CNB1304H (ON2175)

Reflective photosensor

Tape end sensor for DAT

Overview

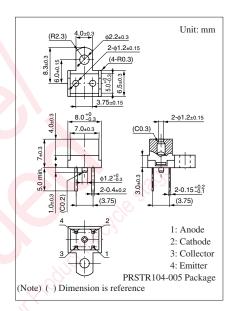
CNB1304H is a sensor which consists of a high efficiency GaAs infrared light emitting diode and a high sensitivity Si phototransistor which are arranged together in the same direction. It detects the beginning and end of a tape based on changes in the amount of light reflected from a prism which is situated outside of the sensor.

■ Features

- Fast response
- Small size and light weight

■ Absolute Maximum Ratings $T_a = 25$ °C

	Parameter	Symbol	Rating	Unit
Input (Light	Reverse voltage	V_R	3	V
emitting diode)	Forward current	I_{F}	50	mA
	Power dissipation *1	P_{D}	75	mW
Output (Photo	Collector-emitter voltage	V _{CEO}	30	V
transistor)	(Base open)			
	Emitter-collector voltage	V _{ECO}	5	V
	(Base open)			
	Collector current	$I_{\mathbb{C}}$	20	mA
	Collector power dissipation *2	$P_{\rm C}$	100	mW
Temperature	Operating ambient temperature	T _{opr}	-20 to +85	°C
	Storage temperature	T _{stg}	-30 to +100	°C



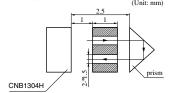
Note) *1: Input power derating ratio is
1.0 mW/°C at T_a ≥ 25°C.
*2: Output power derating ratio is
1.33 mW/°C at T_a ≥ 25°C.

■ Electrical-Optical Characteristics $T_a = 25$ °C ± 3 °C

	Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Input	Forward voltage	$V_{\rm F}$	$I_F = 50 \text{ mA}$			1.5	V
characteristics	Reverse current	I_R	$V_R = 3 V$			10.0	μΑ
Output	Collector-emitter cutoff current	I_{CEO}	$V_{CE} = 10 \text{ V}$			200	nA
characteristics	(Base open)		The distribution				
Transfer	Collector current *1	I_C	$V_{CE} = 5 \text{ V}, I_F = 20 \text{ mA}$	100		1 500	μΑ
characteristics	Collector-emitter saturation voltage	V _{CE(sat)}	$I_F = 50 \text{ mA}, I_C = 0.1 \text{ mA}$			0.5	V
	Rise time	t _r	$V_{CC} = 10 \text{ V}, I_C = 0.5 \text{ mA}, R_L = 100 \Omega$		6		μs
	Fall time	t _f	X '		6		

Note) 1. Input and output are handled electrically.

- 2. This product is not designed to withstand radiation





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



■ 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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