

# CNZ2179

## 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	$T_{stg}$	-30 to +85	°C

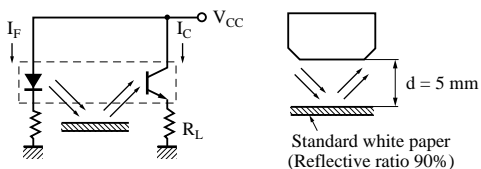
\*1 Input power derating ratio is 1.25 mW/°C at Ta ≥ 25°C.

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

### Electrical Characteristics (Ta = 25°C)

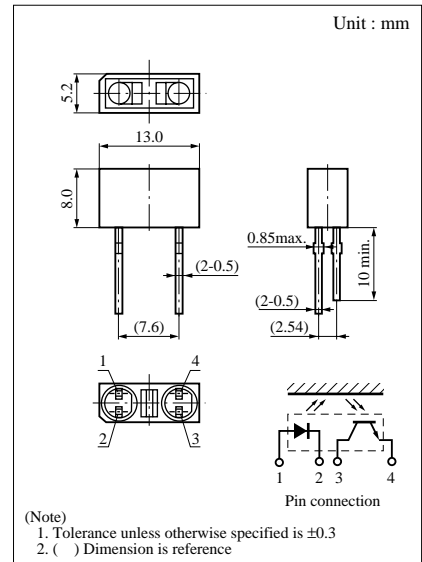
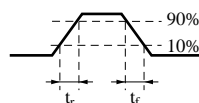
Parameter		Symbol	Conditions	min	typ	max	Unit
Input characteristics	Forward voltage (DC)	$V_F$	$I_F = 50\text{mA}$		1.3	1.5	V
	Reverse current (DC)	$I_R$	$V_R = 3\text{V}$			10	μA
Output characteristics	Collector cutoff current	$I_{CEO}$	$V_{CE} = 10\text{V}$			0.2	μA
Transfer characteristics	Collector 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)  
1. Tolerance unless otherwise specified is ±0.3  
2. ( ) Dimension is reference

