

GP1S93

Subminiature Photointerrupter

■ Features

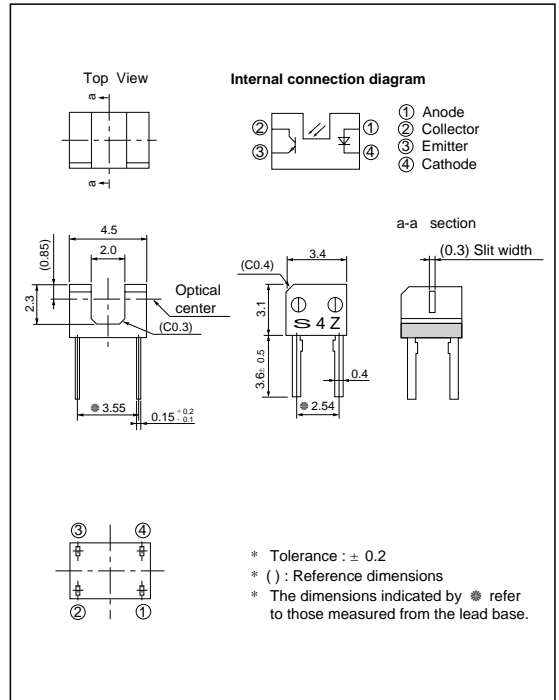
1. Low height type (Height : 3.1 mm)
2. Wide gap type (Gap : 2.0 mm)
3. Detector side slit width : (0.3) mm

■ Applications

1. FDDs
2. Cameras
3. Camera-integral VCRs

■ Outline Dimensions

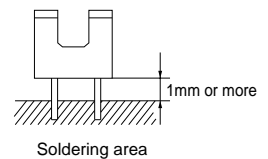
(Unit : mm)



■ Absolute Maximum Ratings

(Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I _F	50	mA
	Reverse voltage	V _R	6	V
	Power dissipation	P	75	mW
Output	Collector-emitter voltage	V _{CEO}	35	V
	Emitter-collector voltage	V _{ECO}	6	V
	Collector current	I _C	20	mA
	Collector power dissipation	P _C	75	mW
Total power dissipation		P _{tot}	100	mW
Operating temperature		T _{opr}	- 25 to + 85	°C
Storage temperature		T _{stg}	- 40 to + 100	°C
*1 Soldering temperature		T _{sol}	260	°C



*1 For 5 seconds

■ **Electro-optical Characteristics**

($T_a=25^{\circ}\text{C}$)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	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	Dark current	I_{CEO}	$V_{CE} = 20\text{V}$	-	-	1×10^{-7}	A
Transfer characteristics	Collector current	I_C	$I_F = 5\text{mA}, V_{CE} = 5\text{V}$	100	-	400	μA
	Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_F = 10\text{mA}, I_C = 40 \mu\text{A}$	-	-	0.4	V
	Response time	Rise time	t_r	$I_C = 0.1\text{mA}, V_{CE} = 5\text{V}, R_L = 1\text{k}\Omega$	-	50	150
Fall time		t_f	-		50	150	μs

Fig. 1 Forward Current vs. Ambient Temperature

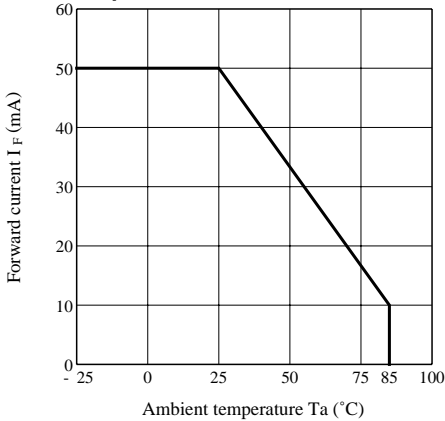


Fig. 2 Power Dissipation vs. Ambient Temperature

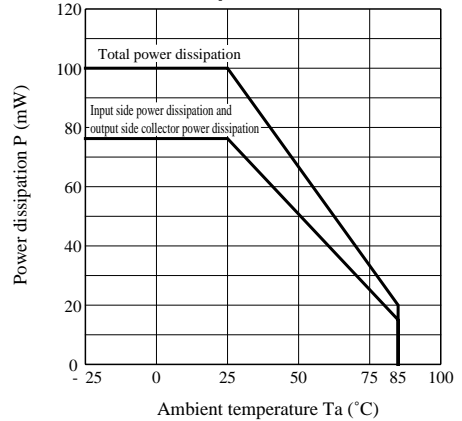


Fig. 3 Forward Current vs. Forward Voltage

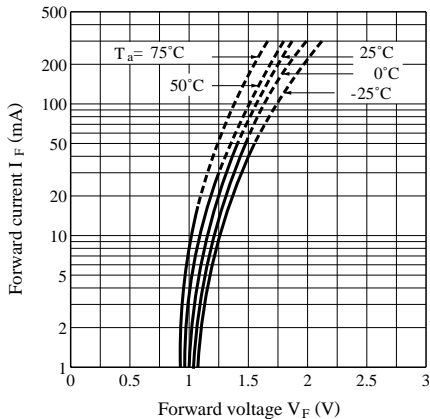


Fig. 4 Collector Current vs. Forward Current

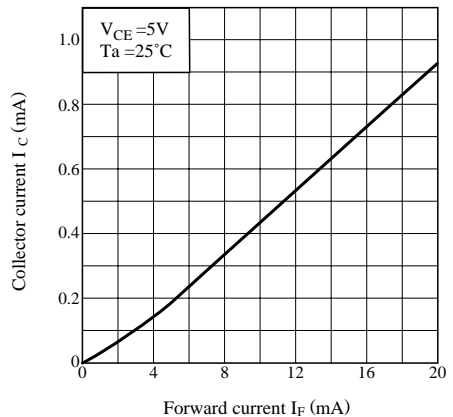


Fig. 5 Collector Current vs. Collector-emitter Voltage

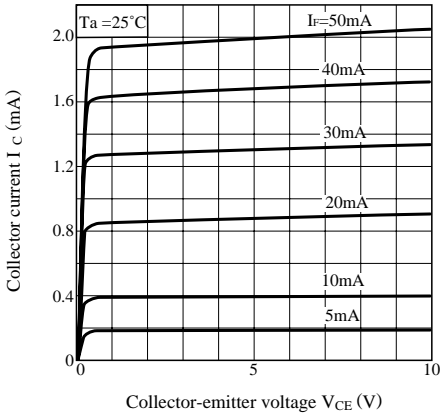


Fig. 6 Relative Collector Current vs. Ambient Temperature

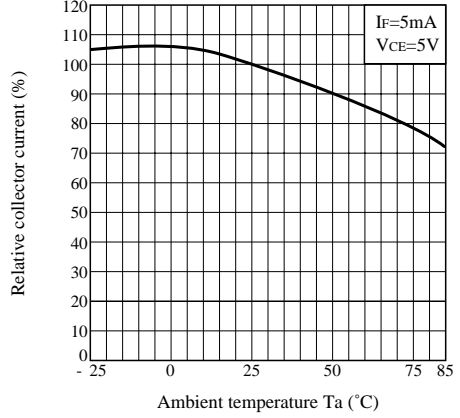


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

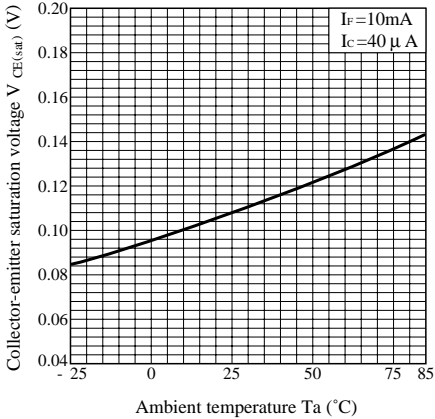


Fig. 8 Dark Current vs. Ambient Temperature

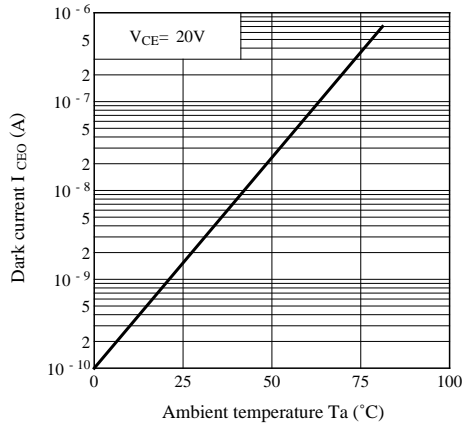
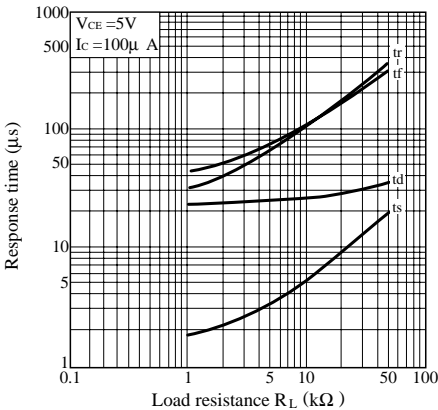


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

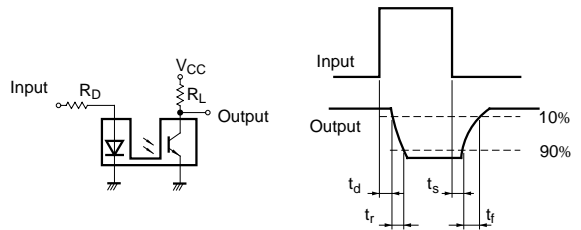


Fig. 10 Detecting Position Characteristics (1)

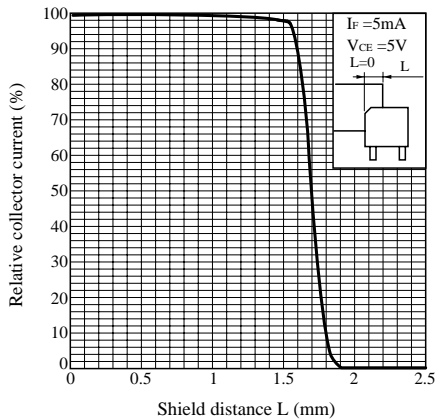
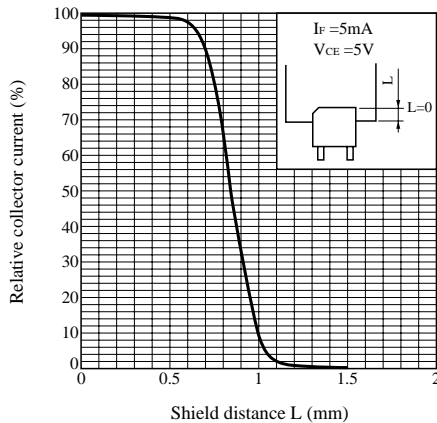


Fig. 11 Detecting Position Characteristics (2)



● Please refer to the chapter "Precautions for Use".