

## Opto Interrupter

## ITR1204SR10A/TR

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### Features

- Fast response time
- Miniature and thin
- High sensitivity
- Reflective with phototransistor output
- Cut-off visible wavelength
- This product itself will remain within RoHS compliant version.

### Descriptions

The SMD type ITR1204SR10A/TR consists of an infrared emitting diode and an silicon phototransistor. The phototransistor receives radiation from the IR only. This is the normal situation. But when a reflecting object close to ITR, phototransistor receives the reflecting radiation and the different distance have different light current.

### Applications

- Printer
- Switch Scanner
- Non-contact Switching

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### Absolute Maximum Ratings (Ta=25 )

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25 Free Air Temperature	Pd	75	mW
	Reverse Voltage	V <sub>R</sub>	6	V
	Forward Current	I <sub>F</sub>	50	mA
Output	Collector Power Dissipation	P <sub>C</sub>	75	mW
	Collector Current	I <sub>C</sub>	20	mA
	Collector-Emitter Voltage	B V <sub>CEO</sub>	30	V
	Emitter-Collector Voltage	B V <sub>ECO</sub>	5	V
Operating Temperature		T <sub>opr</sub>	-25~+85	
Storage Temperature		T <sub>stg</sub>	-40~+100	
Lead Soldering Temperature (*1)		T <sub>sol</sub>	260	

(\*1) t 5 Sec

### Electro-Optical Characteristics (Ta=25 )

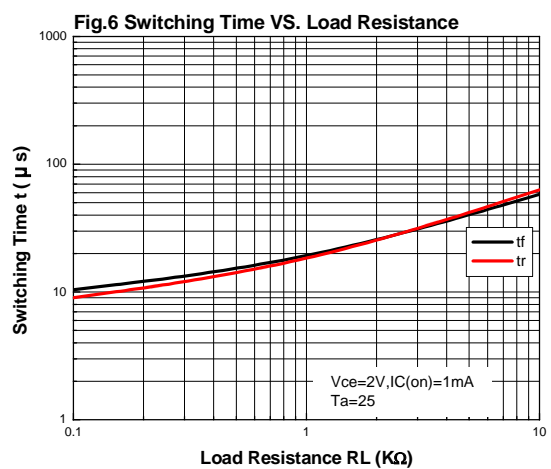
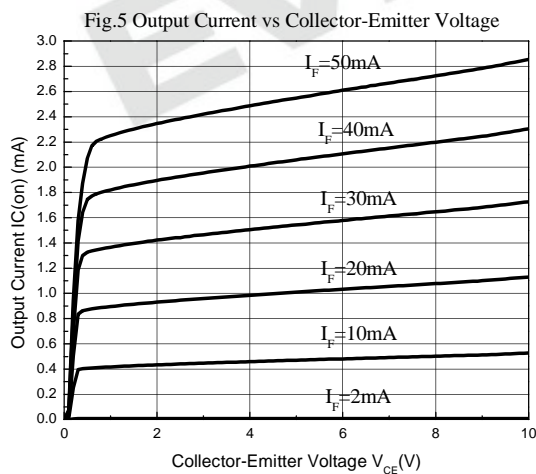
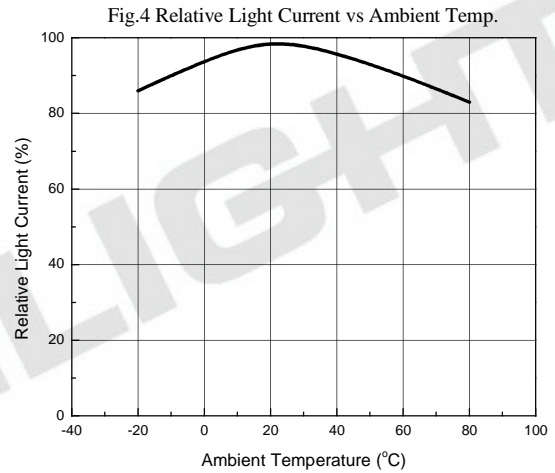
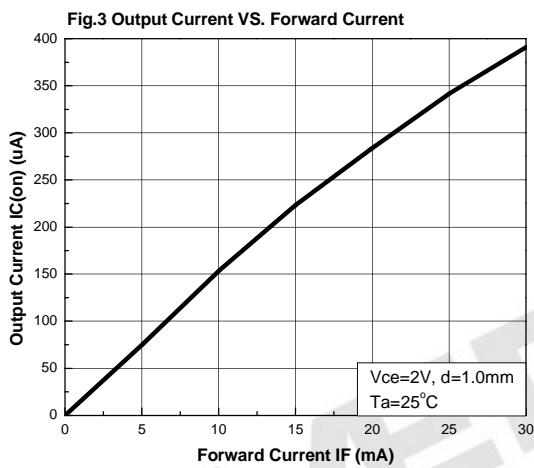
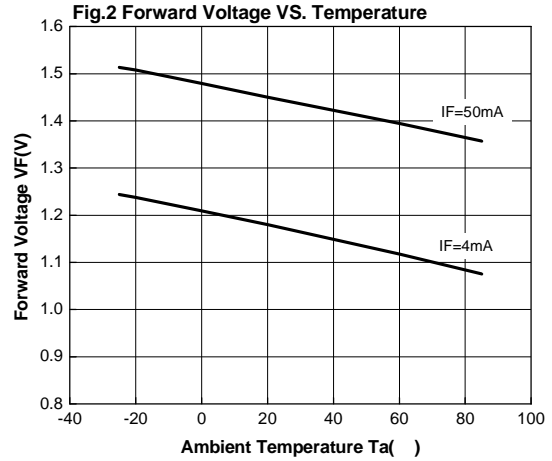
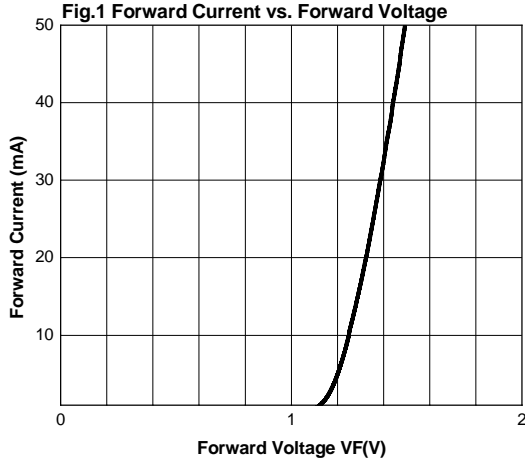
Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V <sub>F</sub>	-	1.25	1.5	V	I <sub>F</sub> =4mA
	Reverse Current	I <sub>R</sub>	-	-	10	μA	V <sub>R</sub> =6V
	Peak Wavelength	λ <sub>P</sub>	-	940	-	nm	I <sub>F</sub> =20mA
Output	Dark Current	I <sub>CEO</sub>	-	-	0.1	uA	V <sub>CE</sub> =10V
Transfer Characteristics	Collect Current	I <sub>C(ON)</sub>	60	-	130	μA	V <sub>CE</sub> =2V, I <sub>F</sub> =4mA
	Operating Dark Current*	I <sub>CEOD</sub>			1	μA	V <sub>CE</sub> =2V, I <sub>F</sub> =2mA
	Rise Time	T <sub>r</sub>	-	15	-	μs	V <sub>CE</sub> =2V
	Fall Time	T <sub>f</sub>	-	15	-	μs	I <sub>C</sub> =0.1mA R <sub>L</sub> =1000

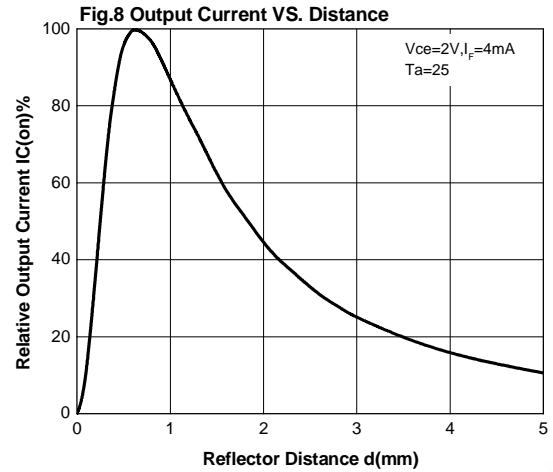
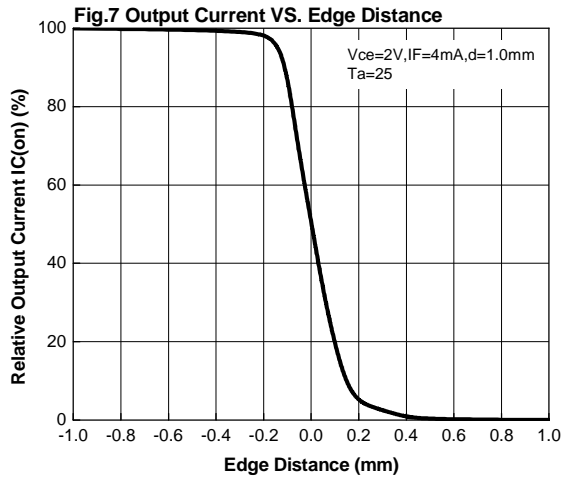
\*Operating dark current may be affected by surrounding situation.

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### Opto Characteristic Curves



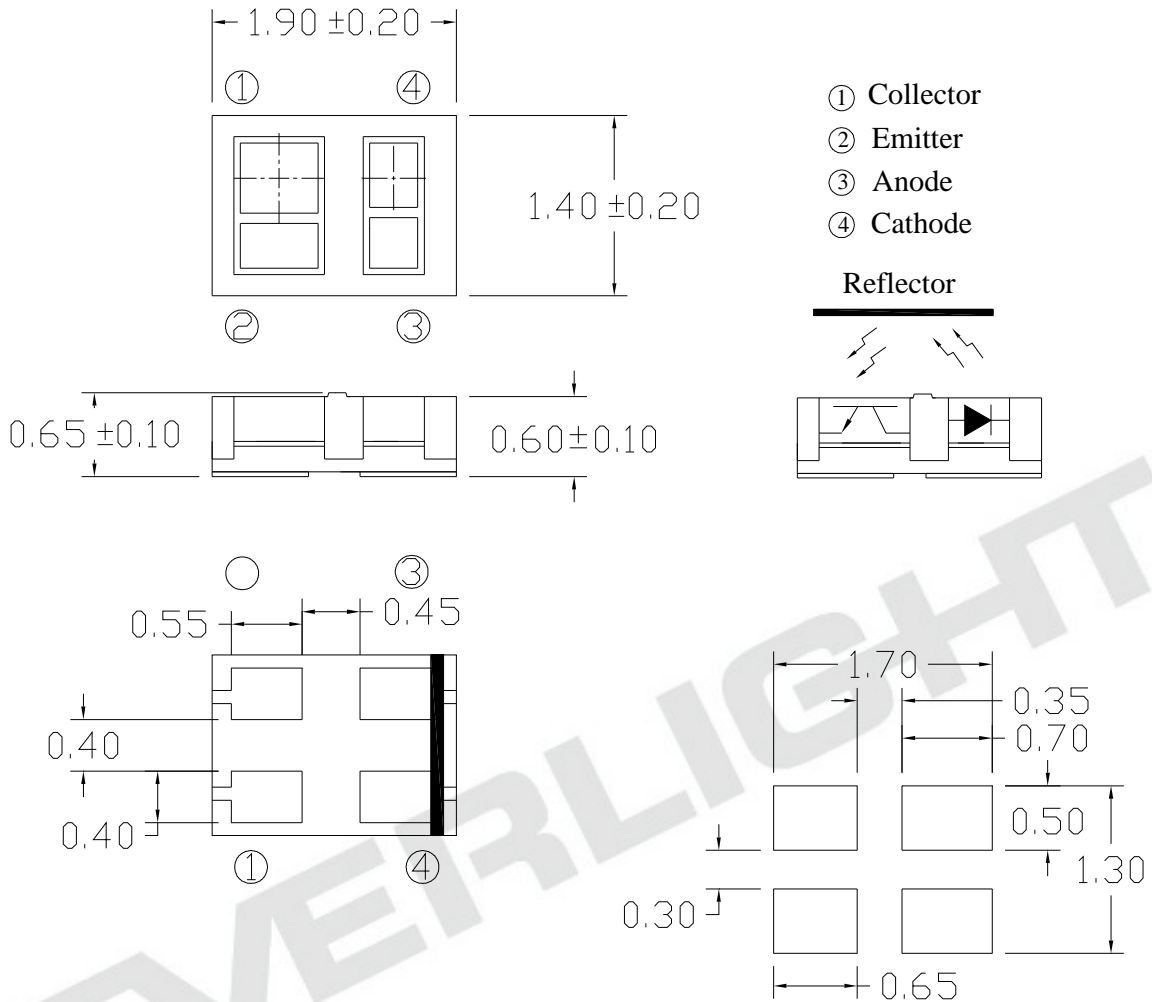


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### Package Dimensions



### Recommended Soldering Pattern

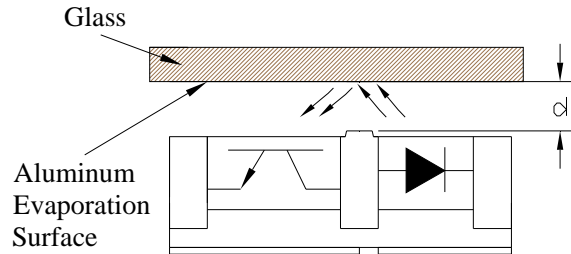
#### Notes:

1. All dimensions are in millimeters
2. Tolerances unless dimensions  $\pm 0.2\text{mm}$
3. Lead spacing is measured where the lead emerge from the package

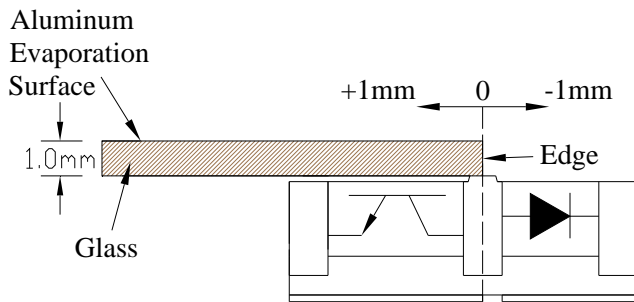
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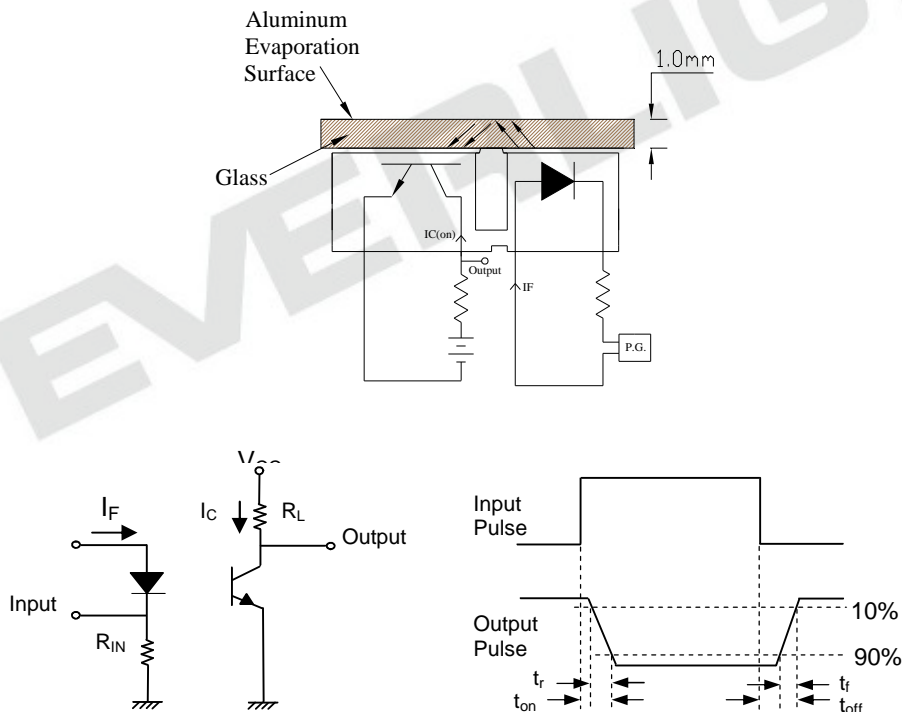
### Measuring Specification For Reflector Response



### Measuring Specification For Edge Response



### Measuring Circuit For Response Time



### Precautions For Use

#### 1. Over-current-proof

Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change ( Burn out will happen ).

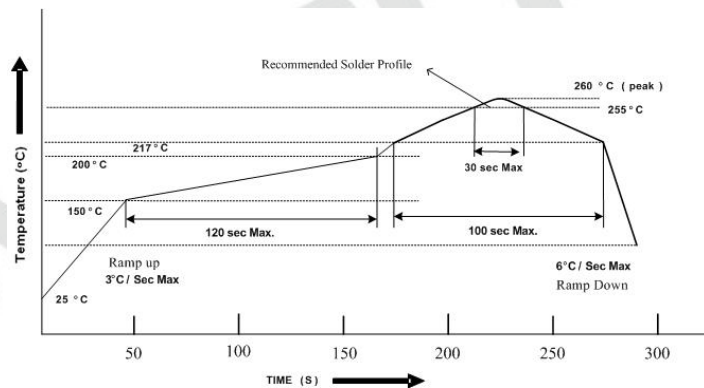
#### 2. Storage(This part is compliant to JEDEC Level 3.)

- 2.1 Do not open moisture proof bag before the products are ready to use.
- 2.2 Before opening the package, the LEDs should be kept at 30% or less and 90%RH or less.
- 2.3 The LEDs should be used within a year.
- 2.4 After opening the package, the LEDs should be kept at 30% or less and 60%RH or less.
- 2.5 The LEDs should be used within 168 hours (7 days) after opening the package.
- 2.6 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment :  $60 \pm 5$  , 48hours.

#### 3. Soldering Condition

##### 3.1 Pb-free solder temperature profile



3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

3.4 After soldering, do not warp the circuit board.

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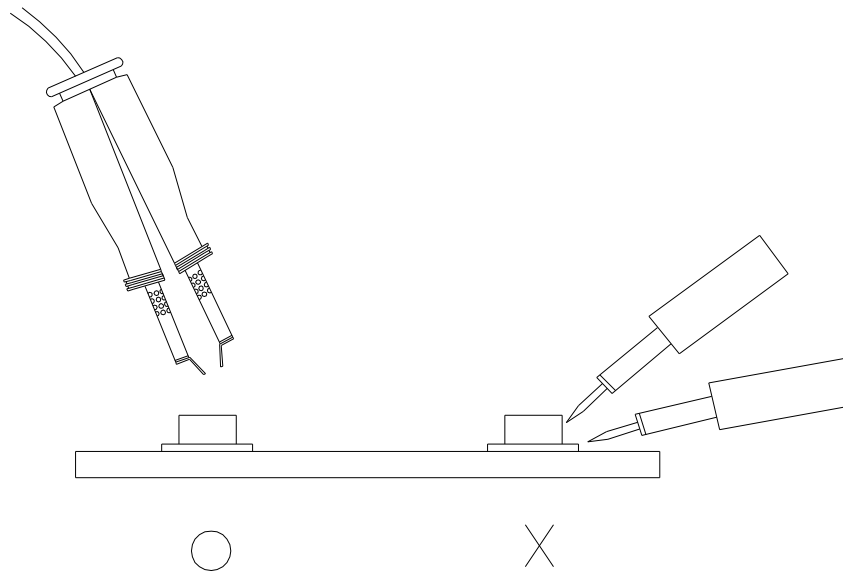
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### 4.Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350 for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

### 5.Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

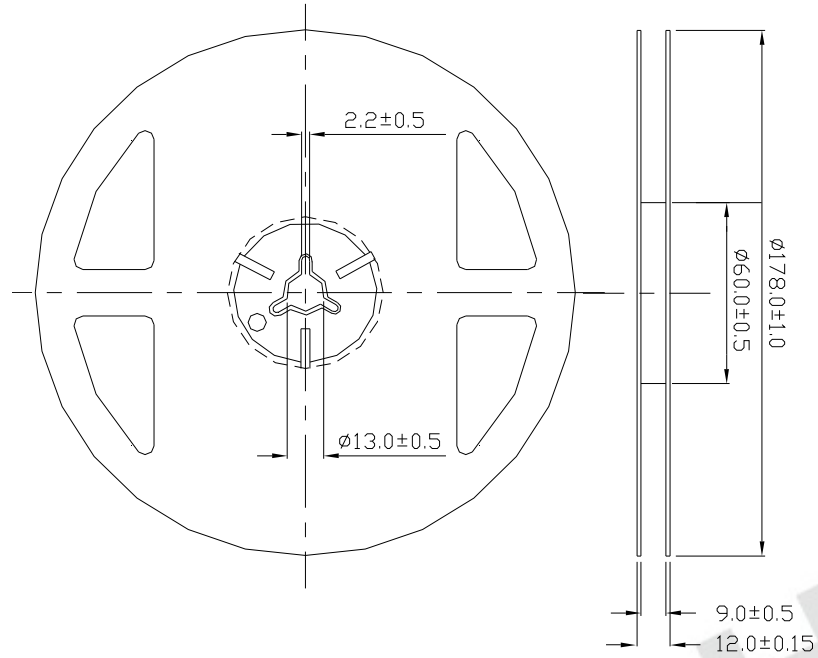




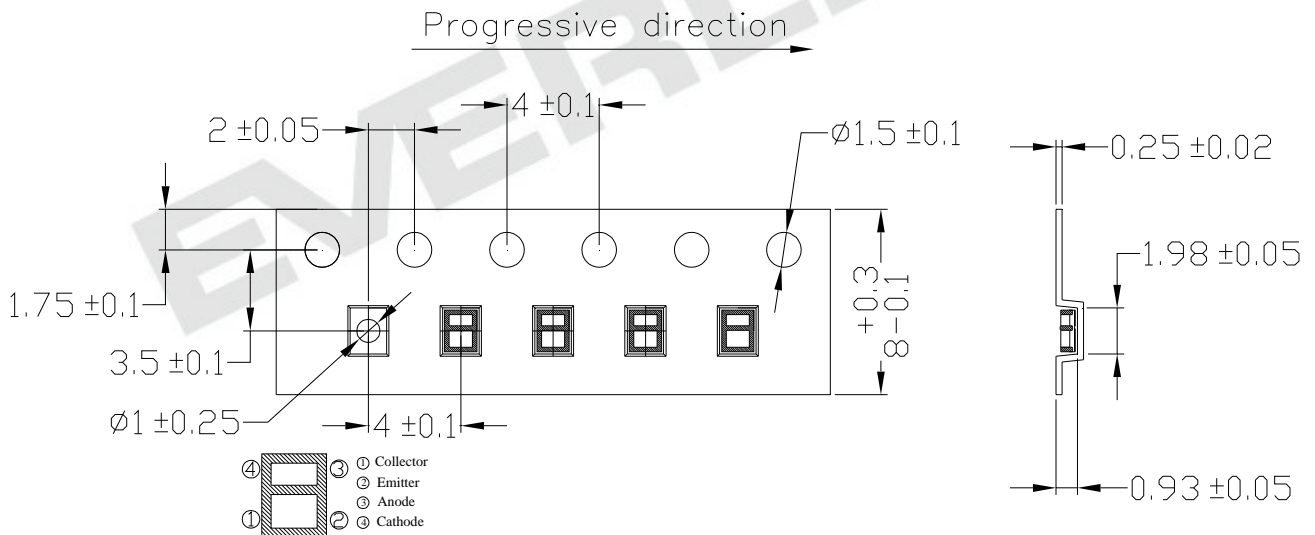
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### Package Dimensions



### Taping Dimension



Unit = mm

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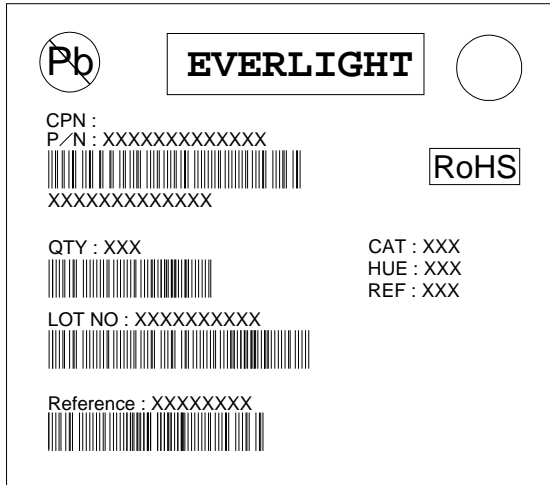
## ITR1204SR10A/TR

### Packing Quantity Specification

1.2000PCS/1Bag , 10Bags/1Box

2.10Boxes/1Carton

### Label Form Specification



CPN: Customer's Production Number

P/N : Production Number

QTY: Packing Quantity

CAT: Ranks

HUE: Peak Wavelength

REF: Reference

LOT No: Lot Number

MADE IN TAIWAN: Production Place

### Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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