

## Technical Data Sheet

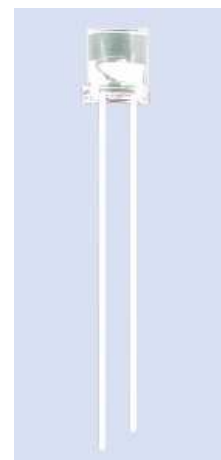
### 5mm Darlington Phototransistor: SGPT5953C

#### ■ Features

- Fast response time
- High photo sensitivity
- Pb free
- The product itself will remain within RoHS compliant version.

#### ■ Descriptions

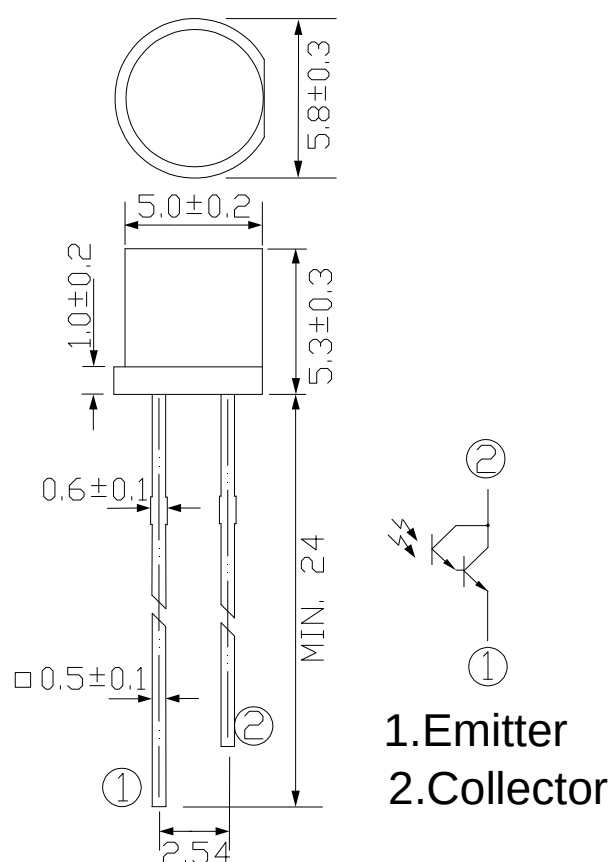
SGPT5953C is a Darlington photo transistor, high speed and high sensitive NPN silicon photodarlington molded in a  $\varnothing 5$  flat lens plastic package. Due to its water clear epoxy the device is sensitive to visible and infrared radiation.



#### ■ Applications

- Infrared applied system
- Security system
- Road lamp, Night lamp
- Optoelectronic switch

#### ■ Package Dimensions



Note: 1. All dimensions are in millimeters  
2. Tolerances unless dimensions  $\pm 0.25$ mm

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

| Parameter                                                    | Symbol    | Rating    | Units |
|--------------------------------------------------------------|-----------|-----------|-------|
| Collector-Emitter Voltage                                    | $V_{CEO}$ | 60        | V     |
| Emitter-Collector-Voltage                                    | $V_{ECO}$ | 7         | V     |
| Collector Current                                            | $I_C$     | 50        | mA    |
| Power Dissipation at (or below)<br>25°C Free Air Temperature | $P_C$     | 100       | mW    |
| Lead Soldering Temperature                                   | $T_{sol}$ | 260       | °C    |
| Operating Temperature                                        | $T_{opr}$ | -40 ~ +85 | °C    |
| Storage Temperature                                          | $T_{stg}$ | -40 ~ +85 | °C    |

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

| Parameter                                | Symbol          | Condition                                 | Min. | Typ. | Max. | Units   |
|------------------------------------------|-----------------|-------------------------------------------|------|------|------|---------|
| Rang of Spectral Bandwidth               | $\lambda_{0.5}$ | ---                                       | 600  | --   | 1000 | nm      |
| Wavelength of Peak Sensitivity           | $\lambda_p$     | ---                                       | --   | 800  | --   | nm      |
| Collector – Emitter<br>Breakdown Voltage | $BV_{CEO}$      | $I_C=100\mu A$<br>$E_e=0mW/cm^2$          | 60   | --   | --   | V       |
| Emitter-Collector<br>Breakdown Voltage   | $BV_{ECO}$      | $I_E=10\mu A$<br>$E_e=0mW/cm^2$           | 7    | --   | --   | V       |
| Collector-Emitter<br>Saturation Voltage  | $V_{CE(sat)}$   | $I_C=15mA$<br>$E_e=10mW/cm^2$             | --   | --   | 1.0  | V       |
| Rise Time                                | $t_r$           | $V_{CE}=5V$ $I_C=10mA$<br>$R_L=100\Omega$ | --   | 60   | --   | $\mu S$ |
| Fall Time                                | $t_f$           |                                           | --   | 60   | --   | $\mu S$ |
| Collector Dark Current                   | $I_{CEO}$       | $E_e=0mW/cm^2$<br>$V_{CE}=10V$            | --   | --   | 1000 | nA      |
| On State Collector Current               | $I_{C(on)}$     | $E_v=100Lx$<br>$V_{CE}=5V$                | 0.5  | 1.6  | --   | mA      |

## ■ Typical Electro-Optical Characteristics Curves

Fig.1 Collector Power Dissipation vs. Ambient Temperature

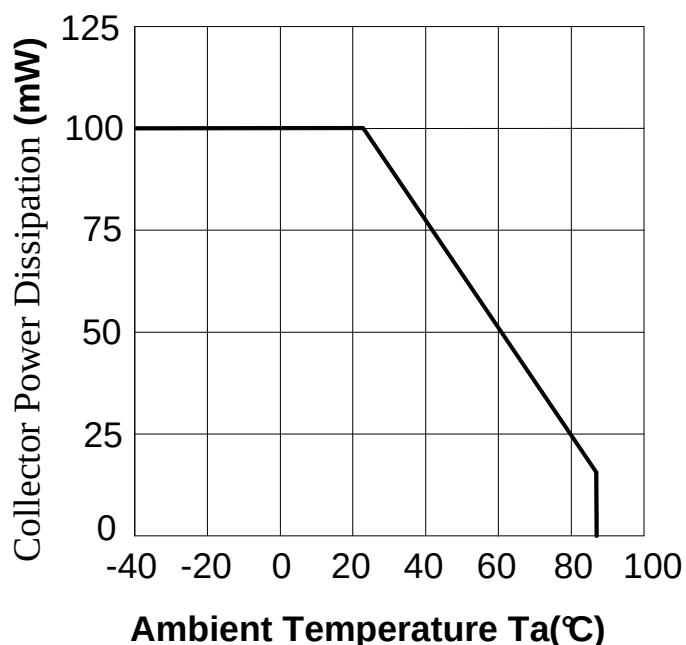


Fig.2 Spectral Sensitivity

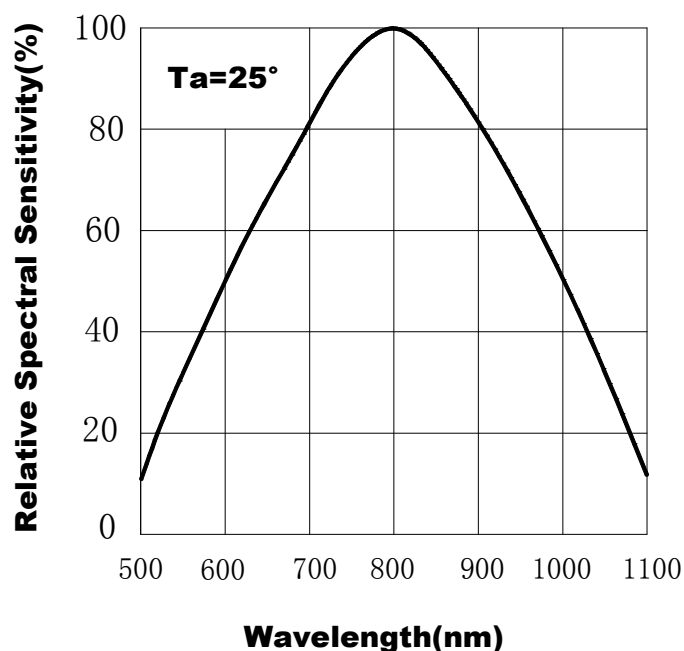


Fig.3 Relative Collector Current vs. Ambient Temperature

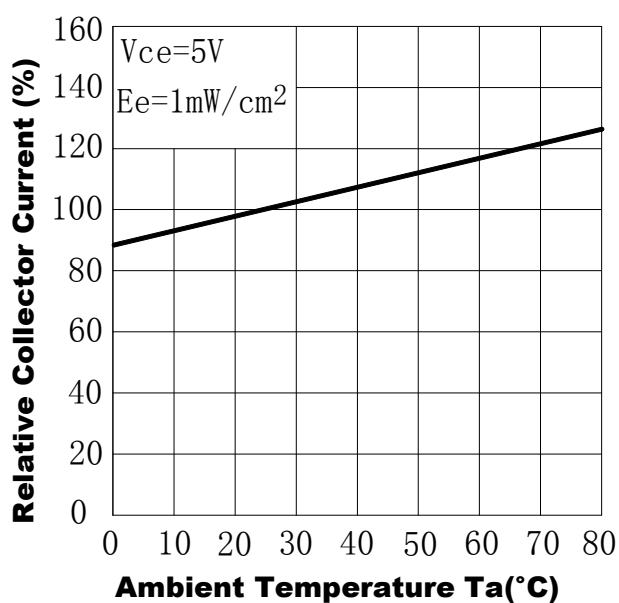


Fig.4 Collector Current vs. Luminance

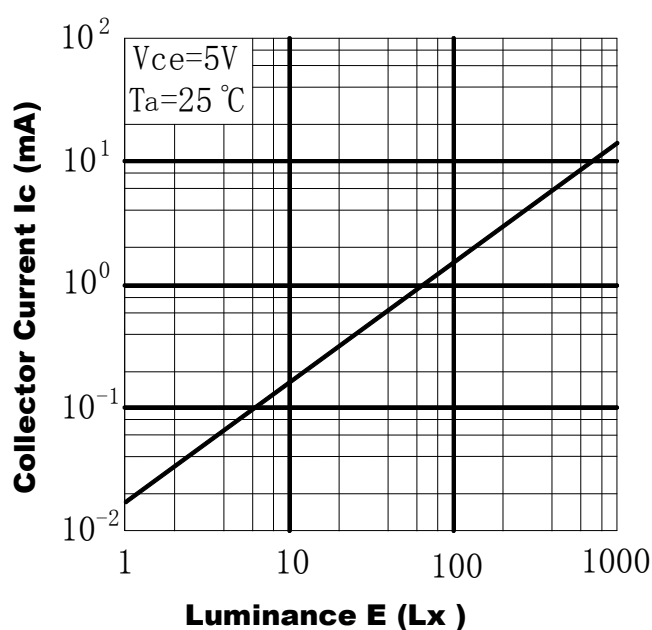


Fig.5 Collector Dark Current vs.  
Ambient Temperature

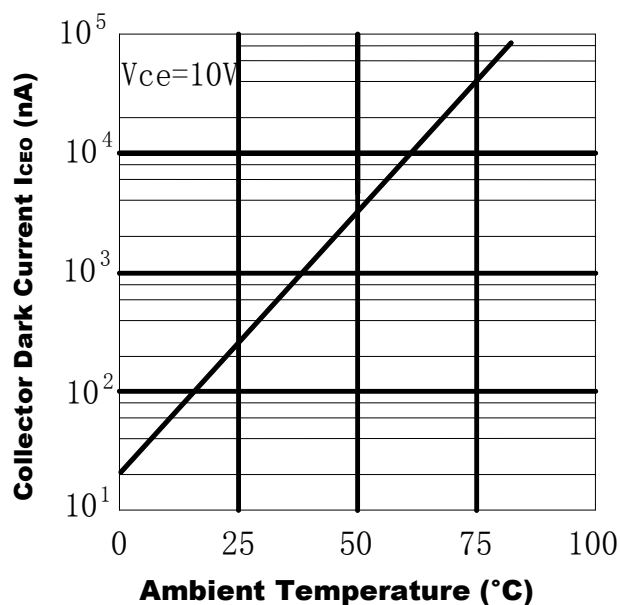
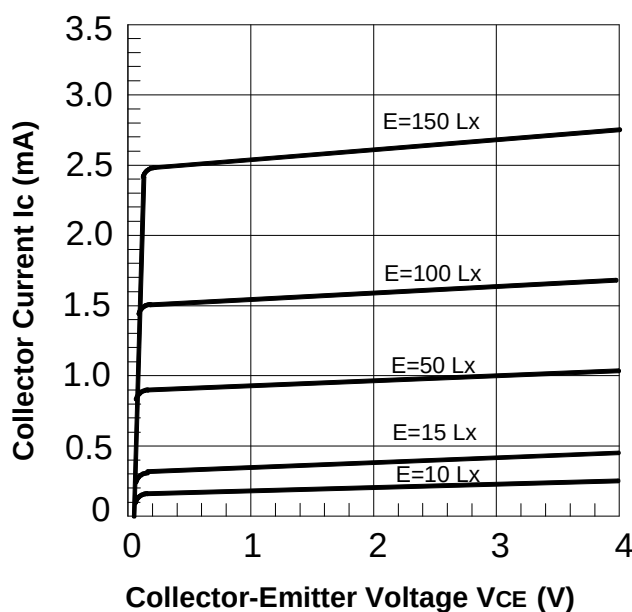


Fig.6 Collector Current vs.  
Collector-Emitter Voltage



## ■ Packing Quantity Specification

1. 1000PCS/1Bag

## ■ Notes

1. Above specification may be changed without notice. SHUGUAN 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. SHUGUAN 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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