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# GP1S44S1

## Transmissive Type Photointerrupter with Actuator

### ■ Features

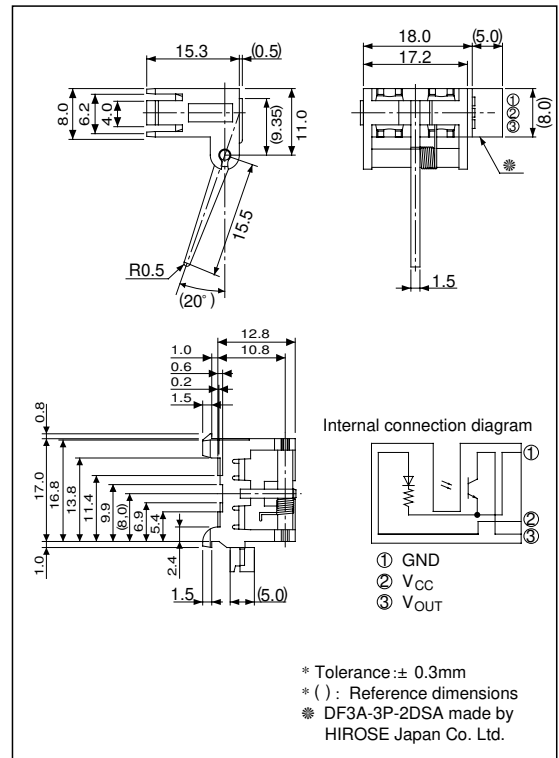
1. High sensing accuracy (Slit width : 0.5mm)
2. Easy wiring due to built-in connector
3. Snap-in mounting type in order to mount to an equipment easily

### ■ Applications

1. Copiers
2. Laser beam printers
3. Facsimiles

### ■ Outline Dimensions

( Unit : mm )



### ■ Absolute Maximum Ratings (Ta= 25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	- 0.5 to + 10	V
*1 Output voltage	V <sub>O</sub>	35	V
*2 Output current	I <sub>C</sub>	20	mA
*3 Output power dissipation	P <sub>O</sub>	75	mW
*4 Operating temperature	T <sub>opr</sub>	- 20 to + 75	°C
*4 Storage temperature	T <sub>stg</sub>	- 40 to + 85	°C

\*1 Collector-emitter voltage of phototransistor

\*2 Collector current of phototransistor

\*3 Collector dissipation of phototransistor

\*4 The connector should be plugged in/out at normal temperature.

**Electro-optical Characteristics**

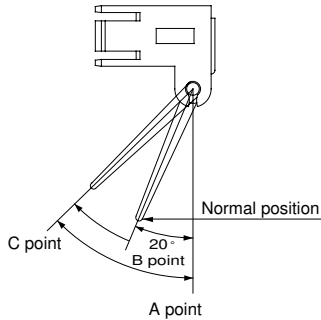
(Unless otherwise specified,  $V_{CC}=5V$ ,  $T_a=25^{\circ}C$ )

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Dissipation current	$I_{CC1}$	Light beam interrupted	-	-	20	mA
Dissipation current	$I_{CC2}$	Light beam uninterrupted	-	-	20	mA
Collector current	$I_{C1}$	Light beam interrupted, $V_o=5V$ , without external disturbing light illuminance	-	-	0.05	mA
	$I_{C2}$	Light beam uninterrupted, $V_o=5V$ without external disturbing light illuminance	0.25	-	-	mA
Operating supply voltage	$V_{CC}$	$T_a=-20$ to $+75^{\circ}C$	4.5	5.0	5.5	V

\*Condition of light beam interrupted : Lever is normal condition on the Fig.1

Condition of light beam uninterrupted : Lever is  $30^{\circ}$  or more movement condition from A point to B point on Fig.1

**Fig. 1 Detecting Position**

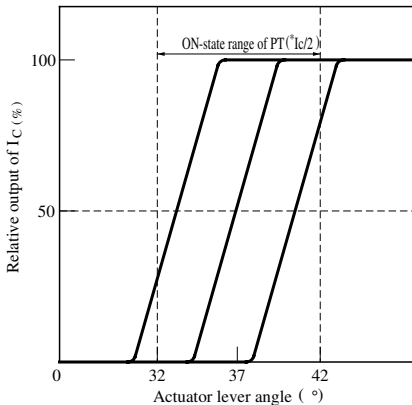


Phototransistor between A point and C point shall be ON-state when the actuator lever rotated ( $37^{\circ} \pm 5^{\circ}$ ) from normal condition A point to C point in Fig.1. At this time,  $I_{C}$  of phototransistor shall be ( $\hat{I}_{C}/2$ ).

$\hat{I}_{C}$  is an actual measurement value on collector current in electro-optical characteristics.

Normal condition B point shall be opaque condition.

**Fig. 2 Relative Output of  $I_c$  vs. Actuator Lever Angle**



**Mechanical Characteristics**

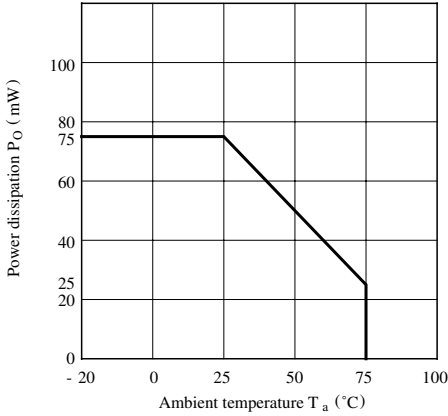
Lever starting torque :  $1x 10^{-4} N \cdot m$  or less

**Lever Life**

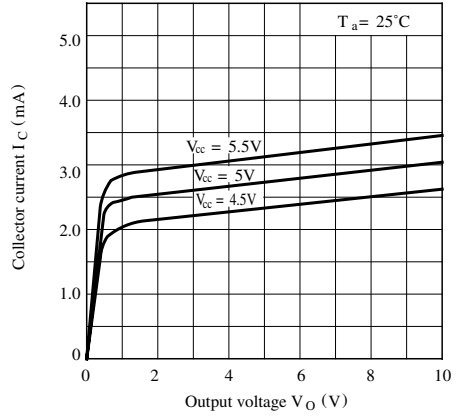
100 000 times or more

(Lever reciprocating operation between normal condition B point and C point at the condition of no load.)

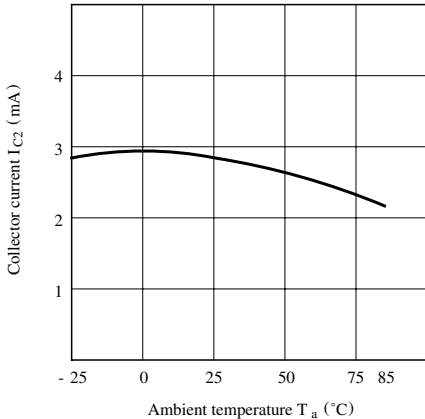
**Fig. 3 Power Dissipation vs. Ambient Temperature**



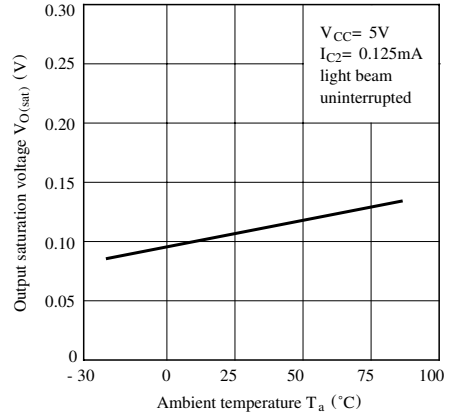
**Fig. 4 Collector Current vs. Output Voltage**



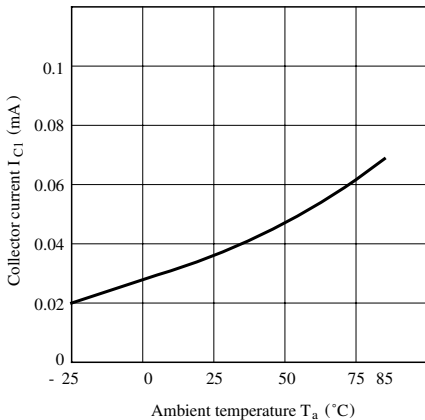
**Fig. 5 Collector Current 2 vs. Ambient Temperature (Light Beam Uninterrupted)**



**Fig. 6 Output Saturation Voltage vs. Ambient Temperature**



**Fig. 7 Collector Current 1 vs. Ambient Temperature (Light Beam Interrupted)**



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