

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
	Forward current	I_F	50
	Power dissipation *1	P_D	75
Output (Photo transistor)	Collector-emitter voltage (Base open)	V_{CEO}	30
	Emitter-collector voltage (Base open)	V_{ECO}	5
	Collector current	I_C	20
	Collector power dissipation *2	P_C	50
Temperature	Operating ambient temperature	T_{opr}	-25 to +75
	Storage temperature	T_{stg}	-30 to +80

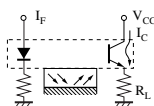
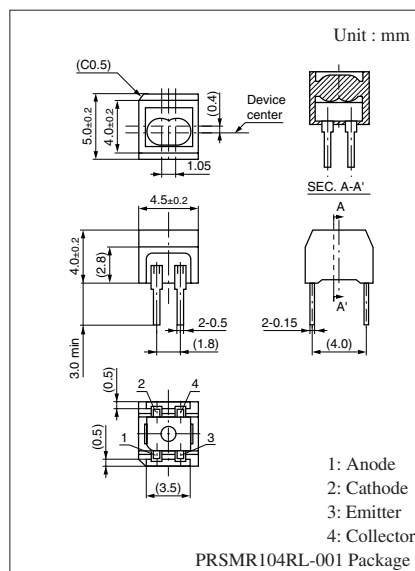
Electrical-Optical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

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

Note) 1. Input and output are handled electrically.

2. This product is not designed to withstand radiation

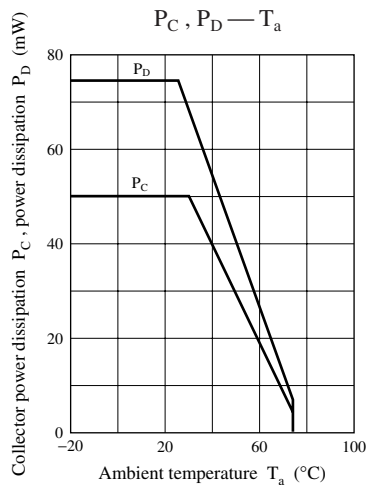
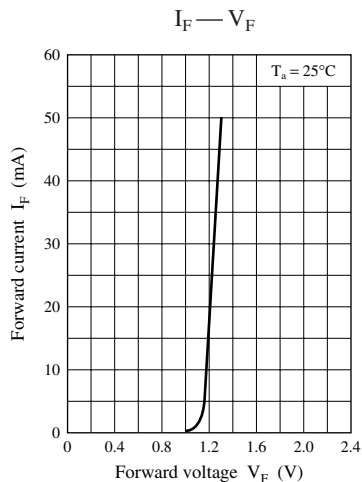
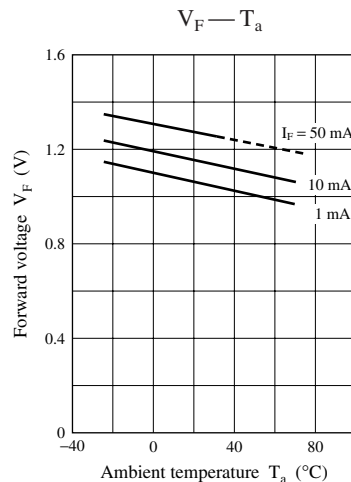
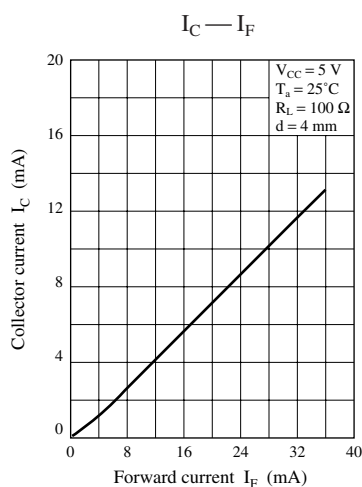
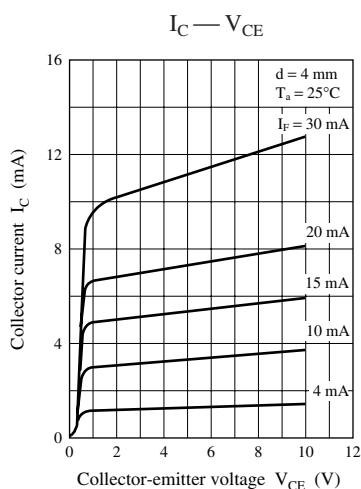
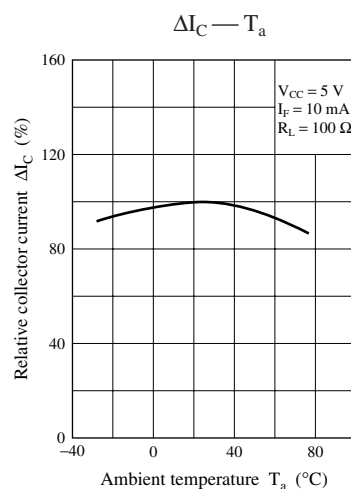
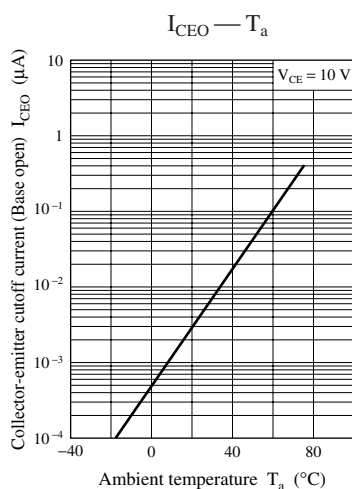
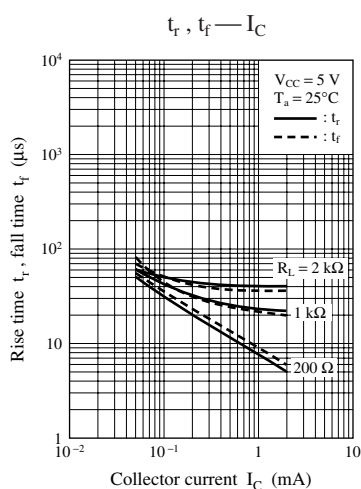
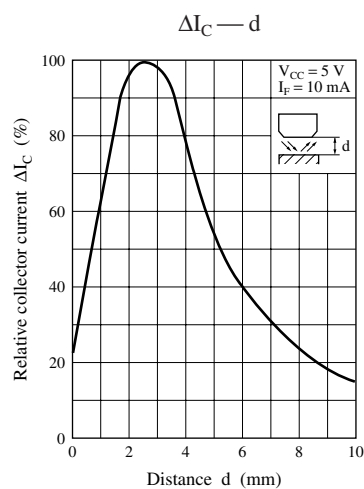
3. *: Output current measurement circuit



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

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

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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