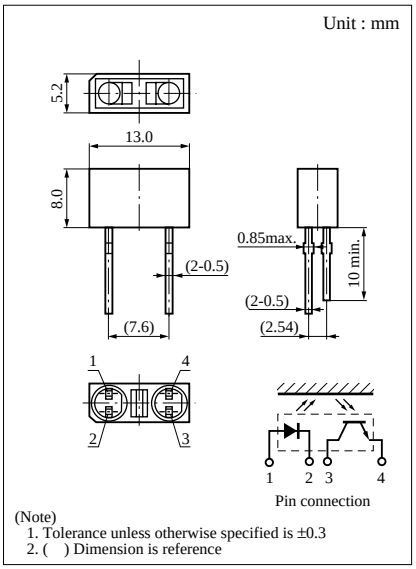
CNZ2179

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

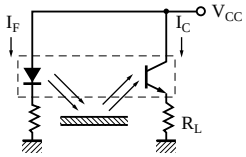
*1 Input power derating ratio is 1.25 mW/˚C at Ta ≥ 25˚C.

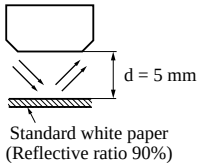
*2 Output power derating ratio is 1.67 mW/˚C at Ta ≥ 25˚C.

■ Electrical Characteristics (Ta = 25˚C)

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

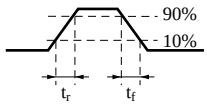
*1 Transfer characteristics measurement circuit
(Ambient light is shut off completely.)



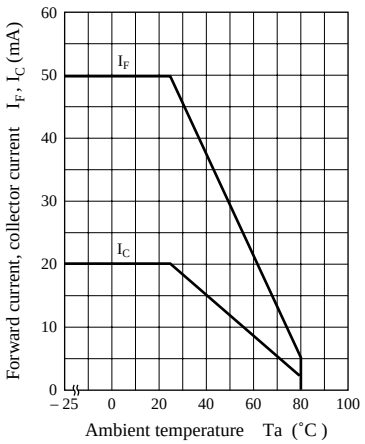


*2 Time required for the collector current to increase from 10% to 90% of its final value.

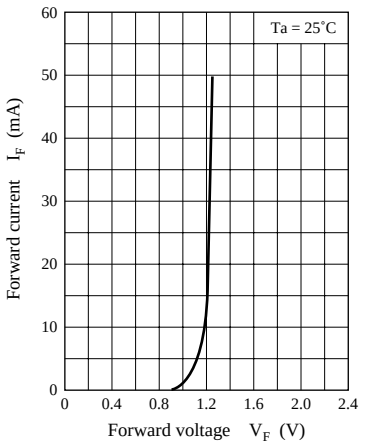
*3 Time required for the collector current to decrease from 90% to 10% of its initial value.



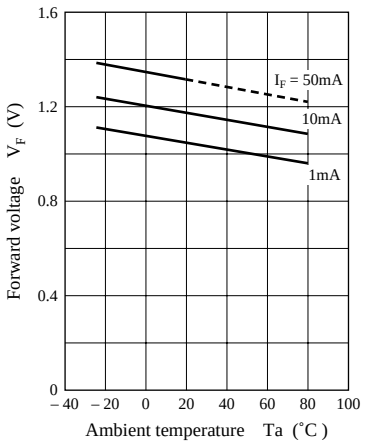
I_F , I_C — Ta



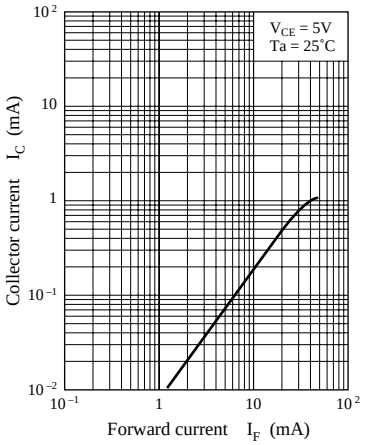
I_F — V_F



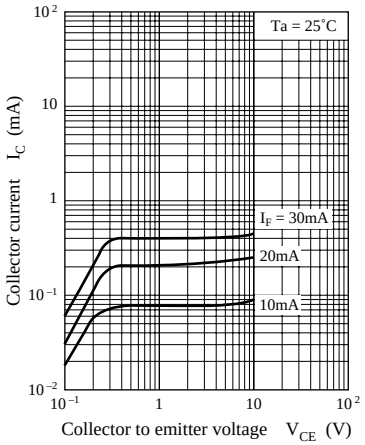
V_F — Ta



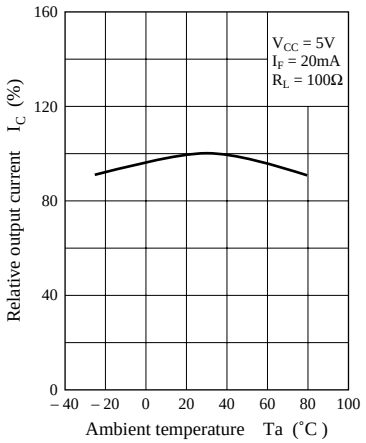
I_C — I_F



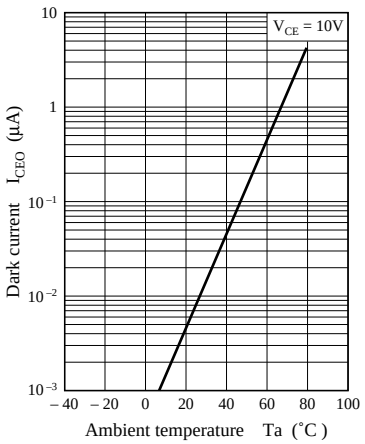
I_C — V_{CE}



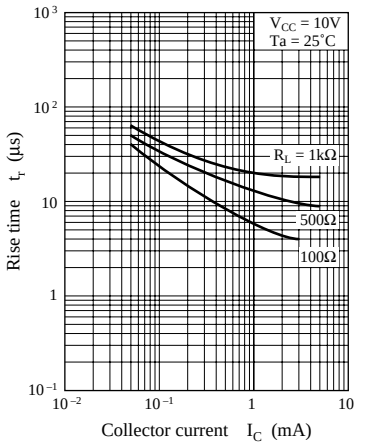
I_C — Ta



I_{CEO} — Ta



t_r — I_C



I_C — d