

## Photointerrupters(Transmissive)

KODENSHI

SG - 222V

The SG - 222V photointerrupter high - performance standard type, combines high - output GaAs IRED with high sensitive phototransistor. Compact size.

## FEATURES

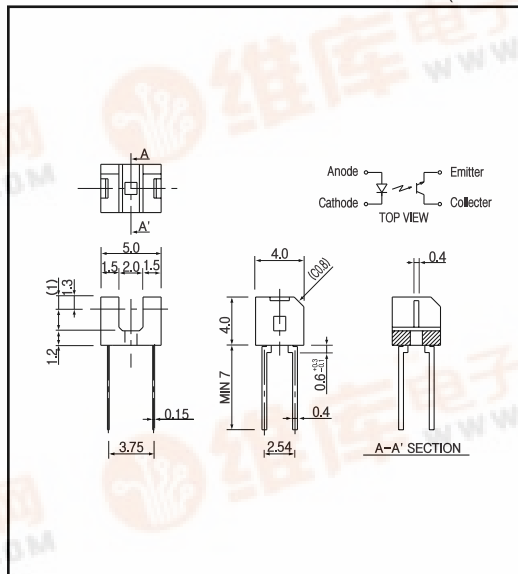
- PWB direct mount type
- GAP : 2.0mm
- Low - boy type( installation height : 4.0mm )

## APPLICATIONS

- Floppy disk drives
- Mini printers
- Handy copiers
- Car stereo
- Scanners

## DIMENSIONS

(Unit : mm)



## MAXIMUM RATINGS

(Ta=25 °C)

| Item              | Symbol                      | Rating            | Unit         |
|-------------------|-----------------------------|-------------------|--------------|
| Input             | Power dissipation           | P <sub>D</sub>    | 75           |
|                   | Forward current             | I <sub>F</sub>    | 50           |
|                   | Reverse voltage             | V <sub>R</sub>    | 5            |
|                   | Pulse forward current *1    | I <sub>FP</sub>   | 0.5          |
| Output            | Collector power dissipation | P <sub>C</sub>    | 75           |
|                   | Collector current           | I <sub>C</sub>    | 20           |
|                   | C - E voltage               | V <sub>CEO</sub>  | 30           |
|                   | E - C voltage               | V <sub>ECO</sub>  | 5            |
| Operating temp.*2 |                             | T <sub>opr.</sub> | - 20 ~ + 85  |
| Storage temp.*2   |                             | T <sub>stg.</sub> | - 30 ~ + 100 |
| Soldering temp.*3 |                             | T <sub>sol.</sub> | 260          |

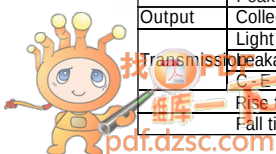
\*1. pulse width : t w 100 μsec. period : T=10msec.

\*2. No icebound or dew \*3. For MAX.5 seconds at the position of 1mm from the package

## ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25 °C)

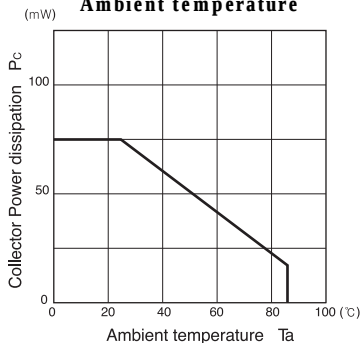
| Item   | Symbol                        | Conditions                                              | Min. | Typ. | Max. | Unit. |
|--------|-------------------------------|---------------------------------------------------------|------|------|------|-------|
| Input  | Forward voltage               | I <sub>F</sub> = 20mA                                   |      | 1.2  | 1.4  | V     |
|        | Reverse current               | V <sub>R</sub> = 5V                                     |      |      | 10   | μA    |
|        | Peak wavelength               | I <sub>F</sub> = 20mA                                   |      | 940  |      | nm    |
| Output | Collector dark current        | V <sub>CE</sub> = 10V                                   |      |      | 100  | nA    |
|        | Light current                 | I <sub>F</sub> = 20mA, V <sub>E</sub> = 5V(Non-shading) | 0.5  |      | 3    | mA    |
|        | Transmittance leakage current | I <sub>F</sub> = 10mA, V <sub>E</sub> = 5V(shading)     |      | 0.5  | 10   | μA    |
|        | C - E saturation voltage      | I <sub>F</sub> = 10mA, I <sub>C</sub> = 0.03mA          |      |      | 0.4  | V     |
|        | Rise time                     | V <sub>CC</sub> = 5V, I <sub>C</sub> = 0.1mA, R = 1kΩ   |      | 50   |      | μsec. |
|        | Fall time                     |                                                         |      | 50   |      | μsec. |



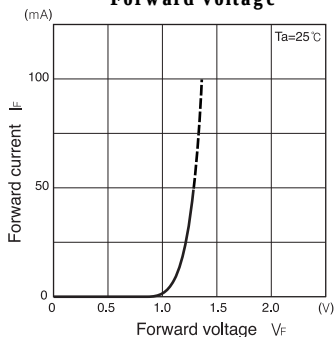
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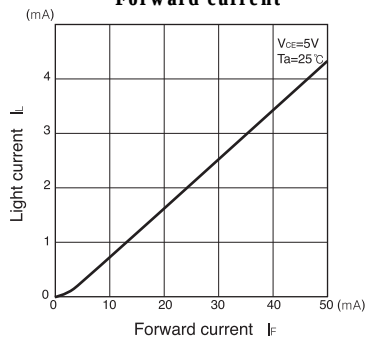
**Collector power dissipation Vs. Ambient temperature**



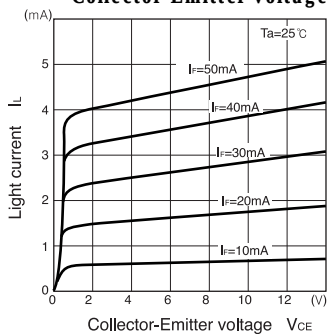
**Forward current Vs. Forward voltage**



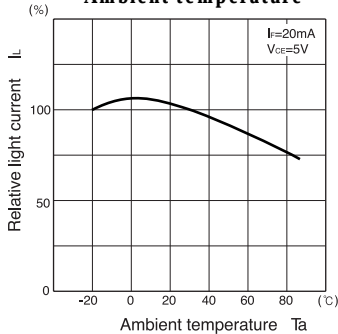
**Light current Vs. Forward current**



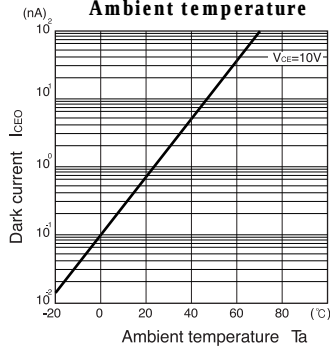
**Light current Vs. Collector-Emitter voltage**



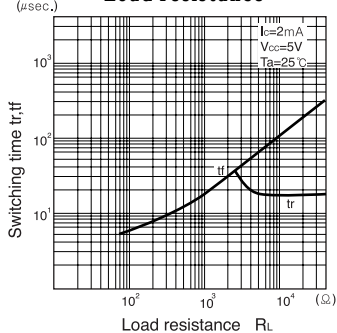
**Relative light current Vs. Ambient temperature**



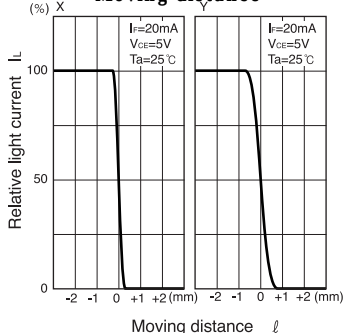
**Dark current Vs. Ambient temperature**



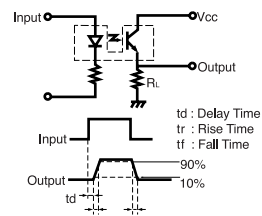
**Switching time Vs. Load resistance**



**Relative light current Vs. Moving distance**



**Switching time measurement circuit**



**Method of measuring position detection characteristic**

