

CNB1011

Reflective photosensor

Non-contact point SW, object sensing

■ Features

- Ultraminiature, thin type: 2.29 mm × 2.9 mm (height: 0.88 mm)

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Input (Light emitting diode)	Reverse voltage	V_R	6 V
	Forward current	I_F	30 mA
	Power dissipation *1	P_D	75 mW
Output (Photo transistor)	Collector-emitter voltage (Base open)	V_{CEO}	35 V
	Emitter-collector voltage (Base open)	V_{ECO}	6 V
	Collector current	I_C	20 mA
	Collector power dissipation *2	P_C	75 mW
Temperature	Operating ambient temperature	T_{opr}	-25 to +85 °C
	Storage temperature	T_{stg}	-40 to +100 °C

Note) *1: Input power derating ratio is 1.0 mW/°C at $T_a \geq 25^\circ\text{C}$.

*2: Output power derating ratio is 1.0 mW/°C at $T_a \geq 25^\circ\text{C}$.

■ Electrical-Optical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

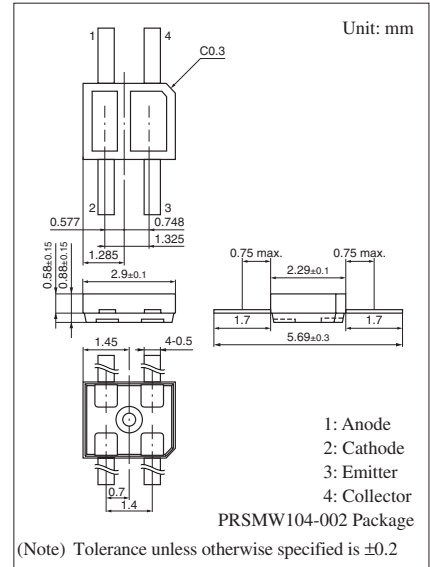
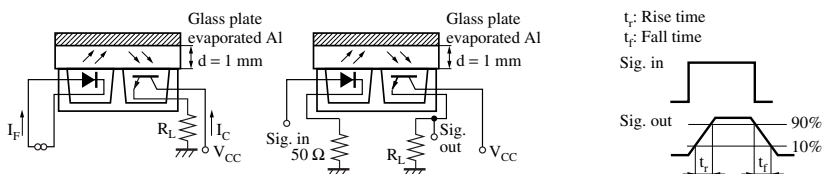
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Input characteristics	Forward voltage	V_F $I_F = 4 \text{ mA}$		1.15	1.30	V
	Reverse current	I_R $V_R = 3 \text{ V}$			10	μA
Output characteristics	Collector-emitter cutoff current (Base open)	I_{CEO} $V_{CE} = 20 \text{ V}$			100	nA
Transfer characteristics	Collector current *1	I_C $V_{CE} = 2 \text{ V}, I_F = 4 \text{ mA}, d = 1 \text{ mm}$	40		243	μA
	Dark current	I_D $V_{CE} = 2 \text{ V}, I_F = 4 \text{ mA}$			100	nA
	Collector-emitter saturation voltage	$V_{CE(sat)}$ $I_F = 20 \text{ mA}, I_C = 0.1 \text{ mA}$			0.4	V
	Rise time *2	t_r $V_{CC} = 2 \text{ V}, I_C = 0.1 \text{ mA}$		40		μs
Fall time *2	t_f $R_L = 1000 \Omega$			50	μs	

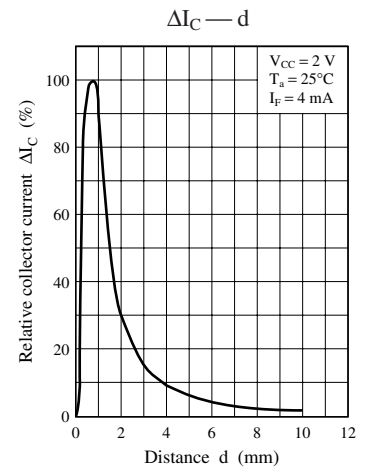
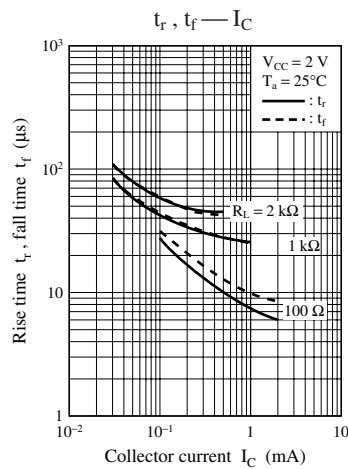
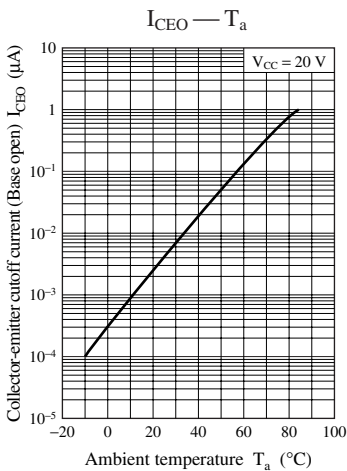
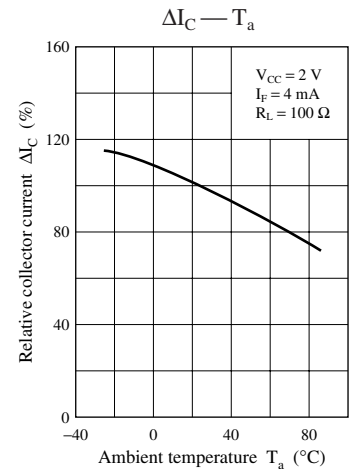
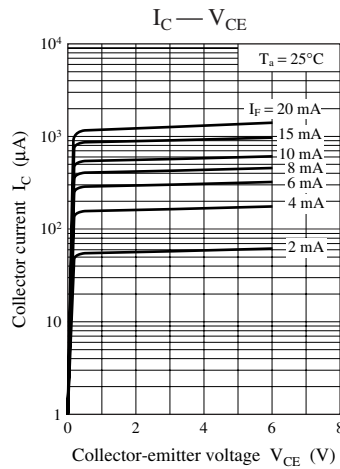
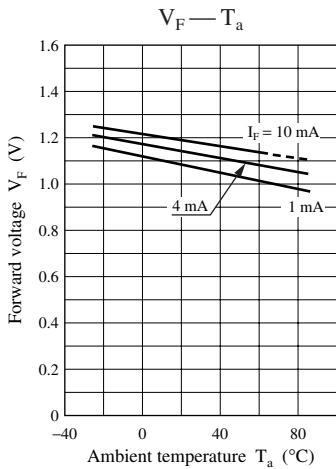
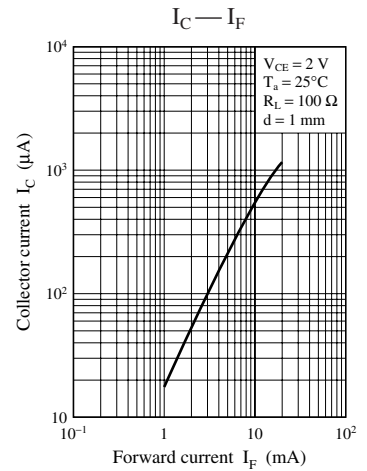
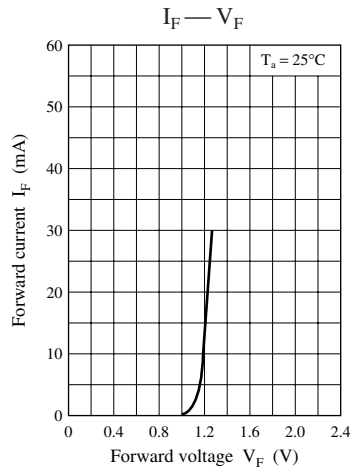
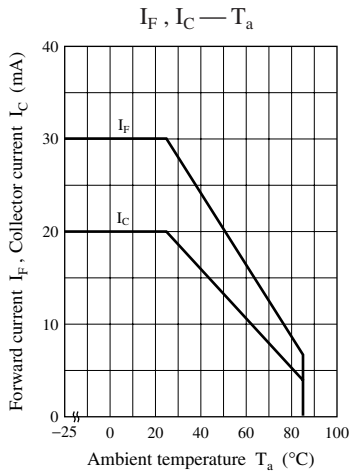
Note) 1. Input and output are handled electrically.

2. This product is not designed to withstand radiation

3. *1: Output current measurement method

*2: Switching time measurement circuit





Caution for Safety

 **DANGER**

■ This product contains Gallium Arsenide (GaAs).

GaAs powder and vapor are hazardous to human health if inhaled or ingested. Do not burn, destroy, cut, cleave off, or chemically dissolve the product. Follow related laws and ordinances for disposal. The product should be excluded from general industrial waste or household garbage.

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