



SPECIFICATION

Customer Name					
Customer No.					
Product Description			5mm Transmissive Sensor		
Product Model			ORTR-9608		
Orient Confirm			Customer Confirm		
Approved by	Checked by	Prepared by	Approved by	Quality	Engineering
Linshixiu	Huanghaijun	Sushiheng			
Judge outcome:		OK	Judge outcome:		



静电敏感元件



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TEL: 0755-29681816 **URL: www.orient-opto.com**



1、 Features

- High reliability.
- Fast response time.
- High analytic.
- High sensitivity.
- Cut-off visible wavelength $\lambda P=940\text{nm}$.
- Pb free.
- This product itself will remain within RoHS compliant version.

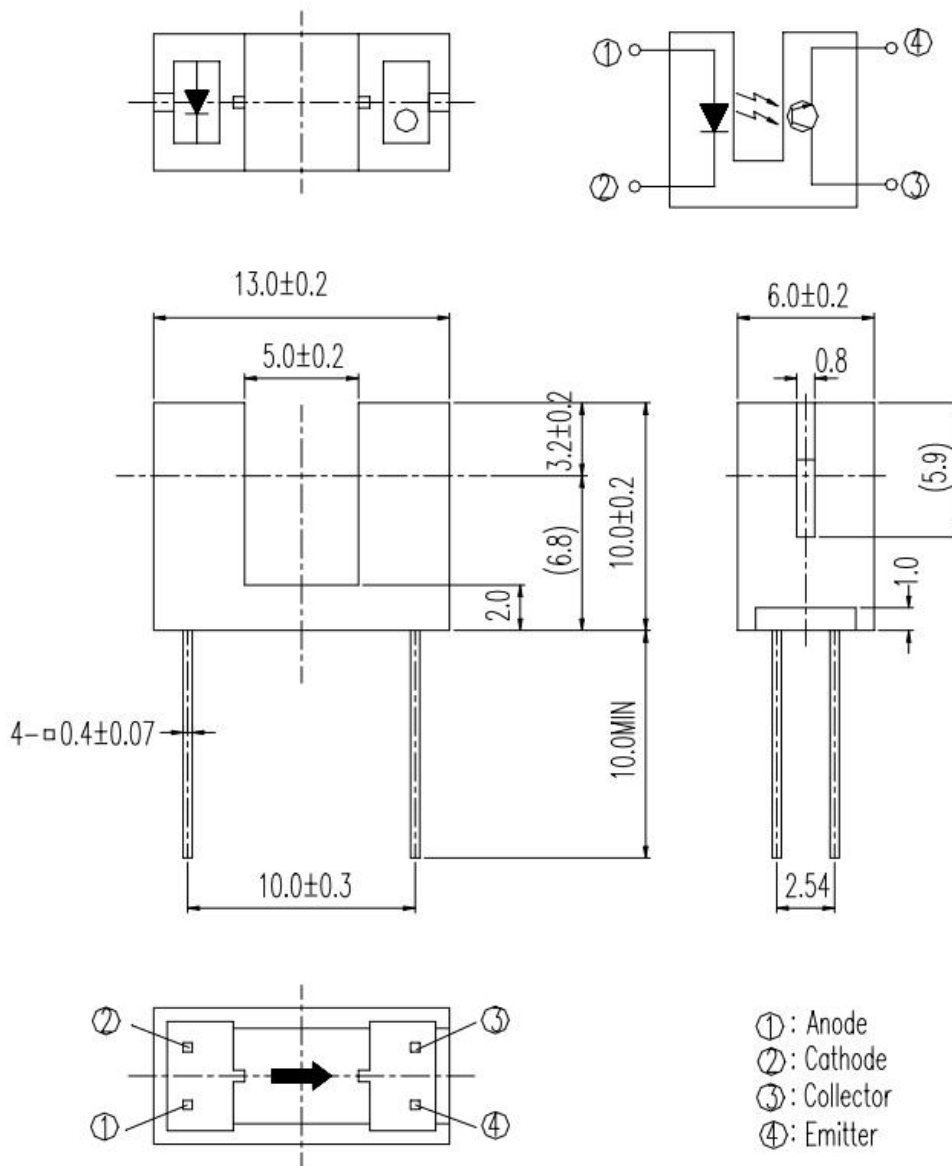
2、 Applications

- Mouse Copier.
- Switch Scanner.
- Non-contact Switching.
- Smart Appliances.

3、 Device Selection Guide

LED Part No	Chip Material	Resin Color
IR	GaAIAs	Water Clear
PT	Silicon	Water Clear

4、 Package Outline Dimensions



Notes:

- 1). Tolerance is ± 0.25 mm unless otherwise specified.
- 2). Specifications are subject to change without notice.

**5、 Absolute maximum ratings at Ta=25°C**

	Parameter	Symbol	Rating	Unit
Input	Power Dissipation	Pd	75	mW
	Reverse Voltage	VR	5	V
	Forward Current	IF	50	mA
	Peak Forward Current(*1)	IFP	1	A
Output	Collect Power Dissipation	Pc	75	mW
	Collect Current	Ic	20	mA
	Collector-Emitter Voltage	VCE	30	V
	Emitter-Collector Voltage	VEC	5	V
Operating Temperature Range		T _{opr}	-25~+85	°C
Storage Temperature Range		T _{stg}	-45~+85	°C
Wave Soldering Temperature		T _{sld}	Wave soldering, 3mm out of physical body, 260°C, ≤3S	

Notes:

*1Pulse width $\leq 100\mu\text{s}$, Duty cycle=1% $t_w=100\mu\text{sec}$, T=10 msec



6、Electrical-optical characteristics at Ta=25°C

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	VF1	IF=20mA		-	1.2 1.5 V
	Reverse Current	IR	VR=5V		-	- 10 μA
	Peak Wavelength	λ P	-	940	-	nm
Output	Dark Current	ICEO	VCE=20V,Ee=0mW/cm2		-	- 100 nA
	C-E Saturation Voltage	VCE(sat)	IC=0.5mA,Ee=10mW/cm2		-	- 0.4 V
	Collect Current	IC(ON)	VCE=5V,IF=20mA		0.5	- - mA
	Leakage Current	ICEOD			-	-
Response Time	Rise Time	Tr	VCE=5V,IC=1mA RL=1KΩ		-	15 - μ sec
	Fall Time	Tf			-	15

Notes:

*Forward voltage tolerance: ±0.1v

*Radiant intensity tolerance: ±10%

*wavelength tolerance: ±1.0nm

7.1、Typical Electro-Optical Characteristics Curves (IR)

Fig. 1 Forward Current vs. Ambient Temperature

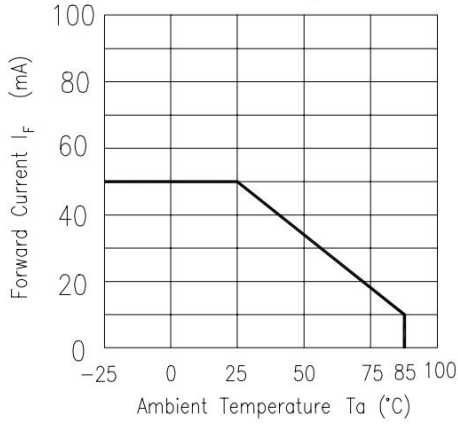


Fig. 2 Spectral Distribution

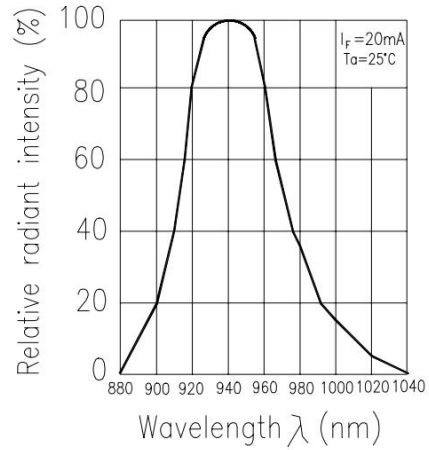


Fig. 3 Peak Emission Wavelength vs. Ambient Temperature

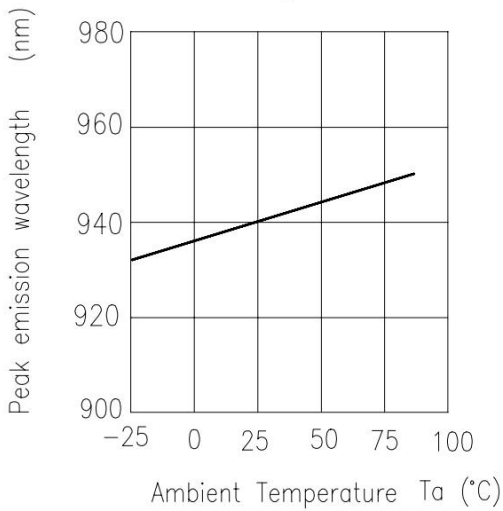


Fig. 4 Forward Current vs. Forward Voltage

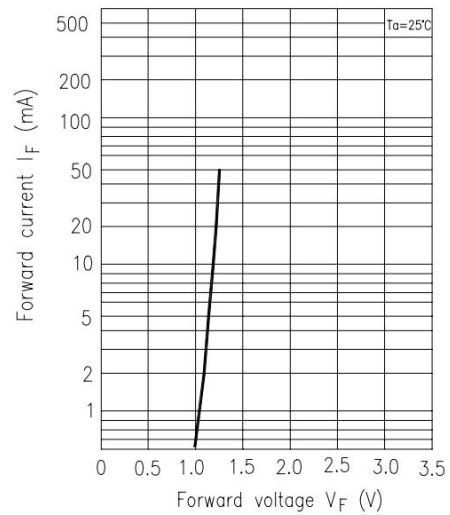


Fig. 5 Forward Voltage vs. Ambient Temperature

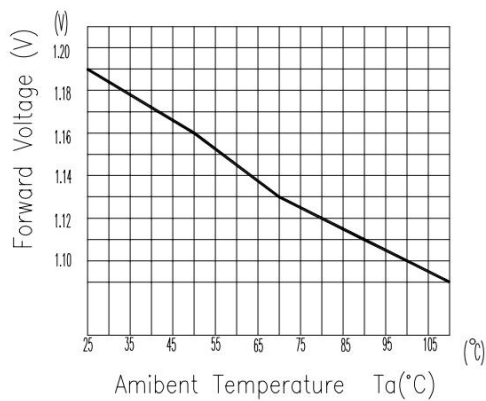
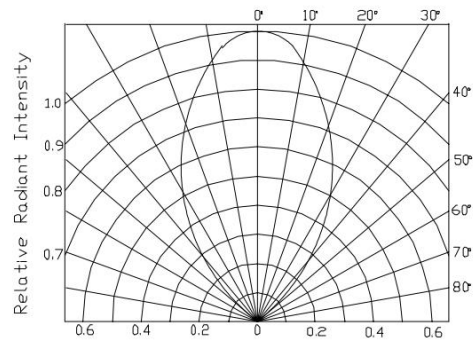


Fig. 6 Relative Radiant Intensity vs. Angular Displacement



7.2、 Typical Electro-Optical Characteristics Curves (PT)

Fig.1 Collector Power Dissipation vs. Ambient Temperature

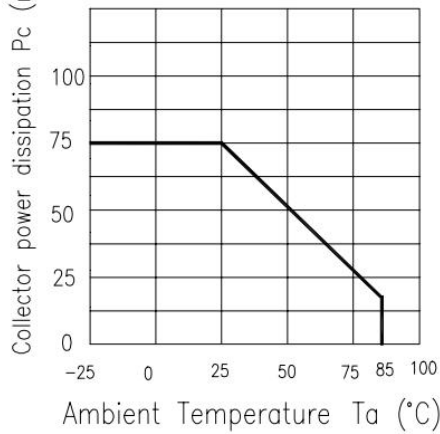


Fig.2 Collector Dark Current vs. Ambient Temperature

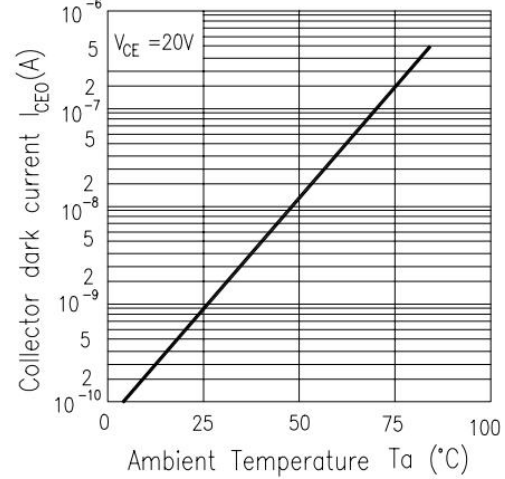


Fig.3 Spectral Sensitivity

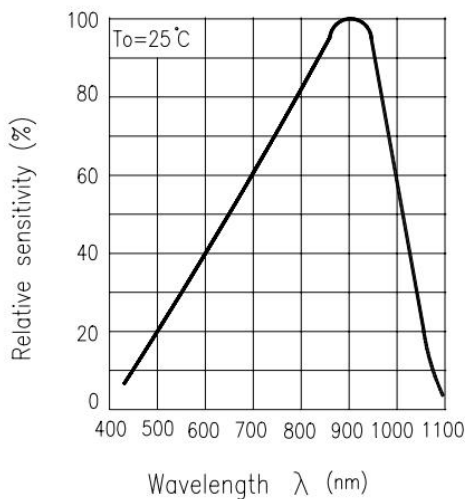
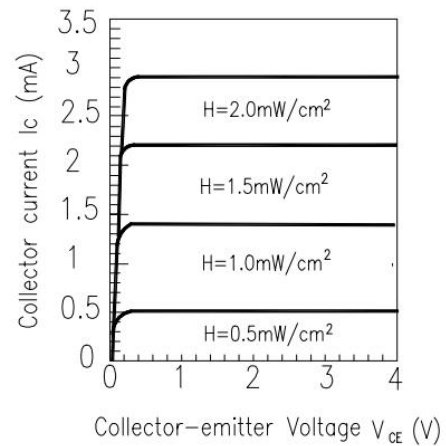


Fig.4 Collector Current vs. Collector-emitter Voltage



7.3、 Typical Characteristics For ITR

Fig.1 Relative Collector Current vs. Shield Distance(1)

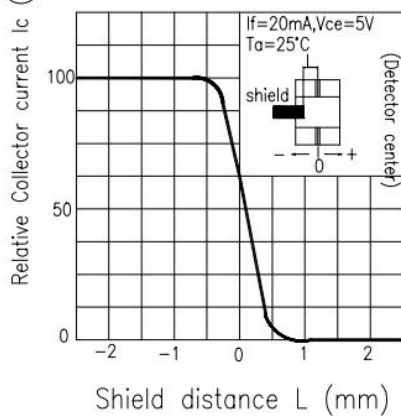
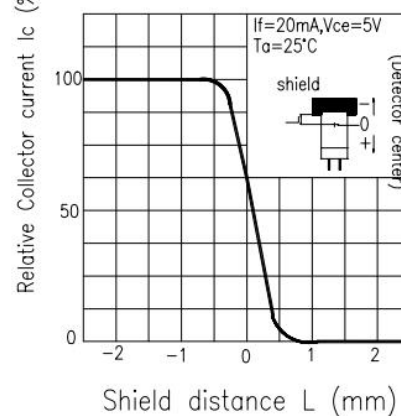


Fig.2 Relative Collector Current vs. Shield Distance(2)

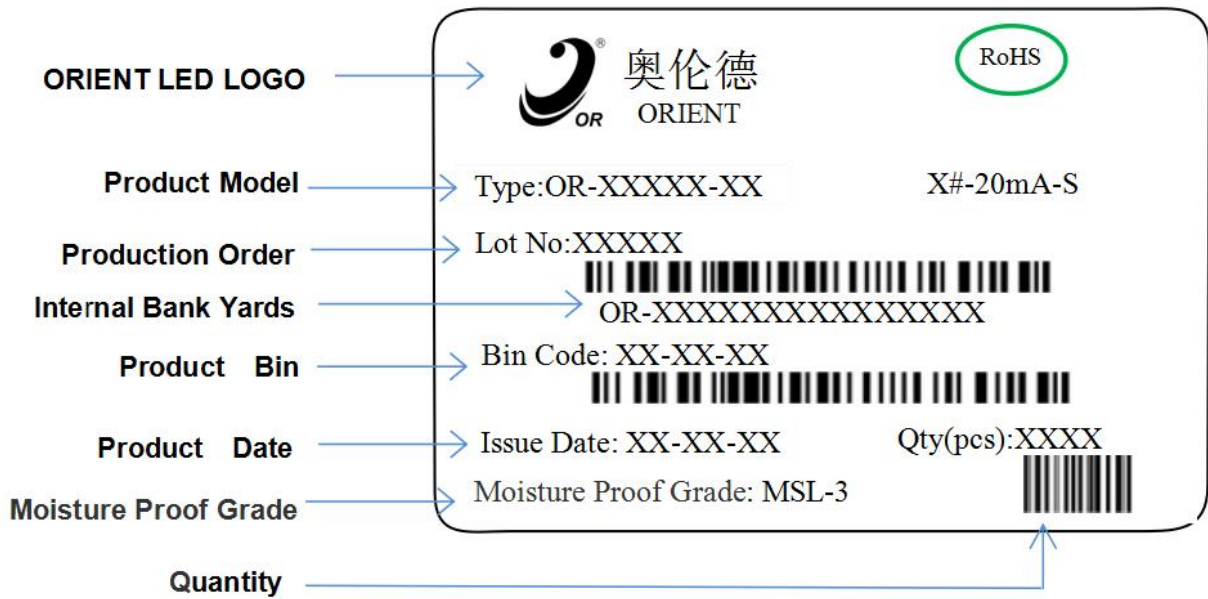




8、Packaging Specification

(1) In bags: 150PCS/1Bag, 4Bags/1Box, 10Boxes/1Carton

9、Label description



10、Precautions for use

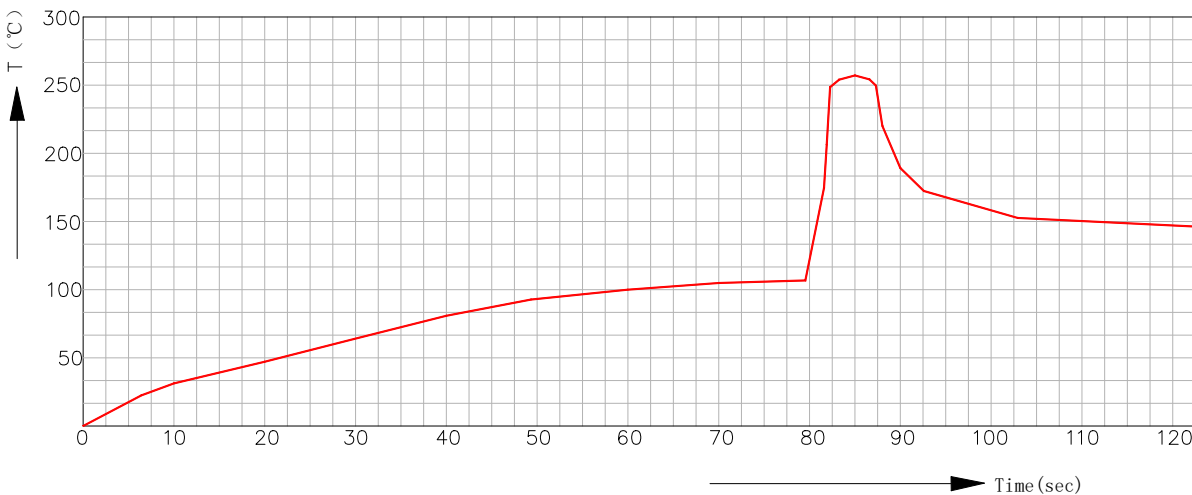
1、Soldering

Careful attention should be paid during soldering. When soldering, leave more than 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°C Max. (30W Max.)	Preheat temp.	100°C Max. (60 sec Max.)
Soldering time	3 sec Max.	Bath temp. & time	260 Max., 5 sec Max
Distance	3mm Min. (From solder joint to epoxy bulb)	Distance	3mm Min. (From solder joint to epoxy bulb)

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 not be in contact with isoamyl acetate, trichloroethylene, acetone, sulfide, nitride, acid, alkali, salt. These matter can destroy LED.

3、Sealing

3.1. Sealing glue can not contain sodium ion, sulfide, because these matter 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°C 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°C for 12 hrs for bulk goods, 105±5°C for 1 hrs for roll goods.
- 4.5. The environment have 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 have 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.