## **CNC1H001**

### Optoisolator

#### ■ Features

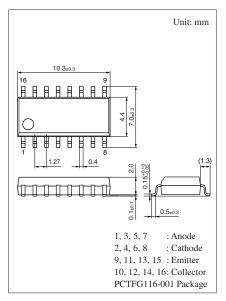
- Housed in a surface mount package alternative to mini-flat package of 1.27 mm pitch
- Double molded package
- 2.5 kV isolation voltage
- UL approved (File No. E79920)

#### ■ Applications

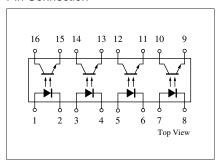
- Suited for interface circuits requiring high density mounting of parts, especially hybrid ICs and programmable controllers
- Signal transfer between circuits with different potentials and with impedances

#### ■ Absolute Maximum Ratings $T_a = 25$ °C

	Symbol	Rating	Unit		
Input (light	Reverse voltage (DC)	V <sub>R</sub>	6	V	
emitting diode)	Forward current (DC)	$I_F$	50	mA	
	Pulse forward current *1	$I_{FP}$	1	A	
	Power dissipation *2	$P_{\mathrm{D}}$	75	mW/ch	
Output (photo	Collector current	$I_{C}$	50	mA	
transistor)	Collector-emitter voltage	$V_{CEO}$	80	V	
	Emitter-collector voltage	V <sub>ECO</sub>	7	V	
	Collector power dissipation *3	P <sub>C</sub>	120	mW/ch	
Isolation volta	V <sub>ISO</sub>	2500	V[rms]		
Operating amb	$T_{opr}$	-30 to +100	°C		
Storage temper	T <sub>stg</sub>	-55 to +125	°C		



Pin Connection



Note) \*1: Pulse repetition rate = 100 pps. Pulse wide  $\leq$  100  $\mu$ s

- \*2: Above 25°C ambient temperature, derate dissipation at the rate of 0.75 mW/°C.
- \*3: Above 25°C ambient temperature, derate dissipation at the rate of 1.2 mW/°C.
- \*4: AC voltage (t = 1.0 min., RH < 60%)

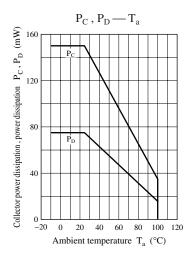
## $\blacksquare$ Electrical Characteristics $T_a\!=\!25^{\circ}C\pm3^{\circ}C$

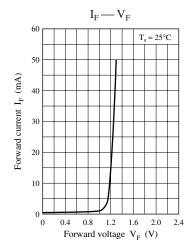
	Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Input	Forward voltage	$V_{F}$	$I_F = 50 \text{ mA}$		1.35	1.5	V
diode	Reverse current	$I_R$	$V_R = 3 V$			10	μΑ
	Capacitance	C <sub>t</sub>	$V_R = 0 V, f = 1 MHz$		15		pF
Output	Collector-emitter dark current	I <sub>CEO</sub>	$V_{CE} = 20 \text{ V}$		5	100	nA
transistor	Collector-emitter voltage	V <sub>CEO</sub>	$I_C = 100 \ \mu A$	80			V
	Emitter-collector voltage	V <sub>ECO</sub>	$I_E = 10 \mu A$	7			V
	Collector capacitance	$C_{C}$	V <sub>CE</sub> = 10 V, f = 1 MHz		10		pF
Coupled	Current transfer ratio *1	CTR	$V_{CE} = 5 \text{ V}, I_F = 5 \text{ mA}$	100		600	%
	Capacitance	C <sub>ISO</sub>	f = 1 MHz		0.6		pF
	Resistance	R <sub>ISO</sub>	$V_{\rm ISO} = 500 \text{ V}$	1011			Ω
	Rise time *2	t <sub>r</sub>	$V_{CC} = 10 \text{ V}, I_{C} = 2 \text{ mA}$		4		μs
	Fall time *3	$t_{\rm f}$	$R_L = 100 \Omega$		3		
	Saturation voltage	V <sub>CE(sat)</sub>	$I_F = 20 \text{ mA}, I_C = 1 \text{ mA}$		0.1	0.2	V

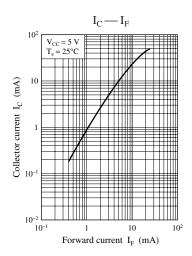
Note) \*1: CTR =  $I_C / I_F \times 100\%$ 

Input and output are practiced by electricity.

The device is designed be disregarded radiation.

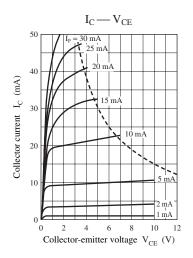


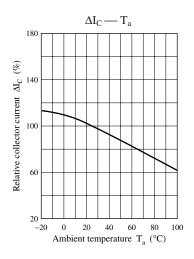


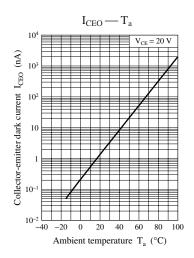


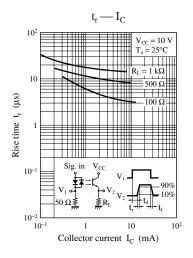
<sup>\*2</sup>: Rise time is defined as the time required for the  $I_{C}$  to rise from 10% to 90% of peak value.

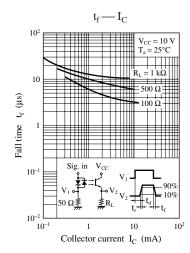
<sup>\*3</sup>: Fall time is defined as the time required for the  $I_C$  to decrease from 90% to 10% of peak value.

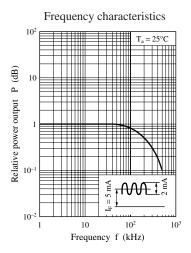












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# Caution for Safety



■ Gallium arsenide material (GaAs) is used in this product.

Therefore, do not burn, destroy, cut, crush, or chemically decompose the product, since gallium arsenide material in powder or vapor form is harmful to human health.

Observe the relevant laws and regulations when disposing of the products. Do not mix them with ordinary industrial waste or household refuse when disposing of GaAs-containing products.

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