

**■ Features**

- Side-looking package
- Fast response time
- Miniature and thin
- High sensitivity
- Cut-off visible wavelength

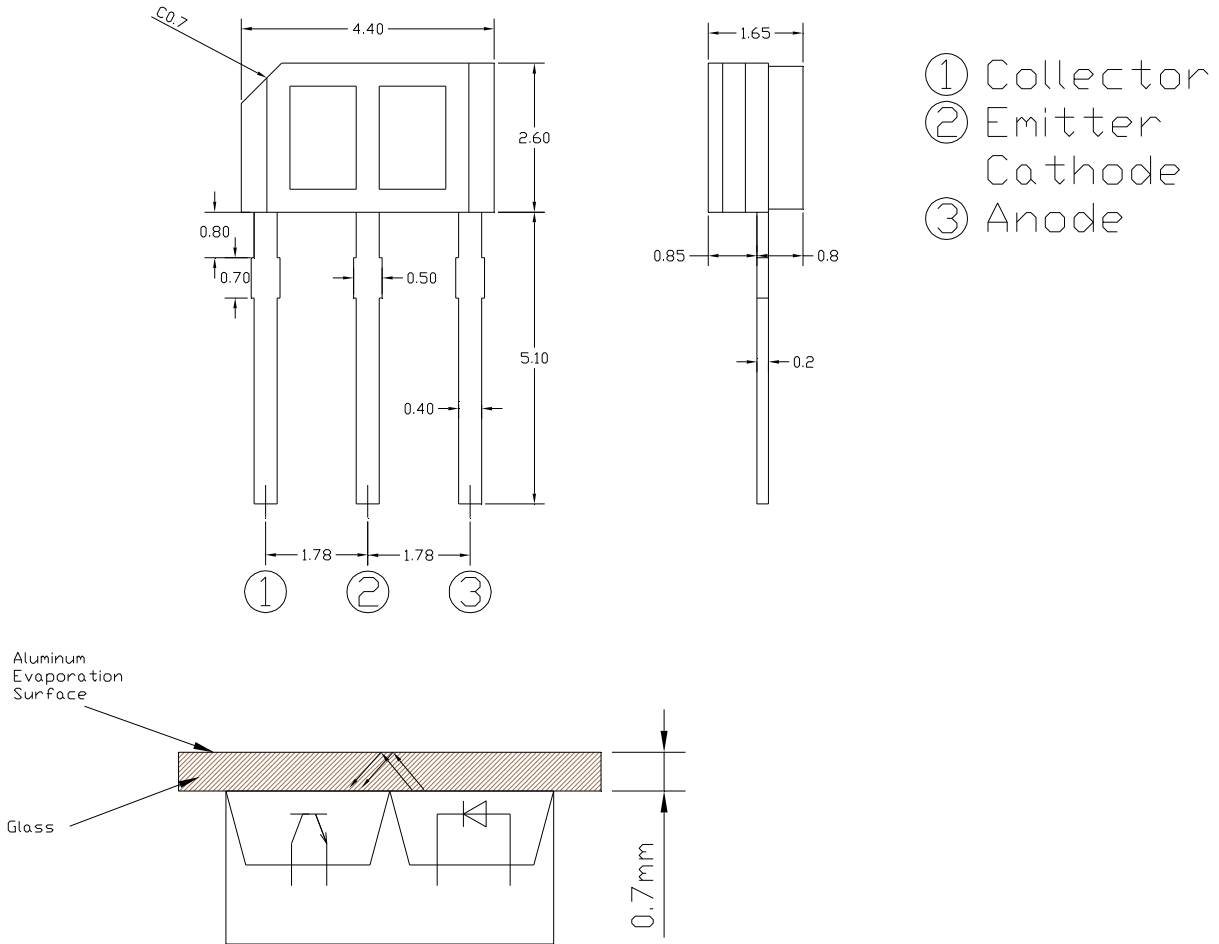
**■ Descriptions**

The dip type **ITR20904** consists of an infrared emitting diode and an silicon phototransistor, encased side-by-side on converging optical axis in a black housing. 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

### ■ Package Dimensions



**Notes:** 1. All dimensions are in millimeters  
2. Tolerances:  $\pm 0.15\text{mm}$

**■ Absolute Maximum Ratings (Ta=25°C)**

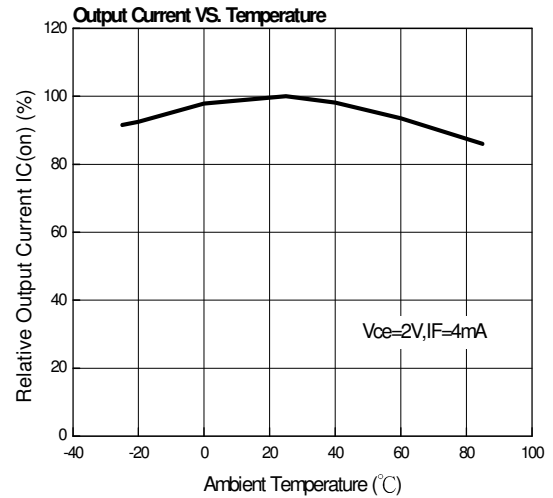
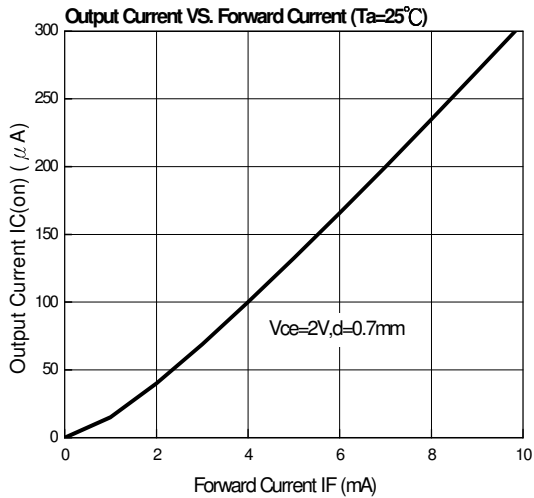
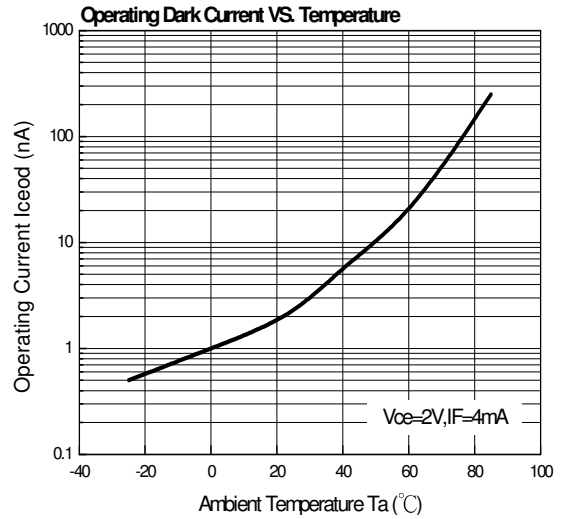
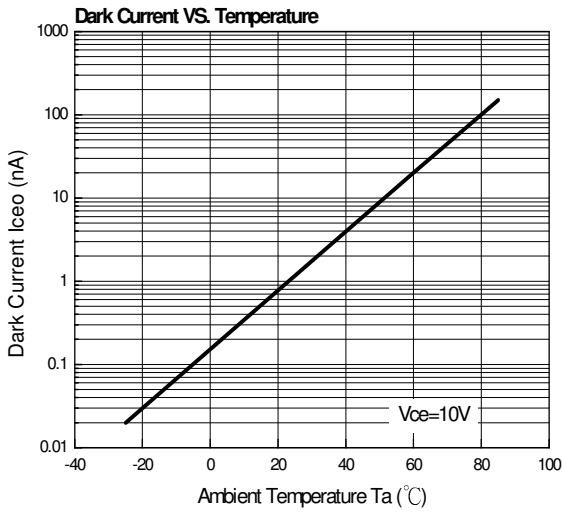
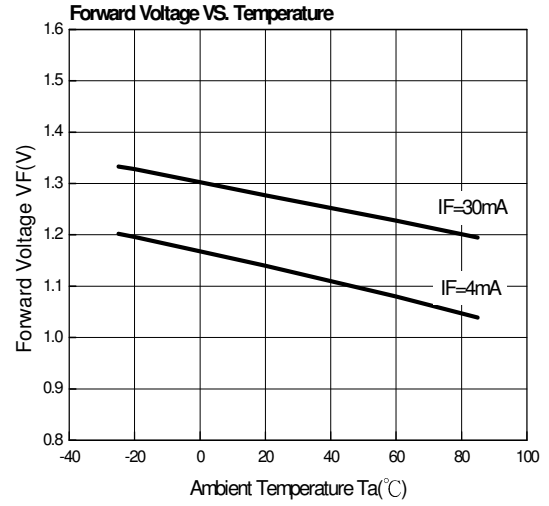
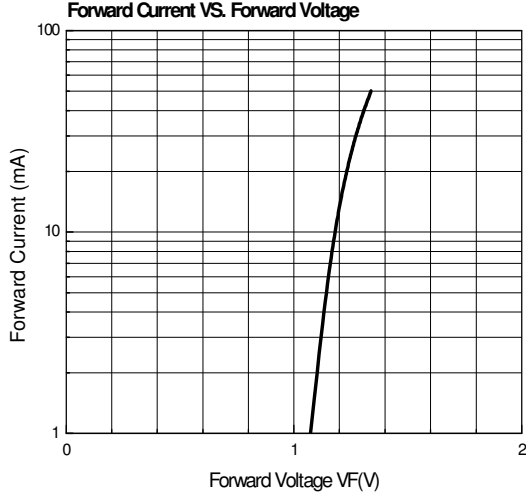
Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	Pd	75	mW
	Reverse Voltage	V <sub>R</sub>	5	V
	Forward Current	I <sub>F</sub>	30	mA
Output	Collector Power Dissipation	P <sub>C</sub>	25	mW
	Collector Current	I <sub>C</sub>	10	mA
	Collector-Emitter Voltage	B V <sub>CEO</sub>	30	V
	Emitter-Collector Voltage	B V <sub>ECO</sub>	5	V
Operating Temperature		T <sub>opr</sub>	-25~+85	°C
Storage Temperature		T <sub>stg</sub>	-30~+85	°C
Lead Soldering Temperature*		T <sub>sol</sub>	260	°C

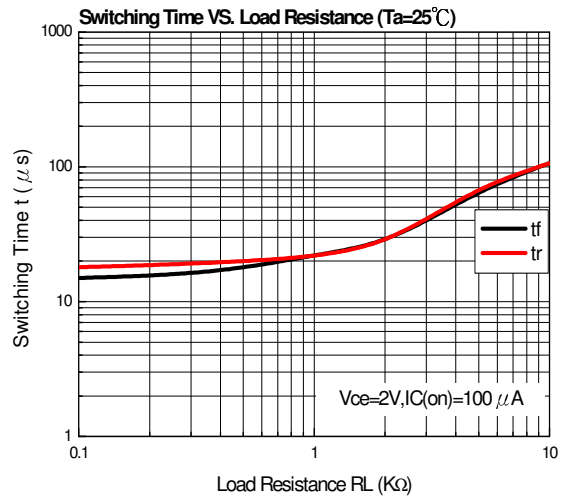
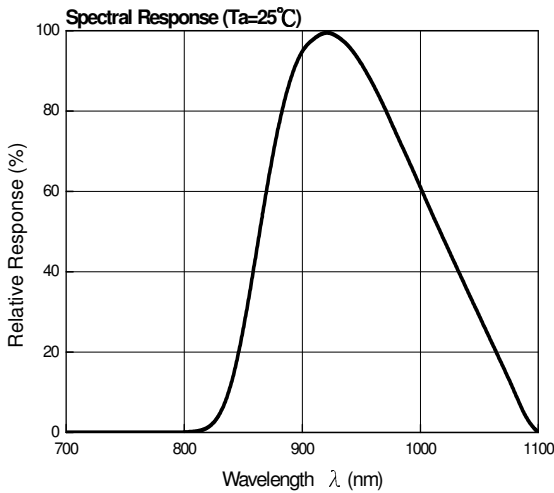
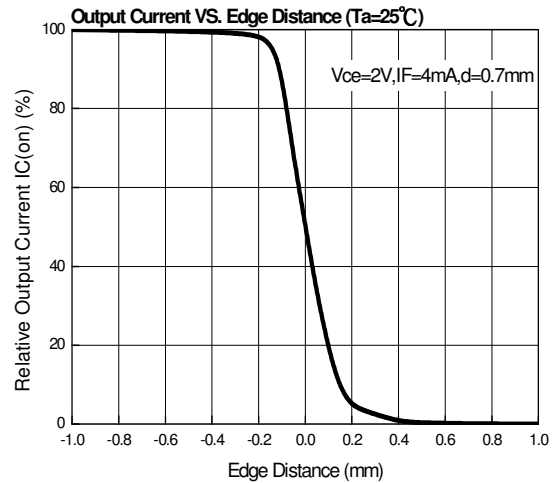
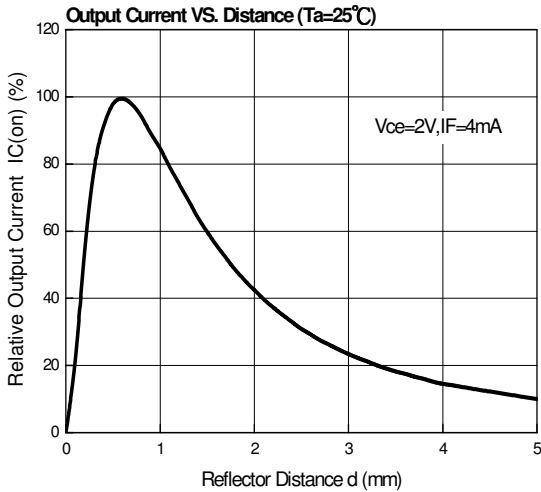
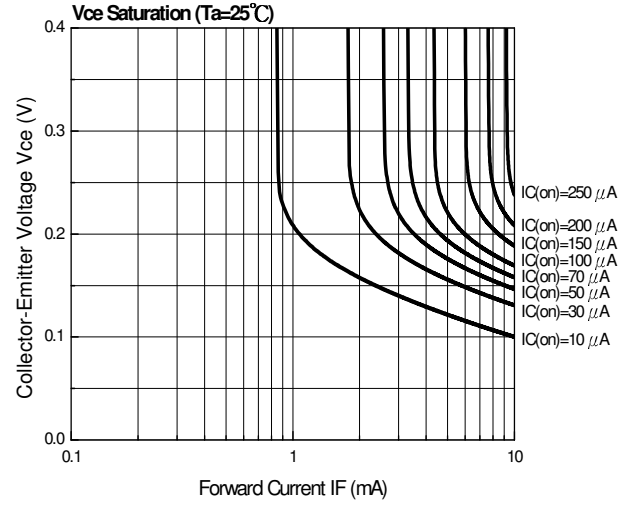
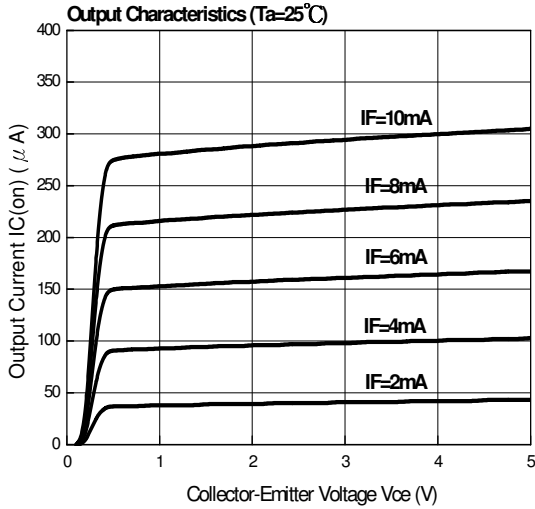
\* t ≤ 10 Sec and at least 1.5mm from body

**■ Electro-Optical Characteristics (Ta=25°C)**

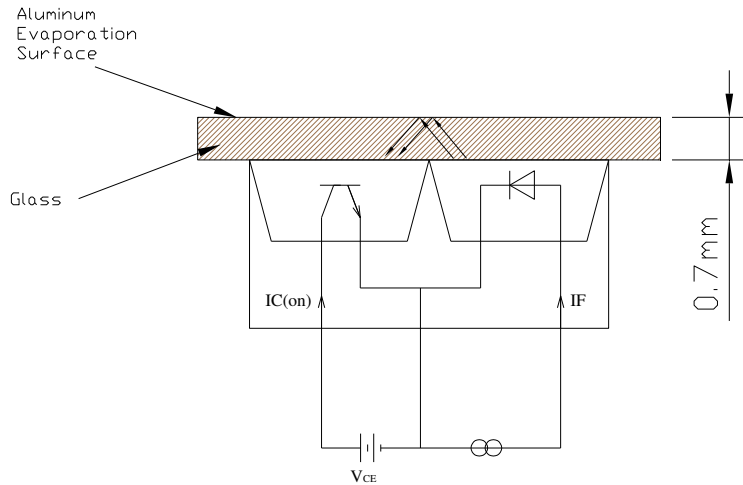
Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input	Forward Voltage	V <sub>F</sub>	---	---	1.4	V	I <sub>F</sub> =4mA
	Reverse Current	I <sub>R</sub>	---	---	10	μA	V <sub>R</sub> =6V
	Peak Wavelength	λ <sub>p</sub>	---	940	---	nm	I <sub>F</sub> =4mA
Output	Dark Current	I <sub>CEO</sub>	---	---	0.2	μA	V <sub>CE</sub> =10V
Transfer Characteristics	Collector Current	I <sub>C(ON)</sub>	50	---	150	μA	V <sub>CE</sub> =2V, I <sub>F</sub> =4mA
	Operating Dark Current	I <sub>CEOD</sub>	---	---	0.2	μA	V <sub>CE</sub> =2V, I <sub>F</sub> =4mA
	Rise time	t <sub>r</sub>	---	20	---	μs	V <sub>CE</sub> =2V I <sub>C</sub> =100μA
	Fall time	t <sub>f</sub>	---	20	---	μs	R <sub>L</sub> =1KΩ

### Typical Electro-Optical Characteristics Curves

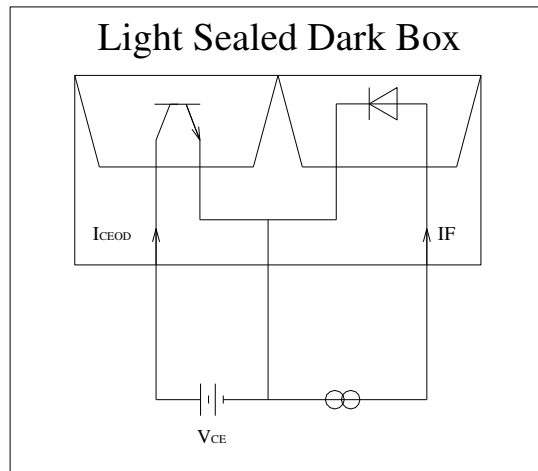




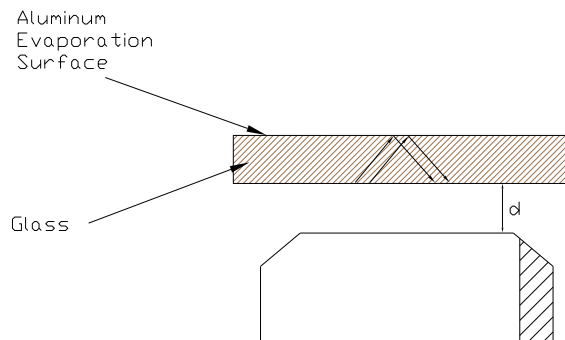
### Measuring Specification For Output Current



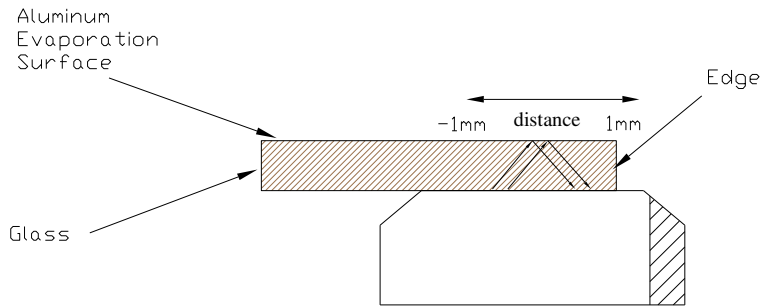
### Measuring Circuit For Operating Dark Current



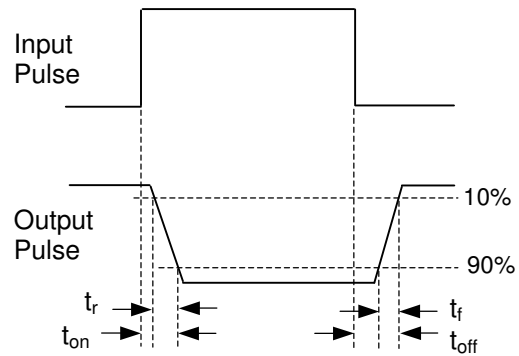
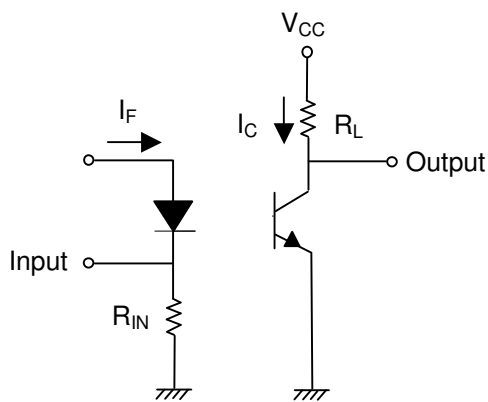
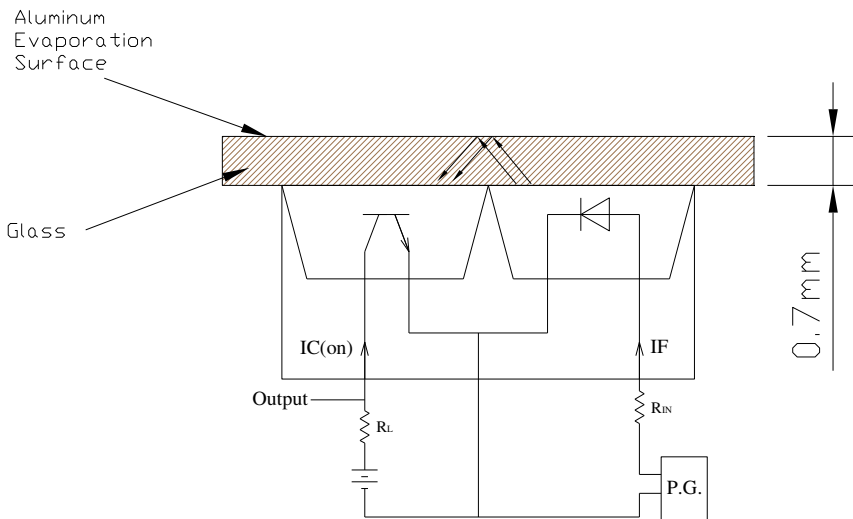
### Measuring Specification For Reflector Response



### Measuring Specification For Edge Response



### Measuring Circuit For Response Time





LIGHTING FOREVER

# Side-Looking Reflective Sensor

**ITR20904**

## Packing Quantity Specification

- 1.1000PCS/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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