## Photointerrupters(Reflective)

# SG - 103

The SG - 103 reflective sensor for paper sensing combine high - output GaAs IRED with high sensitivity phototransistor. It is most applicable to paper sensor.

### FEATURES

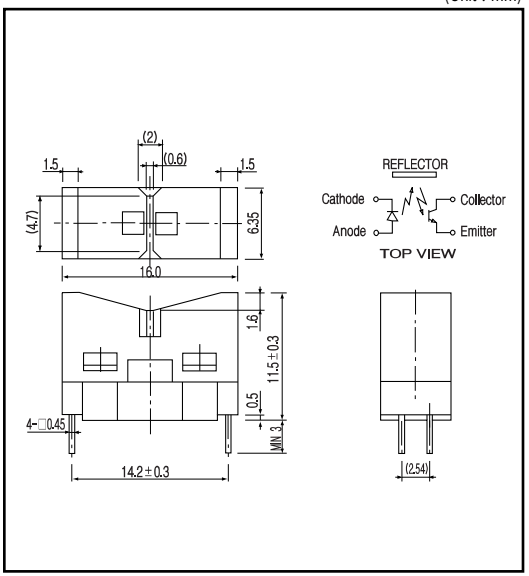
- High performance
- High - speed response
- Dust proof

### APPLICATIONS

- Copiers
- Facsimiles
- Edge sensors

### DIMENSIONS

(Unit : mm)




### MAXIMUM RATINGS

(Ta=25°C)

| Item | | Symbol | Rating | Unit |
|---|---|---|---|---|
| Input | Power dissipation | $P_D$ | 100 | mW |
| | Reverse voltage | $V_R$ | 5 | V |
| | Forward current | $I_F$ | 60 | mA |
| | Pulse forward current *1 | $I_{FP}$ | 1 | A |
| Output | Collector power dissipation | $P_C$ | 100 | mW |
| | Collector current | $I_C$ | 40 | mA |
| | C - E voltage | $V_{CEO}$ | 30 | V |
| | E - C voltage | $V_{ECO}$ | 5 | V |
| Operating temp. | | Topr. | - 20~ +85 | °C |
| Storage temp. | | Tstg | - 30~ +85 | °C |
| Soldering temp.*2 | | Tsol. | 240 | °C |

*1. t w≦100 μsec. period : T=10msec.
*2. For MAX. 5 seconds at the position of 2mm from the package

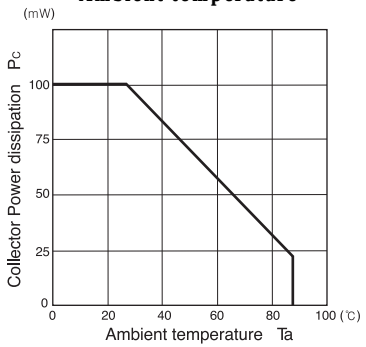
### ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25°C)

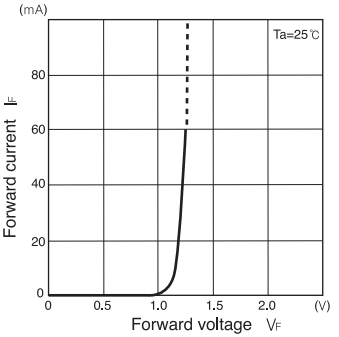
| Item | | Symbol | Conditions | Min. | Typ. | Max. | Unit. |
|---|---|---|---|---|---|---|---|
| Input | Forward voltage | $V_F$ | $I_F$=30mA | | 1.2 | 1.5 | V |
| | Reverse current | $I_R$ | $V_R$=5V | | | 10 | μA |
| | Capacitance | Ct | V=0V, f=1KHz | | 25 | | pF |
| | Peak wavelength | λp | | | 940 | | nm |
| Output | Collector dark current | $I_{CEO}$ | $V_{CE}$=10V | | | 0.1 | μA |
| Ligh current | | $I_L$ | $V_{CE}$=5V, $I_F$=20mA | 100 | | | μA |
| Leakage current | | $I_{CEOD}$ | $V_{CE}$=5V, $I_F$=20mA | | | 10 | μA |
| Switching speeds | Rise time | tr | $V_{CC}$=5V, $I_C$=100μA | | 30 | | μsec. |
| | Fall time | tf | $R_L$=1KΩ | | 30 | | μsec. |

# SG - 103

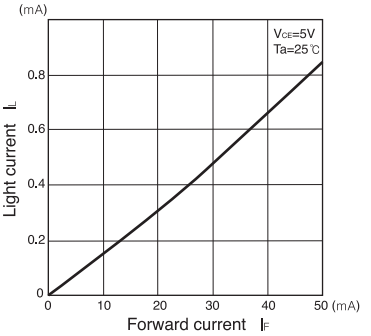
**Collector power dissipation Vs. Ambient temperature**



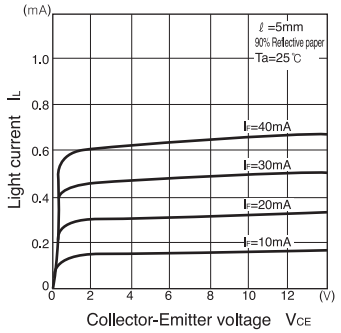

**Forward current Vs. Forward voltage**



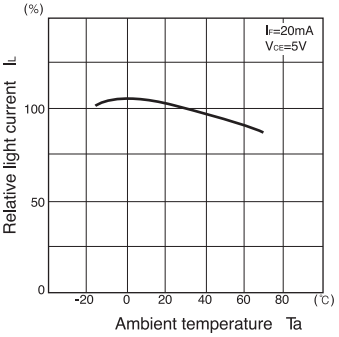

**Light current Vs. Forward current**



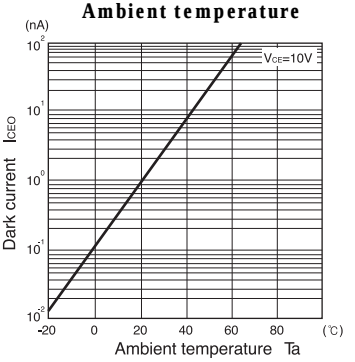

**Light current Vs. Collector-Emitter voltage**



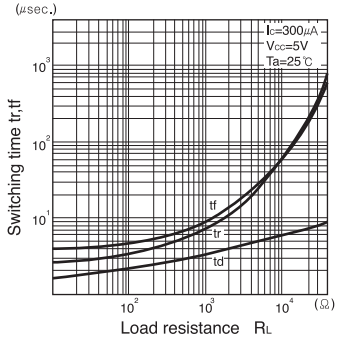

**Relative light current Vs. Ambient temperature**




**Dark current Vs. Ambient temperature**




**Switching time Vs. Load resistance**




Switching time measurement circuit