

CNA1302K (ON1004)

Photo Interrupter

For contactless SW and object detection

Overview

CNA1302K is an ultraminiature, highly reliable transmissive photosensor in which a high efficiency GaAs infrared light emitting diode chip and a high sensitivity Si phototransistor chip are integrated in a double molded resin package.

Features

- Ultraminiature: 4.2 mm × 5.0 mm (height: 5.2 mm)
- Fast response: $t_r, t_f = 35 \mu s$ (typ.)
- Highly precise position detection: 0.15 mm
- Gap width: 2.0 mm

Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter		Symbol	Rating	Unit
Input (Light emitting diode)	Power dissipation *1	P_D	75	mW
	Forward current	I_F	50	mA
	Reverse voltage	V_R	6	V
Output (Photo transistor)	Collector-emitter voltage (Base open)	V_{CEO}	35	V
	Emitter-collector voltage (Base open)	V_{ECO}	6	V
	Collector current	I_C	20	mA
	Collector power dissipation *2	P_C	75	mW
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 1.0 mW/ $^\circ C$ at $T_a \geq 25^\circ C$

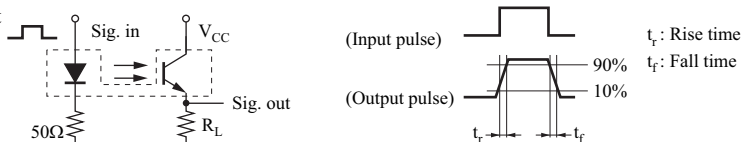
Electrical-Optical Characteristics $T_a = 25^\circ C \pm 3^\circ C$

Parameter		Symbol	Conditions	Min	Typ	Max	Unit
Input characteristics	Reverse current	I_R	$V_R = 3 V$			10	μA
	Forward voltage	V_F	$I_F = 20 mA$		1.2	1.4	V
Output characteristics	Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 20 V$			100	nA
Transfer characteristics	Collector current	I_C	$V_{CE} = 5 V, I_F = 5 mA$	40		400	μA
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F = 10 mA, I_C = 40 \mu A$			0.4	V
	Rise time *	t_r	$V_{CC} = 5 V, I_C = 0.1 mA,$		35		μs
	Fall time *	t_f	$R_L = 1000 \Omega$		35		μs

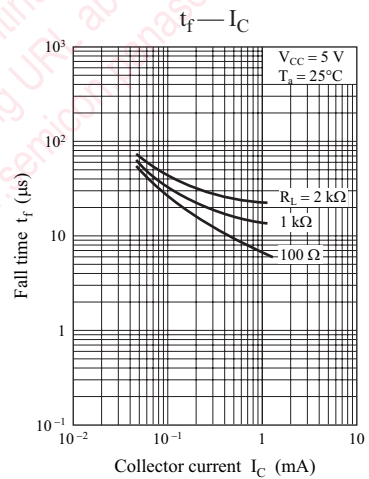
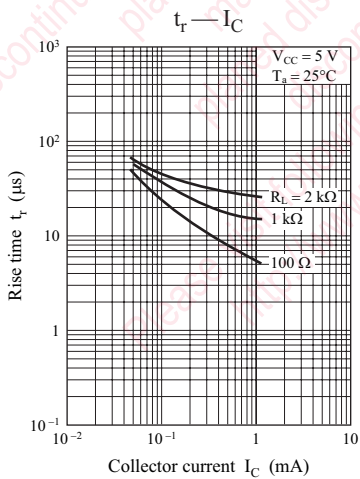
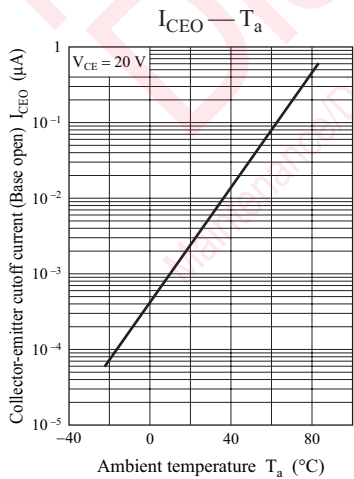
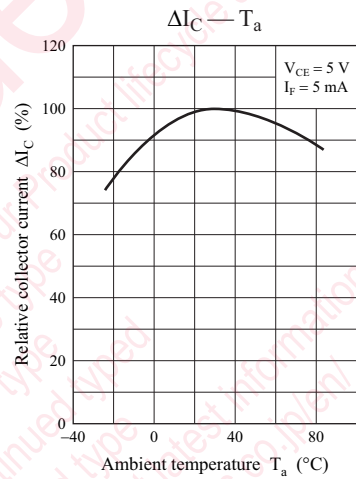
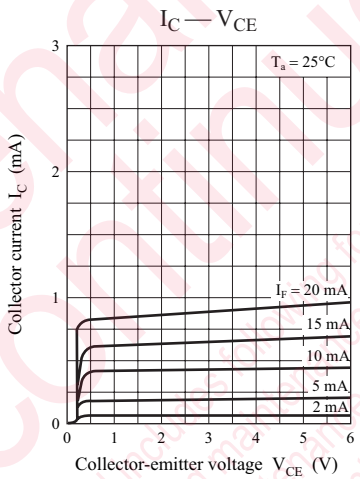
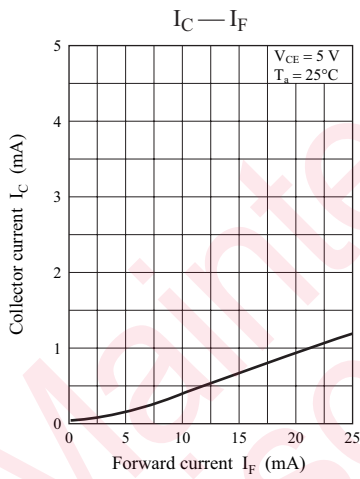
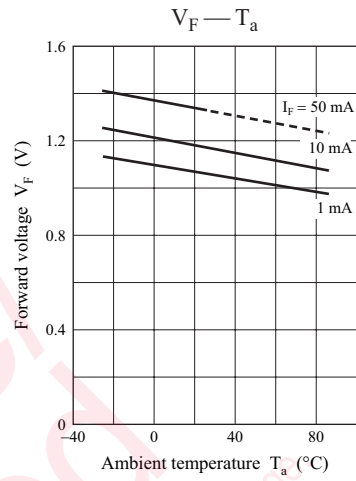
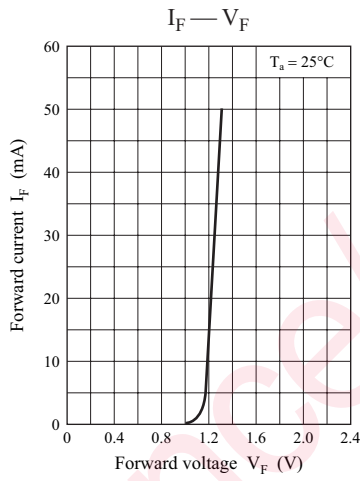
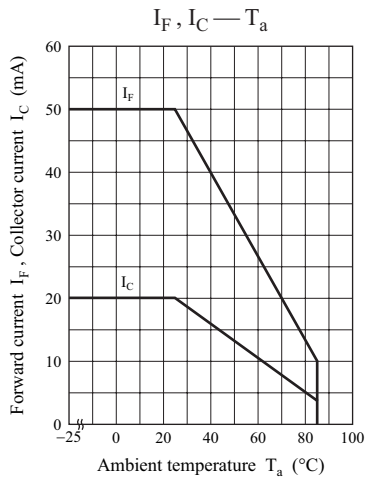
Note) 1. Input and output are practiced by electricity.

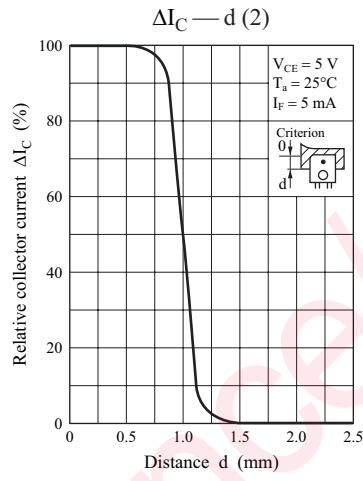
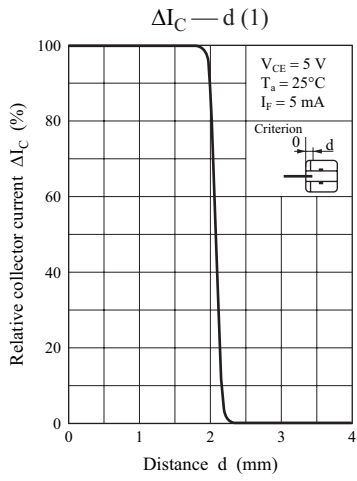
2. This device is designed by disregarding radiation.

3. *: Switching time measurement circuit



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





Maintenance/Discontinued

Maintenance/Discontinued includes following four Product lifecycle stage.

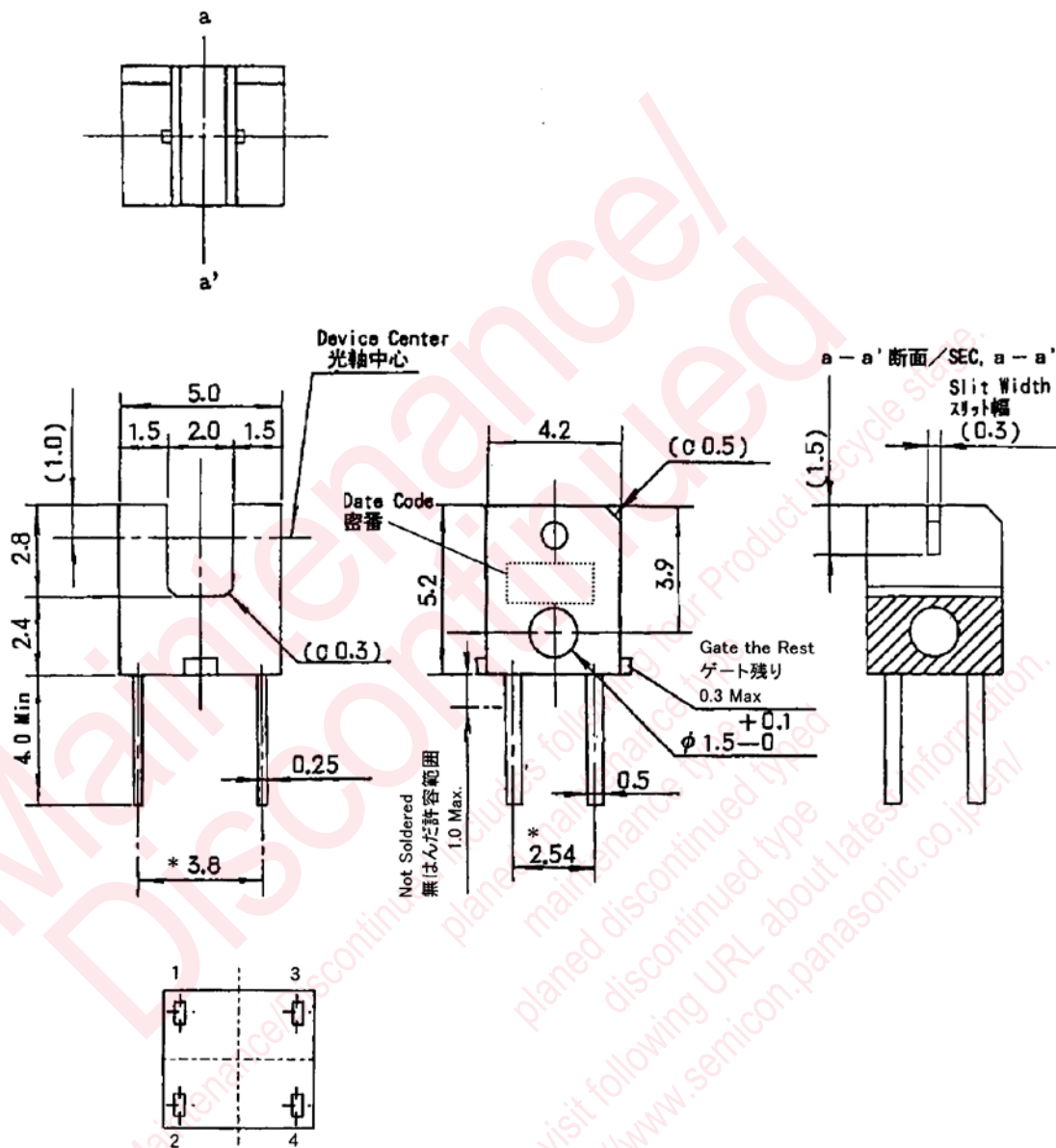
- planned maintenance type
- maintenace type
- planned discontinued type
- discontinued type

Please visit following URL about latest information.

<http://www.semicon.panasonic.co.jp/en/>

■ Package (Unit: mm)

LSMSIN4S0005



- (注 1)(Note1) *リード根元寸法とします / * Indicates root dimensions of lead.
- (注 2)(Note2) 指示無き寸法公差は±0.2 / Not appointment tolerance : ±0.2
- (注 3)(Note3) バリ寸法は 0.15 Max. / Barri measure : 0.15 Max.
- (注 4) 上記寸法は、バリ・ゲート残り等を含んでおりません
- (Note4) An aforementioned dimension doesn't include projects and gate the rest remainder.
- (注 5) 密番は、目視又は顕微鏡に於いて解読できる事
- (Note5) What a date code sees an attention and can decode in a microscope.

- Pin name
- 1: Anode
- 2: Cathode
- 3: Collector
- 4: Emitter

Restrictions in using the technical information and applications described in this book

This book is to be exported or provided to non-residents, the laws and regulations related to security export control, must be observed.

This book is to show the main characteristics and application circuit examples of the products. It does not constitute a warranty of any property right or other right owned by Panasonic Corporation or any other company as to the infringement upon any such right owned by any other company. The information described in this book.

This book is for standard applications or general electronic equipment (such as office equipment and household appliances).

Special applications:

Automobiles, traffic control equipment, combustion equipment, life support equipment, etc. where high reliability are required, or if the failure or malfunction of the product

are subject to change without notice for modification and/or improvement of the products, therefore, ask for the most up-to-date Product Information to satisfy your requirements.

Do not exceed the absolute maximum rating and the guaranteed operating conditions (such as temperature range). Especially, please be careful not to exceed the range of absolute maximum rating for turn-on and mode-switching. Otherwise, we will not be liable for any damage.



Please take into the consideration of incidence of break down and failure in the systems such as redundant design, arresting the spread of fire, personal injury, fire, social damages, for example, by using the products.

Performance and characteristics change due to external factors (ESD, EOS, electrostatic discharge) or at customer's process. When using products for which the shelf life and the elapsed time since first opening the packages.

Do not use the products partially, without the prior written permission of our company.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View ON1004 on WIN SOURCE](#)
-  [Panasonic Information](#)

Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management