

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

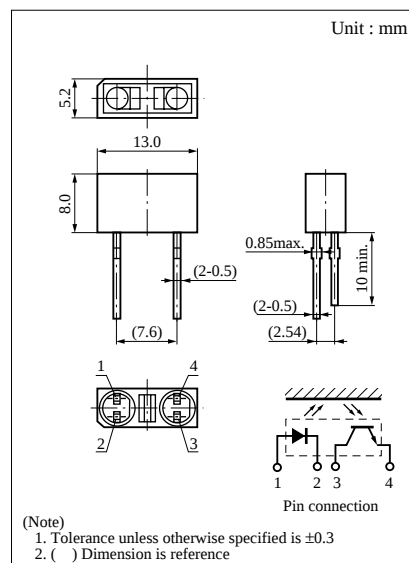
- Long focal distance : 6 mm (typ.)
- Visible light cutoff resin is used

■ Absolute Maximum Ratings (Ta = 25°C)

Parameter		Symbol	Ratings	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_{std}	-30 to +85	°C

*¹ Input power derating ratio is 1.25 mW/°C at $T_a \geq 25^\circ\text{C}$.

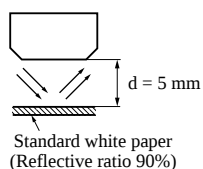
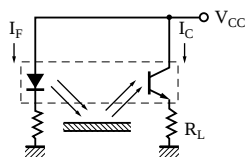
*2 Output power derating ratio is 1.67 mW/°C at $T_a \geq 25^\circ\text{C}$.



■ Electrical Characteristics (Ta = 25°C)

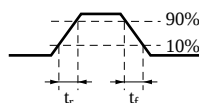
Parameter		Symbol	Conditions	min	typ	max	Unit
Input characteristics	Forward voltage (DC)	V_F	$I_F = 50\text{mA}$		1.3	1.5	V
	Reverse current (DC)	I_R	$V_R = 3\text{V}$			10	μA
Output characteristics	Collector cutoff current	I_{CEO}	$V_{CE} = 10\text{V}$			0.2	μA
Transfer characteristics	Collector current	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	$V_{CE(\text{sat})}$	$I_F = 50\text{mA}, I_C = 0.1\text{mA}$			0.5	V

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

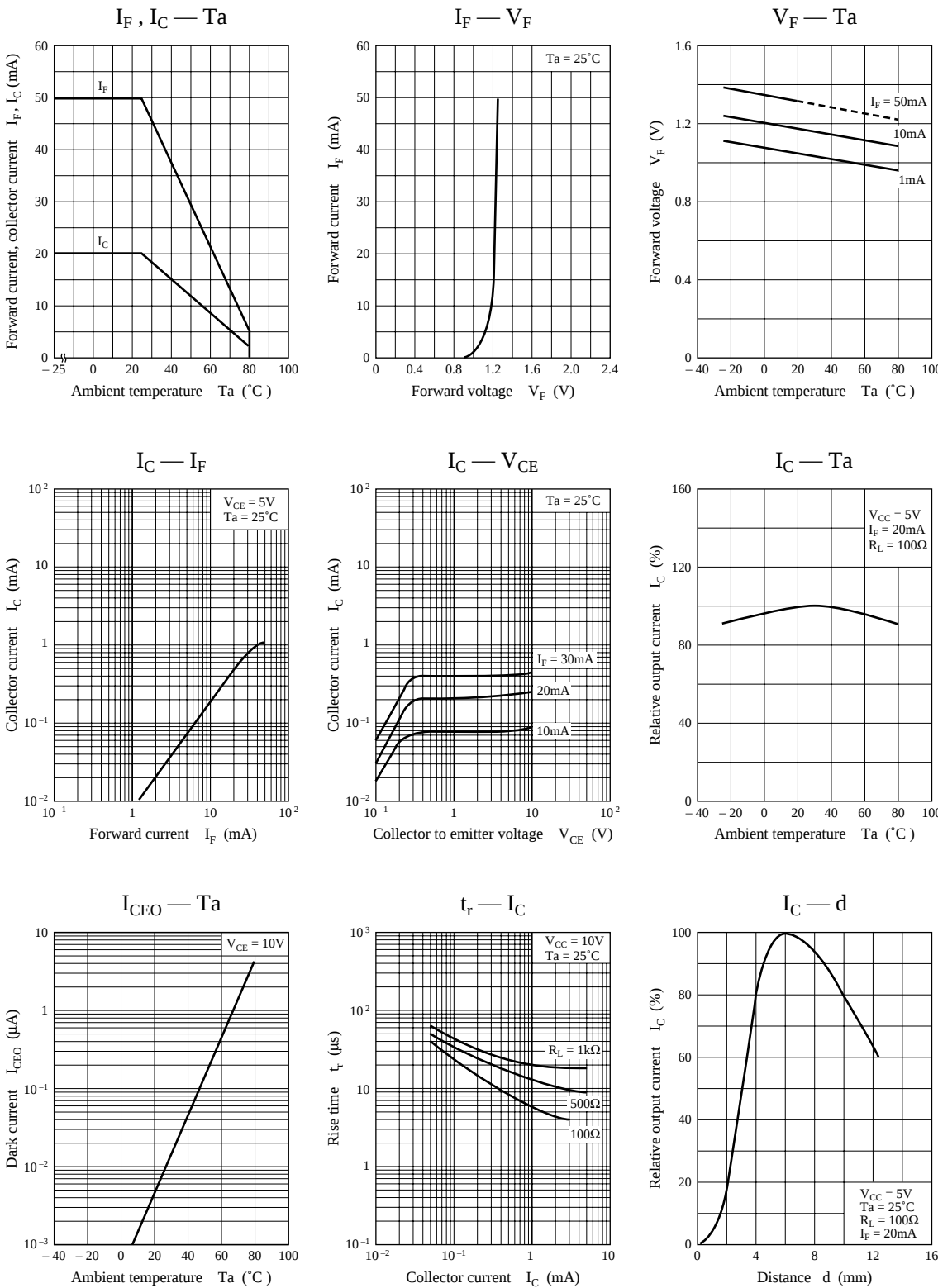


*2 Time required for the collector current to increase from 10% to 90% of its final value.

*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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