

CNA4302A

Integrated Photosensors

Object Detection, Contactless Switch

■ Features

- Highly precise position detection (Slit width: 0.3 mm)
- Gap width: 1.2 mm
- High response: $t_{PHL} = 3 \mu s$, $t_{PLH} = 8 \mu s$ (typ.)
- With a positioning pins

■ Absolute Maximum Ratings $T_a = 25^\circ C \pm 3^\circ C$

Parameter		Symbol	Rating	Unit
Input	Reverse voltage	V_R	6	V
	Forward current	I_F	50	mA
	Power dissipation *1	P_D	75	mW
Output	Operation Supply voltage	V_{CC}	7	V
	Output voltage	V_O	12	V
	Output current	I_{OUT}	8	mA
	Collector power dissipation *2	P_C	80	mW
Temperature	Operating ambient temperature	T_{opr}	-25 to +85	$^\circ C$
	Storage temperature	T_{stg}	-40 to +100	$^\circ C$

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

*2: Output power derating ratio is 1.07 mW/ $^\circ C$ at $T_a \geq 25^\circ C$

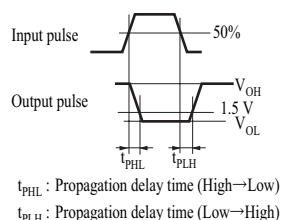
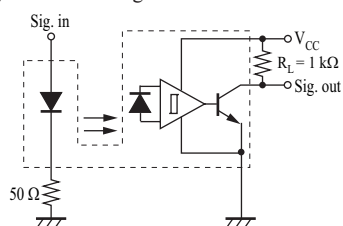
■ Electrical Characteristics $T_a = 25^\circ C \pm 3^\circ C$

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Input Characteristics	Forward voltage	V_F	$I_F = 20 \text{ mA}$		1.2	1.4	V
	Reverse current	I_R	$V_R = 3 \text{ V}$			10	μA
Output Characteristics	Supply voltage	V_{CC}		2.2		7.0	V
	Low level output voltage	V_{OL}	$V_{CC} = 5 \text{ V}$, $I_{OL} = 5 \text{ mA}$, $I_F = 2 \text{ mA}$		0.15	0.4	V
	High level output current	I_{OH}	$V_{CC} = 5 \text{ V}$, $V_{OH} = 12 \text{ V}$, $I_F = 0 \text{ mA}$			100	μA
	Low level supply current	I_{CCL}	$V_{CC} = 5 \text{ V}$, $I_F = 2 \text{ mA}$		0.8	2.0	mA
	High level supply current	I_{CCH}	$V_{CC} = 5 \text{ V}$, $I_F = 0 \text{ mA}$		0.8	2.0	mA
	High $\rightarrow$ Low threshold input current	I_{FHL}	$V_{CC} = 5.0 \text{ V}$			1.60	mA
Transfer Characteristics	Hysteresis	I_{FLH} / I_{FHL}	$V_{CC} = 5.0 \text{ V}$		0.88		—
	Propagation delay time (High $\rightarrow$ Low) *	t_{PHL}	$V_{CC} = 5 \text{ V}$, $R_L = 1 \text{ k}\Omega$, $I_F = 2 \text{ mA}$		3.0		μs
	Propagation delay time (Low $\rightarrow$ High) *	t_{PLH}			8.0		

Note) 1. Input and output are practiced by electricity.

2. This device is designed by disregarding for radiation.

3. *: Propagation delay time measuring circuit



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