

CNZ2179 (ON2179)

Reflective Photosensor

Overview

CNZ2179 is a reflective photosensor with a long focal distance, in which a high efficiency GaAs infrared light emitting diode is used as a light emitting element and a high sensitivity Si phototransistor is used as the light detecting element.

Features

- Long focal distance : 6 mm (typ.)
- Visible light cutoff resin is used

Absolute Maximum Ratings (Ta = 25°C)

| Parameter | | Symbol | Rated | Unit |
|------------------------------|-------------------------------|------------|------------|------|
| Input (Light emitting diode) | Reverse voltage (DC) | V_R | 3 | V |
| | Forward current (DC) | I_F | 50 | mA |
| | Power dissipation | P_D^{*1} | 75 | mW |
| Output (Photo transistor) | Collector current | I_C | 20 | mA |
| | Collector to emitter voltage | V_{CEO} | 20 | V |
| | Emitter to collector voltage | V_{ECO} | 5 | V |
| | Collector power dissipation | P_C^{*2} | 100 | mW |
| Temperature | Operating ambient temperature | T_{opr} | -25 to +80 | °C |
| | Storage temperature | T_{stg} | -30 to +85 | °C |

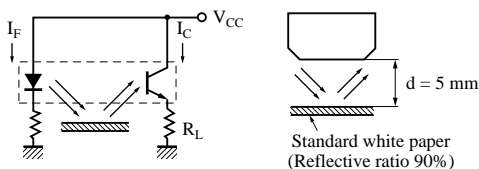
*1 Input power derating ratio is 1.25 mW/°C at Ta ≥ 25°C.

*2 Output power derating ratio is 1.67 mW/°C at Ta ≥ 25°C.

Electrical Characteristics (Ta = 25°C)

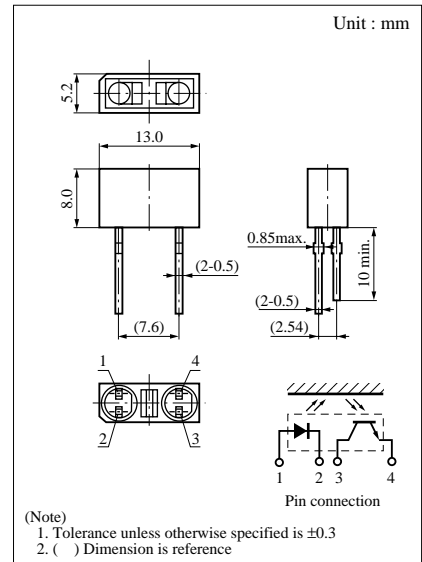
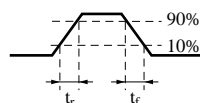
| Parameter | | Symbol | Conditions | min | typ | max | Unit |
|--------------------------|---|----------------------|--|-----|-----|------|------|
| Input characteristics | Forward voltage (DC) | V_F | $I_F = 50\text{mA}$ | | 1.3 | 1.5 | V |
| | Reverse current (DC) | I_R | $V_R = 3\text{V}$ | | | 10 | μA |
| Output characteristics | Collector cutoff current | I_{CEO} | $V_{CE} = 10\text{V}$ | | | 0.2 | μA |
| Transfer characteristics | Collector current | I_C^{*1} | $V_{CC} = 5\text{V}, I_F = 20\text{mA}, R_L = 100\Omega$ | 180 | | 1500 | μA |
| | Response time | t_r^{*2}, t_f^{*3} | $V_{CC} = 10\text{V}, I_C = 0.1\text{mA}, R_L = 100\Omega$ | | 20 | | μs |
| | Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_F = 50\text{mA}, I_C = 0.1\text{mA}$ | | | 0.5 | V |

*1 Transfer characteristics measurement circuit (Ambient light is shut off completely.)

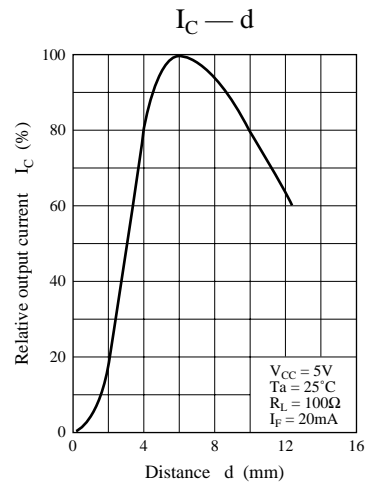
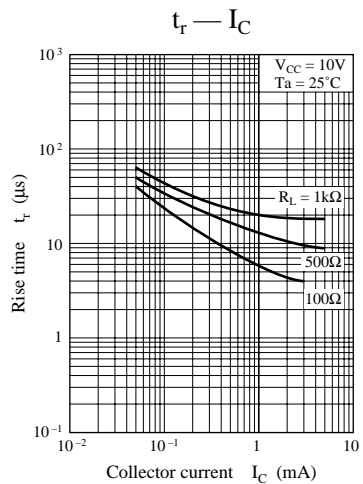
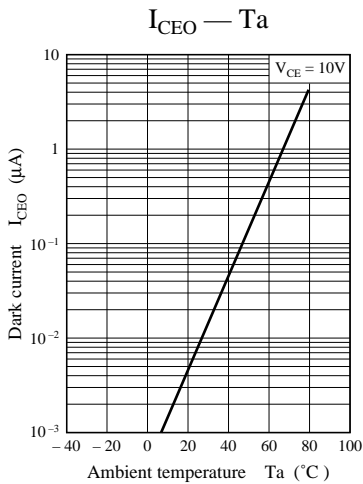
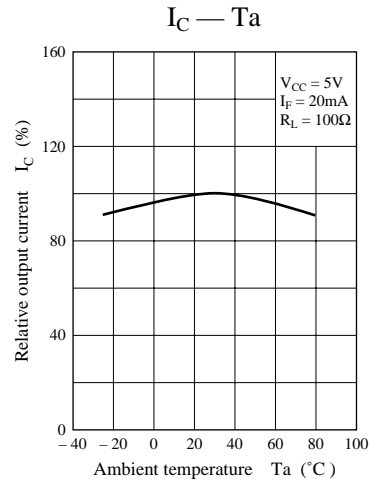
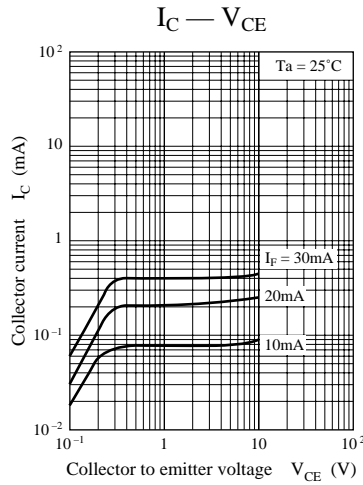
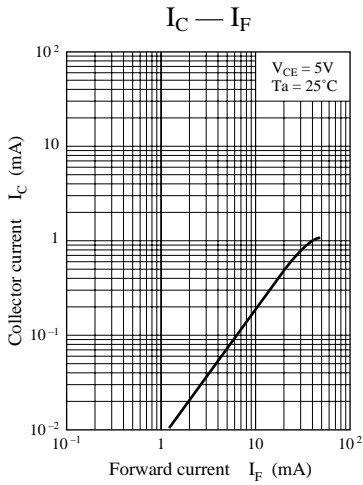
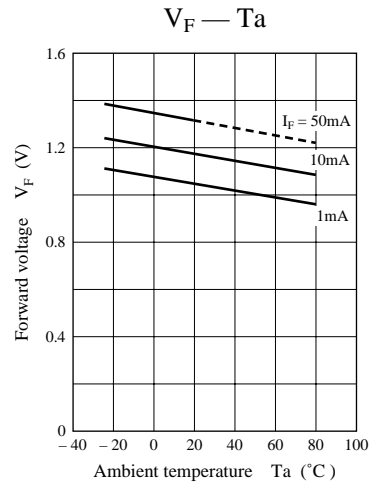
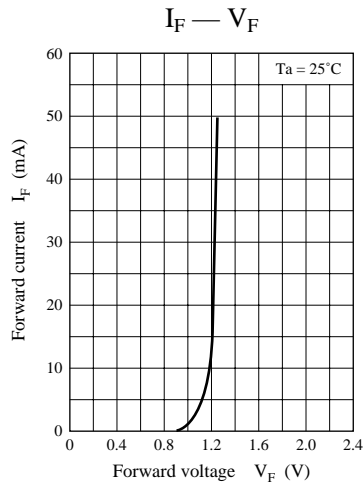
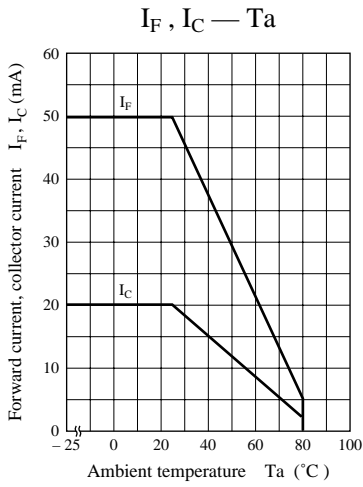


*2 Time required for the collector current to increase from 10% to 90% of its final value.

*3 Time required for the collector current to decrease from 90% to 10% of its initial value.



Note) The part number in the parenthesis shows conventional part number.



Caution for Safety

 **DANGER**

Gallium arsenide material (GaAs) is used in this product.

Therefore, do not burn, destroy, cut, crush, or chemically decompose the product, since gallium arsenide material in powder or vapor form is harmful to human health.

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