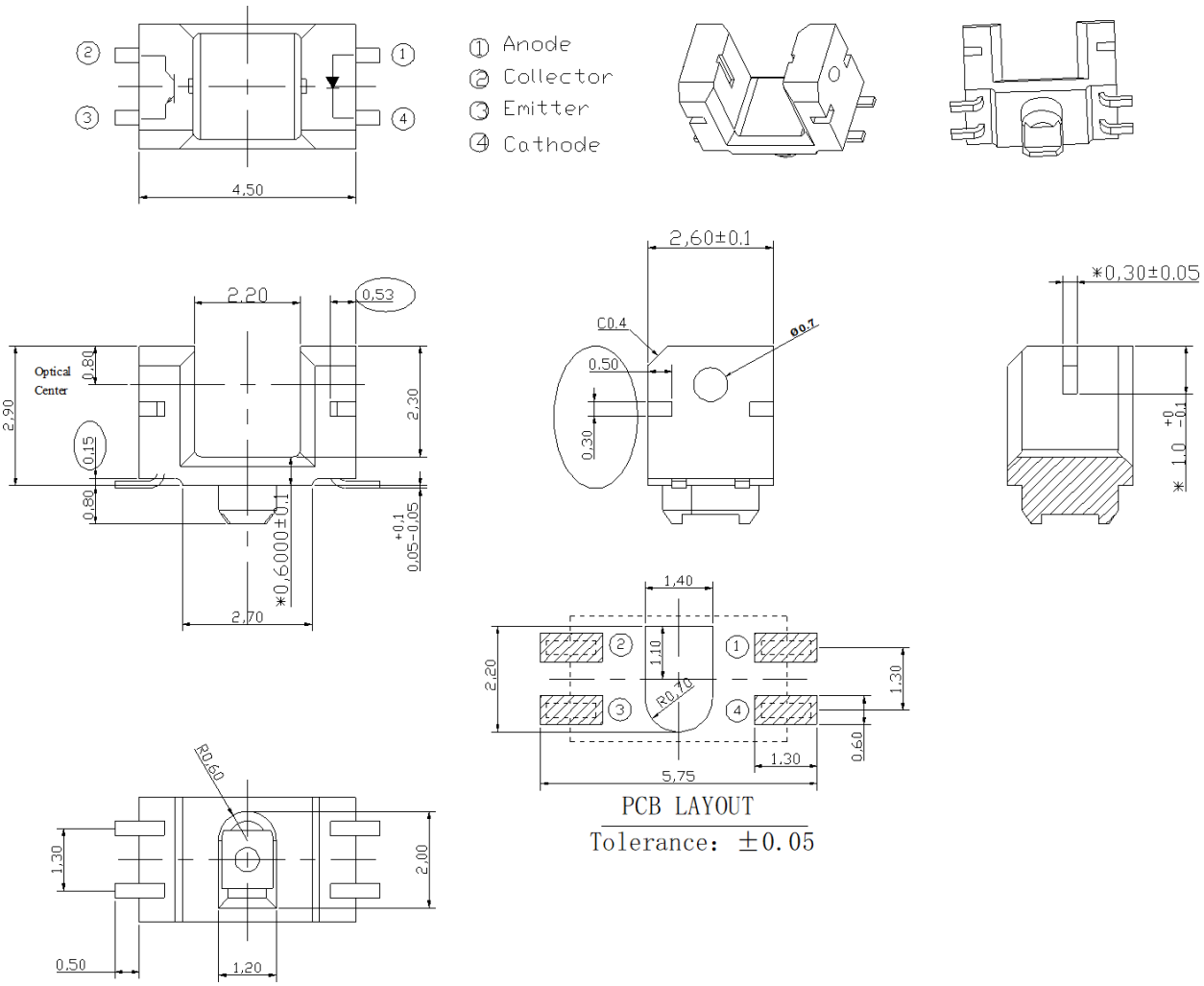
2、Applications

- Printer.
- Copier.
- Scanner.
- Opto-electronic switch.

3、Description

- The ORTR-422S-(GK) is an ultra small outline photo-interrupter, integrating both infrared emitter and silicon phototransistor detector with plastic molding housing.

4、Package Outline Dimensions



Notes:

1).All dimensions are in millimeters.

2).Tolerance is ± 0.20mm unless otherwise specified.

3).Specifications are subject to change without notice.

5、Absolute maximum ratings at Ta=25℃

Parameter		Symbol	Rating	Unit
Input	Power Dissipation	P_D	65	mW
	Forward Current	I_F	50	mA
	Reverse Voltage	V_R	5	V
	Peak Forward Current	I_{FP}	0.5	A
Output	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	20	mA
	C-E Voltage	V_{CEO}	30	V
	E-C Voltage	V_{ECO}	5	V
Operating Temperature Range		T_{opr}	-25~+80	℃
Storage Temperature Range		T_{stg}	-30~+85	℃
Soldering Temperature *1		T_{sld}	260	℃

Notes: *1 Soldering time≦5 seconds.

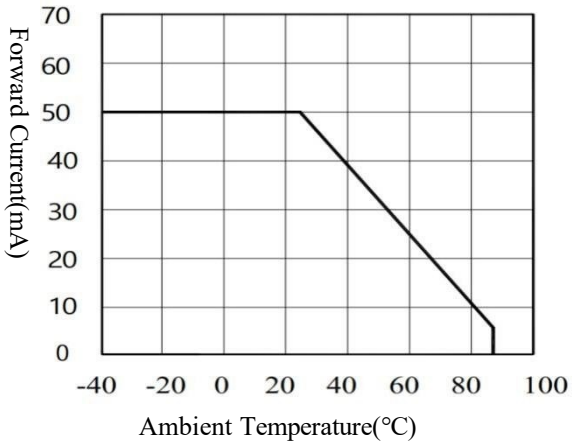
6、Electrical-optical characteristics at Ta=25℃

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F	I_F=20mA	-	1.2	1.4	V
	Reverse Current	I_R	V_R=5V	-	-	10	uA
	Peak Wave Length	λ_P	I_F=20mA	-	940	-	nm
Output	Collector Dark Current	I_{CEO}	V_{CE}=20V	-	-	100	nA
	C-E Saturation Voltage	$V_{CE(sat)}$	I_C=0.05mA I_F=10mA	-	-	0.4	V
Transfer Characteristics	On State Collector Current	I_C(on)	V_{CE}=5V I_F=5mA	0.1	-	0.65	mA
	Rise Time	t_r	V_{CE}=5V I_C=1mA R_L=1K	-	10	-	us
	Fall Time	t_f		-	10	-	us

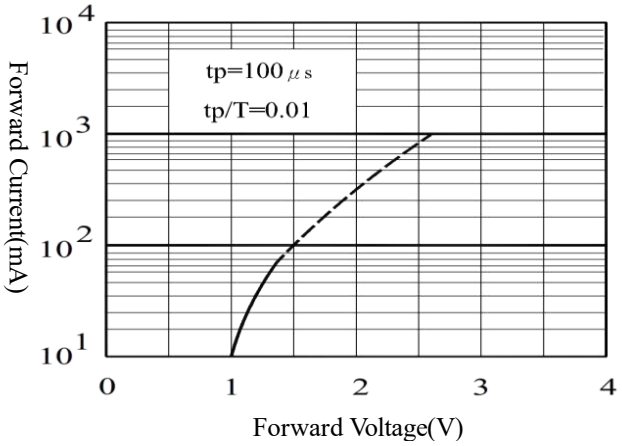
7、Typical optical characteristics curves

Typical Electro-Optical Characteristics Curves-IR

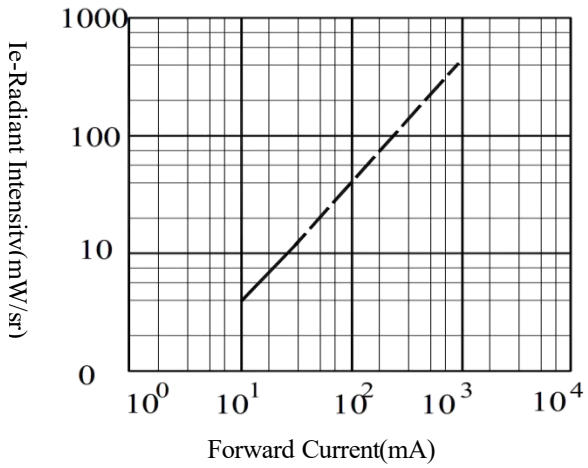
Forward Current vs. Ambient Temperature



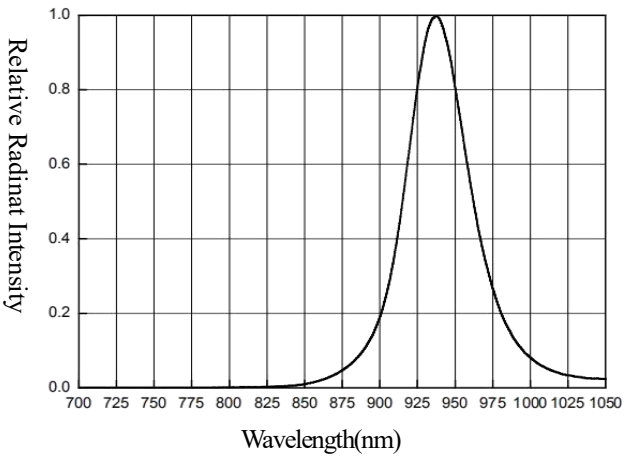
Forward Current vs. Forward Voltage



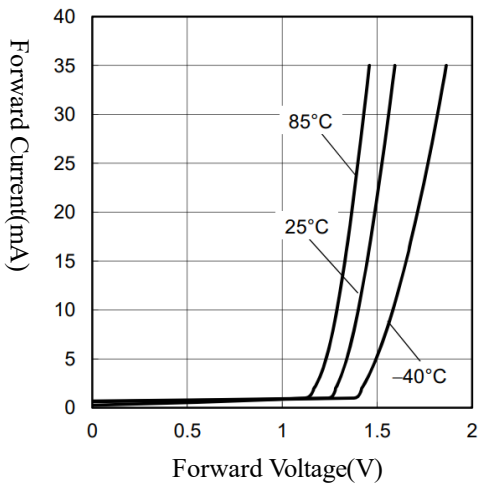
Radiant Intensity vs. Forward Current



Spectral Distribution

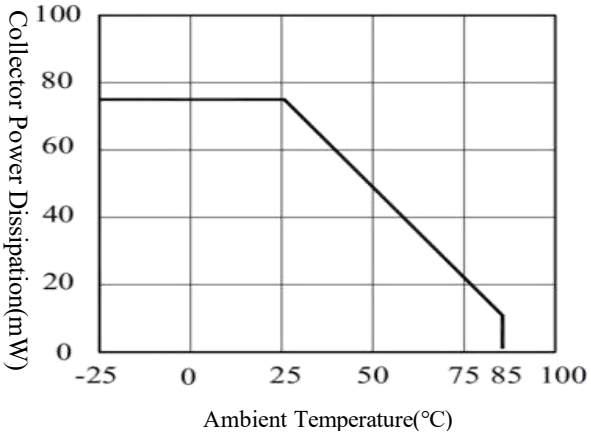


Forward Voltage vs. Forward

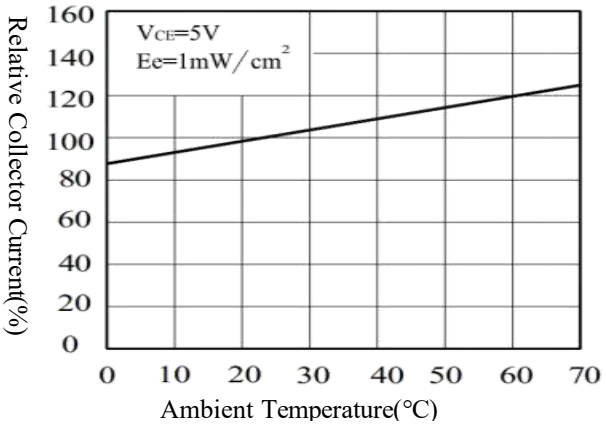


Typical Electro-Optical Characteristics Curves-PT

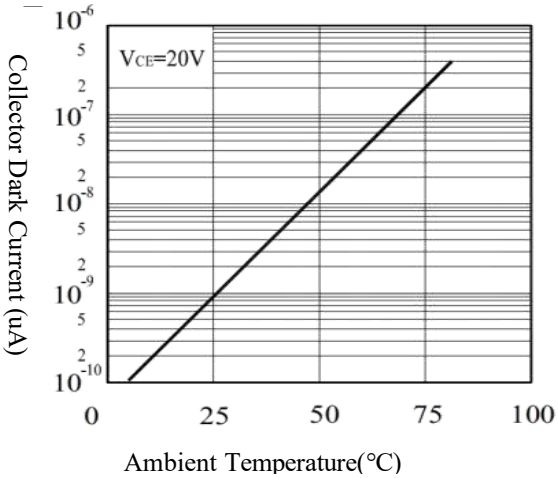
Collector Power Dissipation vs. Ambient



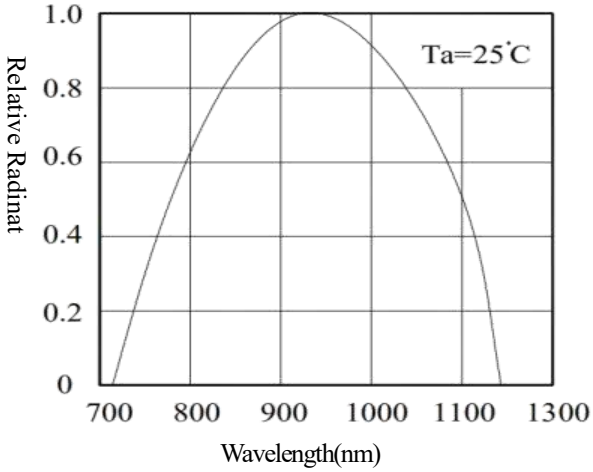
Relative Collector Current vs.



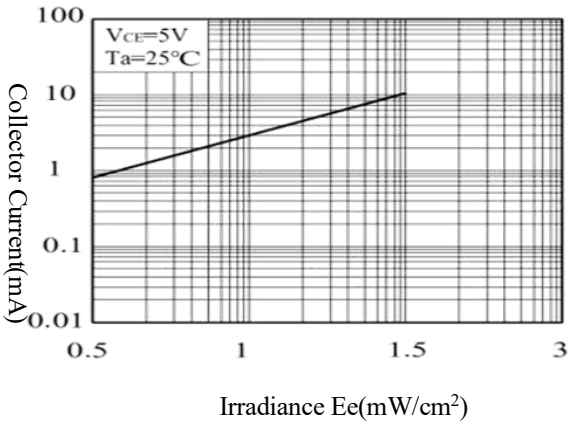
Collector Dark Current vs. Ambient



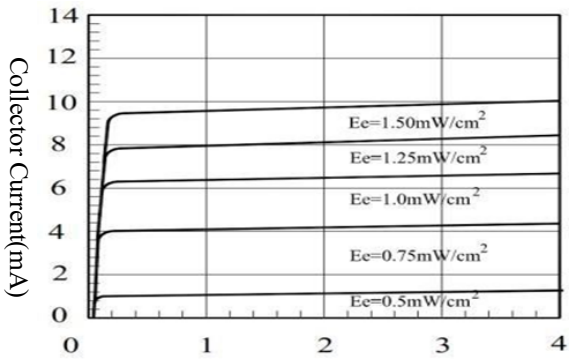
Spectral Sensitivity



Collector Current vs. Irradiance

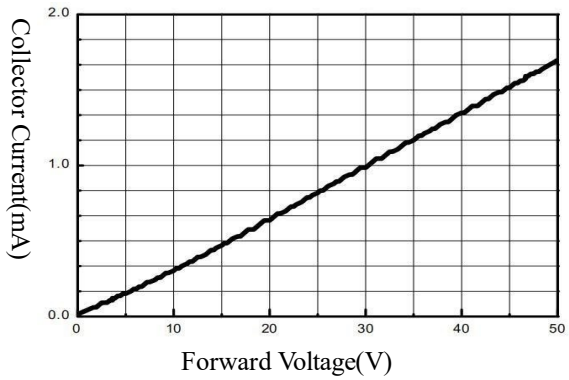


Collector Current vs. Collector-Emitter

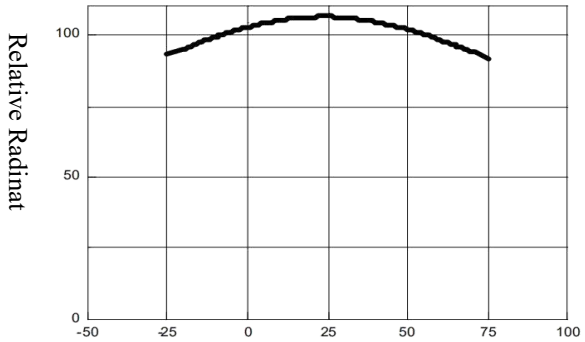


Typical Electro-Optical Characteristics Curves-PT

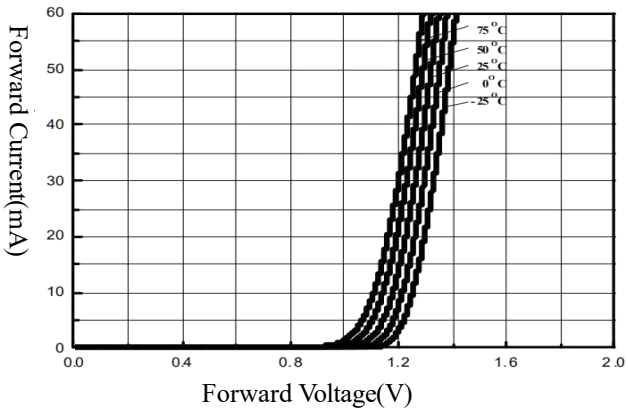
Collector Current vs. Forward Voltage



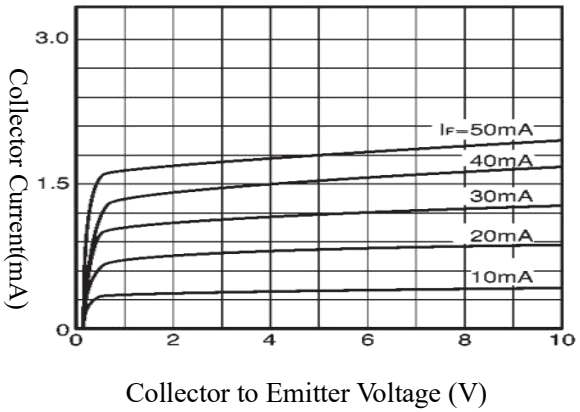
Relative Output vs. Ambient



Forward Current vs. Forward Voltage

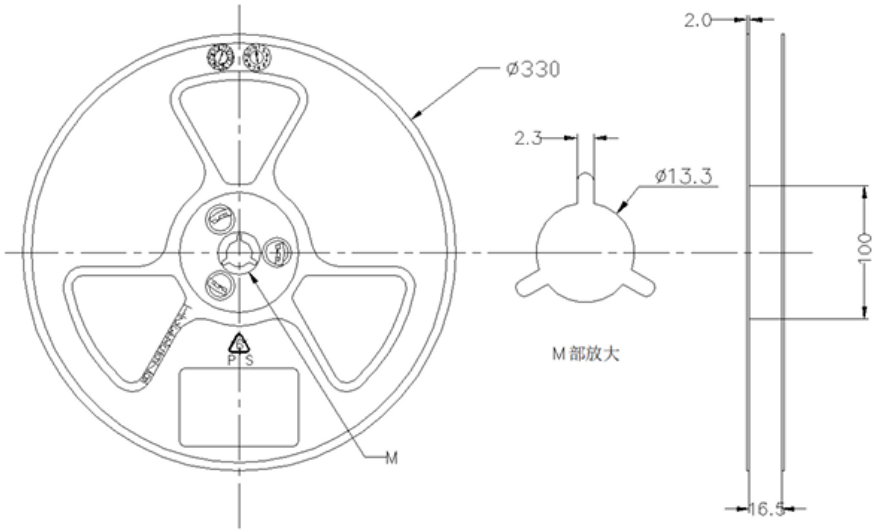


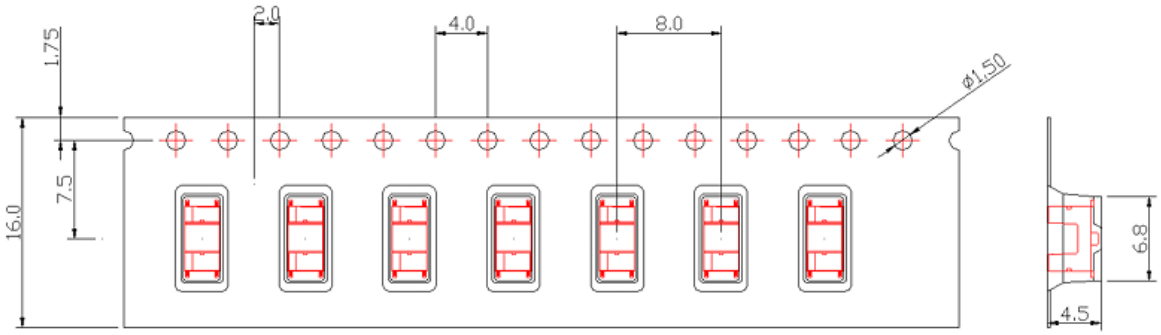
Output Characteristics

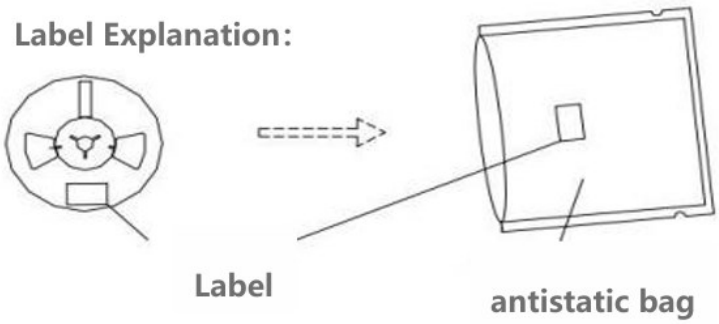


8、Package and Label of Products

Package：

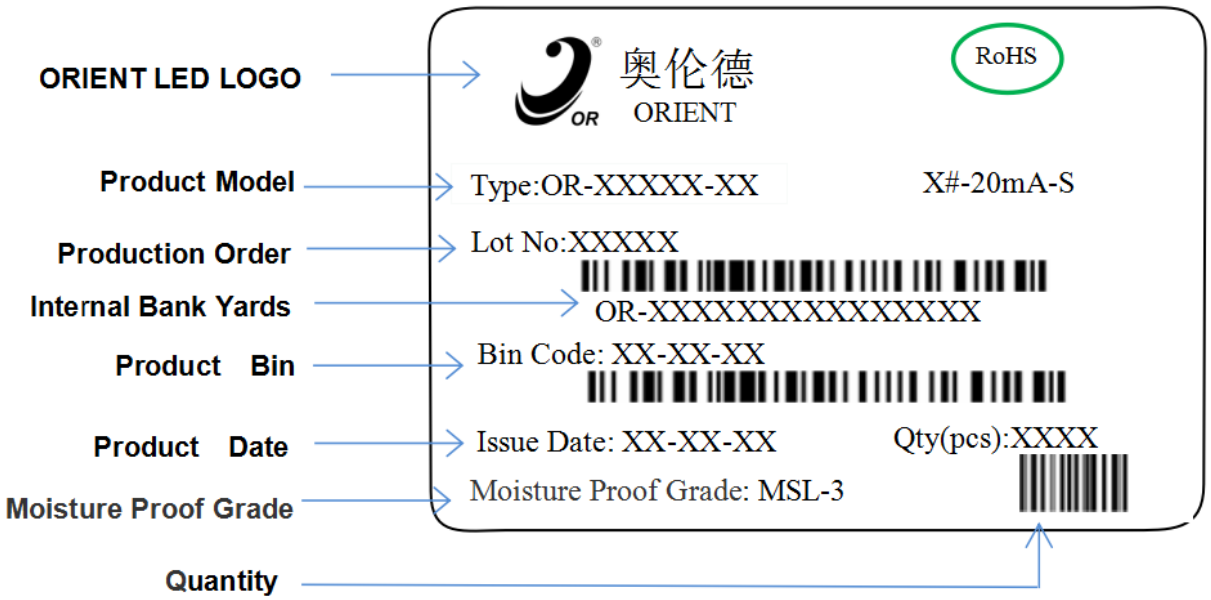






Note：2000pcs/reel，15reels/box(30,000pcs).

Label:


ORIENT LED LOGO
Product Model
Production Order
Internal Bank Yards
Product Bin
Product Date
Moisture Proof Grade
Quantity
奥伦德
ORIENT
RoHS
Type:OR-XXXXX-XX
X#-20mA-S
Lot No:XXXXX
OR-XXXXXXXXXXXXXXX
Bin Code: XX-XX-XX
Issue Date: XX-XX-XX
Qty(pcs):XXXX
Moisture Proof Grade: MSL-3

9、Precautions for use

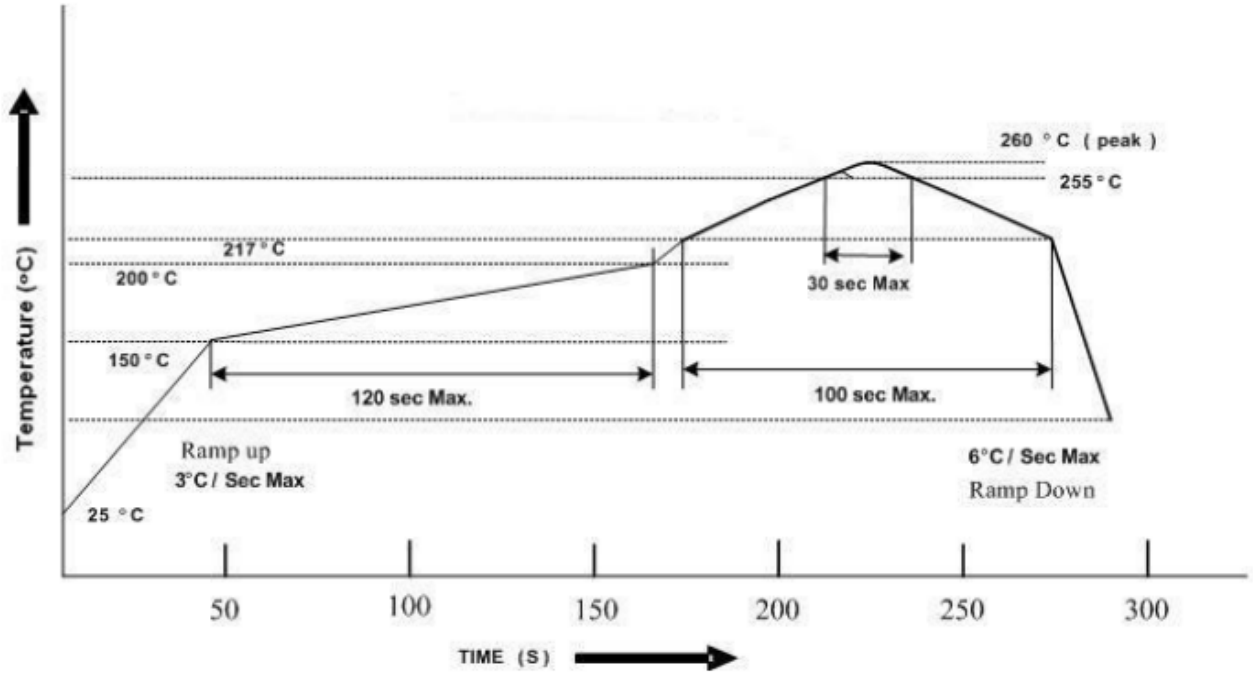
1、Soldering

Careful attention should be paid during soldering. When soldering, leave more then 3mm from solder joint to epoxy bulb, and soldering beyond the base of the tie bar is recommended.

Recommended soldering conditions:

Hand Soldering		DIP Soldering	
Temp. at tip of iron	300℃ Max. (30W Max.)	Preheat temp.	150℃ Max. (120 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max

wave profile：



2、Cleaning

2.1. Don’t be cleaned with ultrasonic. Recommended to be wiped with isopropyl alcohol or pure alcohol, wiping time should not be more than one minute. LED must be placed at room temperature for fifteen minutes before using. After cleaning, you must insure clean on the radiant surface. Otherwise, foreign objects can affect radiant color.

2.2. LED can’t be in contact with isoamyl acetate, trichloroethylene, acetone, sulfide, nitride, acid, alkali, salt. These matters can destroy LED.

3、Sealing

3.1. Sealing glue can't contain sodium ion, sulfide, because these matters can affect fluorescence powder poisoning.

3.2. When using normal sealing glue, recommended to be operated life for 168hrs under normal temperature.

4、Storage

4.1. Don't open the moisture proof bag before ready to use the LEDs.

4.2. The LEDs should be kept at 30℃ or less and 60%RH or less before opening the package. The max. storage period before opening the package is 1 year.

4.3. After opening the package, the LEDs should be kept at 30-35%RH or less, and it should be used within 3 days. If the LEDs should be kept at 30-35%RH or more, and it should be used within 4 hours.

4.4. If the LEDs be kept over the conditions of 20%, baking is required before mounting. Baking condition as below: 70±5℃ for 12 hours for bulk goods, 105±5℃ for 1 hour for roll goods.

4.5. The environment has no acid, alkali, corrosive gas, intensively shake and high magnetic field.

5、Static

5.1.Static and Peak surge voltage can destroy LED, Avoiding Instantaneous voltage when turn on or turn off the lights.

5.2. Please wear Anti-static wrist band, Anti-static glove, Anti-static shoes in the course of operation, and the equipment must be grounded.

6、Test

6.1. Customer must apply the current limiting resistor in the circuit so as to drive the LEDs within the rated current. Otherwise slight voltage shift maybe will cause big current change and burn out will happen.

6.2. Also, caution should be taken not to overload the LEDs with instantaneous high voltage at the turning ON and OFF of the circuit. Otherwise, The LEDs will be destroyed, testing methods as follows:

6.3. The reverse voltage mustn't exceed 5v when lighting on or testing the LED, otherwise, the LEDs will be damaged.

7、Else

Radiant color of LEDs has a little change with the current, recommended that LED is used in series and resistance, when lighting, please don't see directly radiant surface of LED, otherwise LED will burn eyes.