

CNB1301 (ON2171)

Reflective photosensor

Non-contact point SW, object sensing

Overview

CNB1301 is a reflective photosensor consisting of a small, thin reflective photosensor (CNB1302) to which a plastic lens is attached to increase the focal distance from 0.8 mm to 2.5 mm.

Features

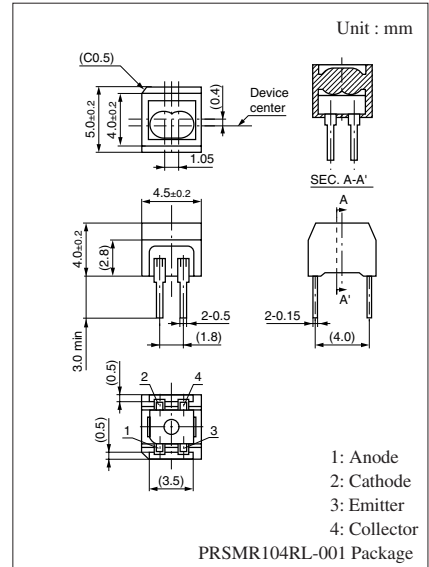
- Small size, light weight: 5 mm × 4.5 mm (height: 4.0 mm)
- Focal distance: 2.5 mm
- Visible light cutoff resin is used

Applications

- Copier
- Printers
- Facsimiles
- Cassette deck

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

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



Note) *1: Input power derating ratio is 1.36 mW/ $^\circ\text{C}$ at $T_a \geq 25^\circ\text{C}$.
 *2: Output power derating ratio is 0.91 mW/ $^\circ\text{C}$ at $T_a \geq 25^\circ\text{C}$.

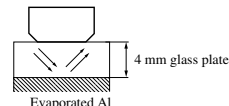
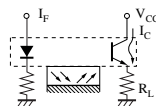
Electrical-Optical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Input characteristics	Forward voltage	V_F	$I_F = 50 \text{ mA}$		1.3	1.5	V
	Reverse current	I_R	$V_R = 3 \text{ V}$			10	μA
Output characteristics	Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 10 \text{ V}$			200	nA
Transfer characteristics	Collector current *	I_C	$V_{CC} = 5 \text{ V}, I_F = 10 \text{ mA}, R_L = 100 \Omega, d = 4 \text{ mm}$	0.8		5.2	mA
	Dark current	I_D	$V_{CC} = 5 \text{ V}, I_F = 10 \text{ mA}, R_L = 100 \Omega$			40	μA
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F = 20 \text{ mA}, I_C = 0.1 \text{ mA}$			0.5	V
	Rise time	t_r	$V_{CC} = 5 \text{ V}, I_C = 0.1 \text{ mA}, R_L = 100 \Omega$		20		μs
	Fall time	t_f			20		μs

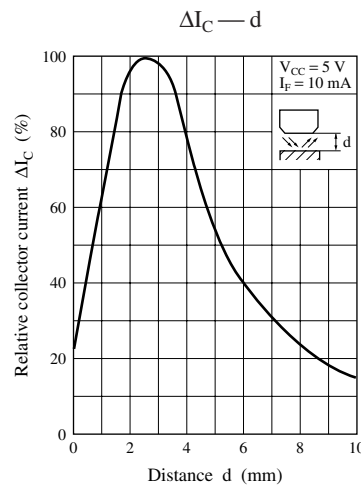
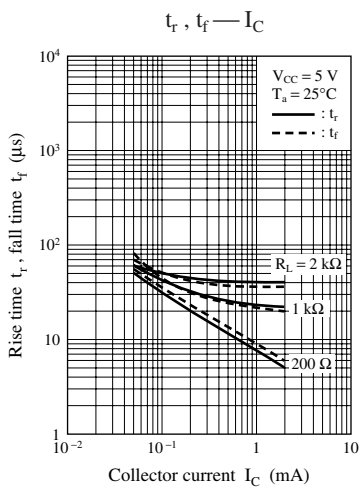
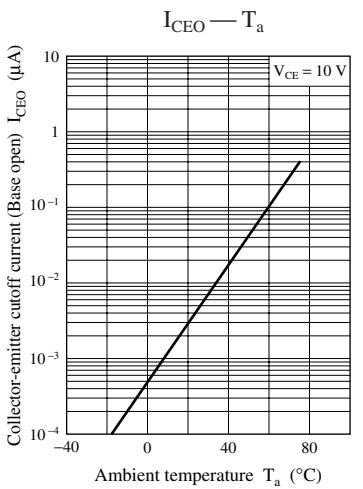
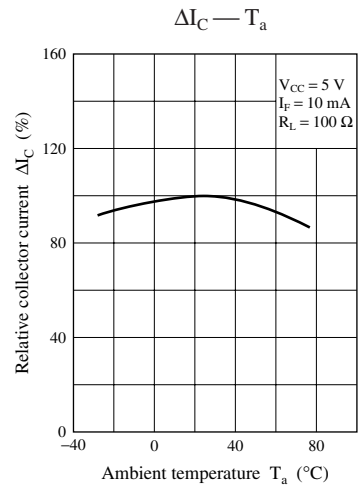
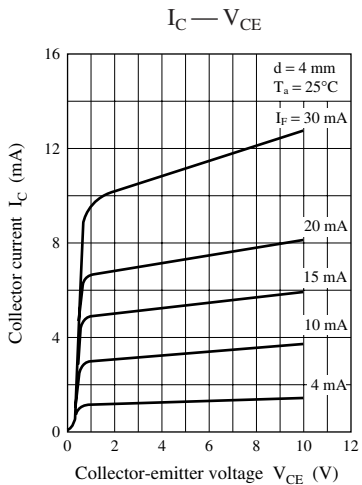
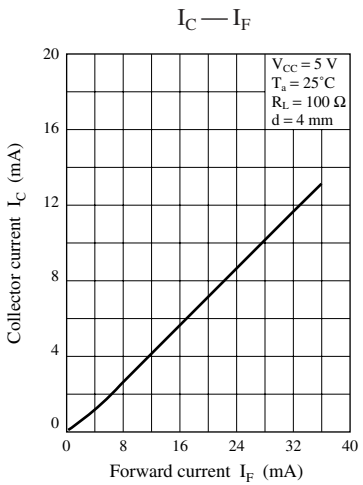
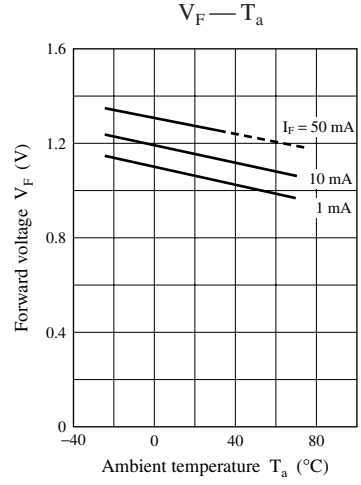
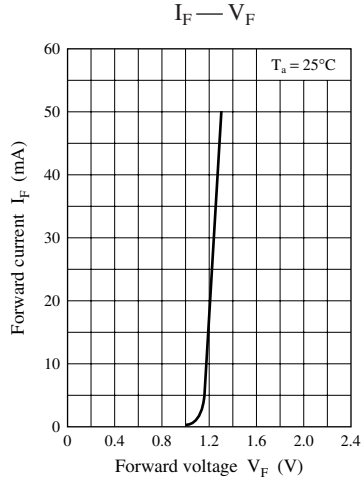
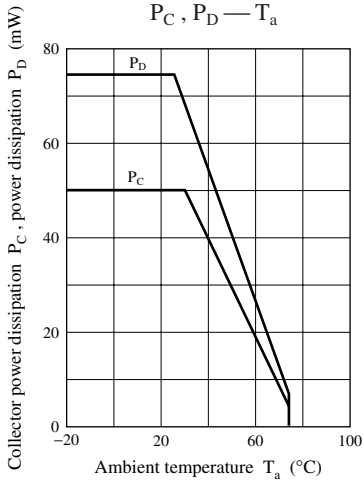
Note) 1. Input and output are handled electrically.

2. This product is not designed to withstand radiation

3. *: Output current measurement circuit



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



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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