

GP1S33

Subminiature, Reflow Soldering Type Photointerrupter

Features

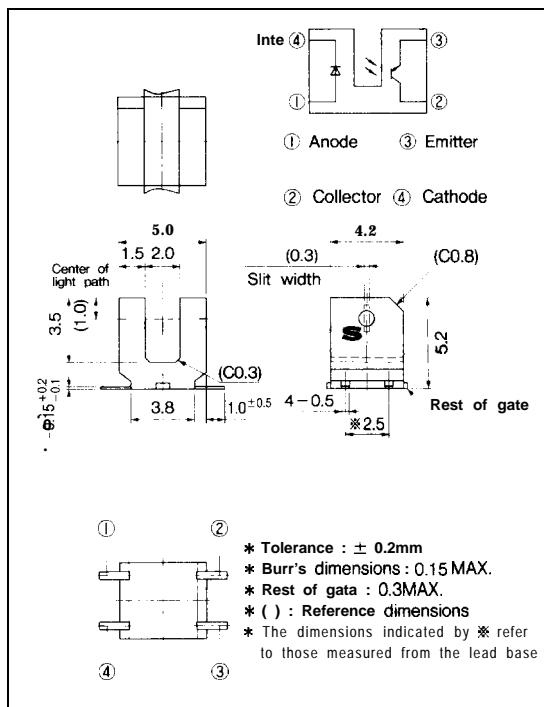
1. Ultra-compact package
2. PWB mounting type
3. High sensing accuracy (Slit width : 0.3mm)
4. Applying to reflow soldering
 Preheat :160°C within 120 seconds
 Reflow :200°C within 60 seconds
 (Peak :240°C)

Applications

1. Floppy disk drives
2. Cameras

Outline Dimensions

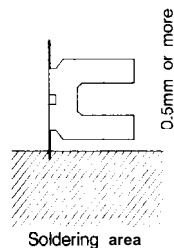
(Unit : mm)



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
*rating temperature		T _{opr}	-25 to + 85	°C
Storage temperature		T _{stg}	-40 to + 100	°C
*1 Soldering temperature		T _{soi}	260	°C



*1 For 3 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	Collector dark current	I_{CEO}	$V_{CE} = 20\text{V}$		—	100*	nA	
Transfer characteristics	Collector current	I_C	$V_{CE} = 5\text{V}, I_F = 5\text{mA}$	100		600	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	$V_{CE} = 5\text{V}, I_C = 100\mu\text{A}$	—	50	150	μs
		Fall time	t_f	$R_L = 1\,000\ \Omega$	—	50	150	μs

Fig. 1 Forward Current vs. Ambient Temperature

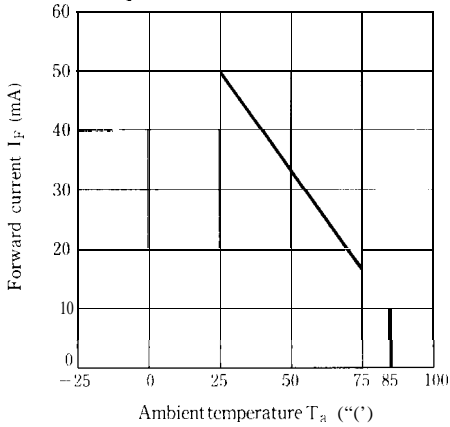


Fig. 2 Power Dissipation vs. Ambient Temperature

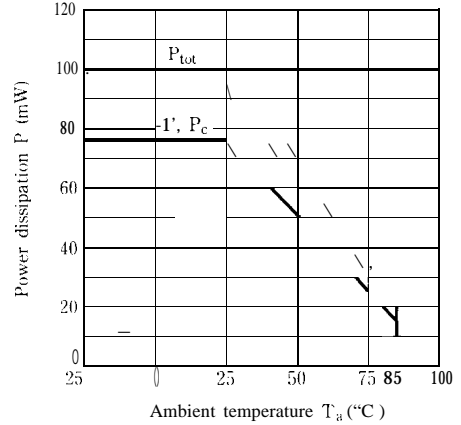


Fig. 3 Forward Current vs. Forward Voltage

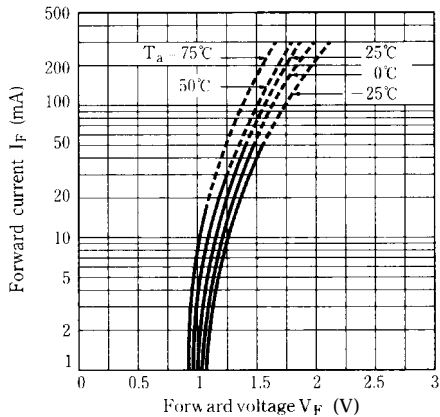


Fig. 4 Collector Current vs. Forward Current

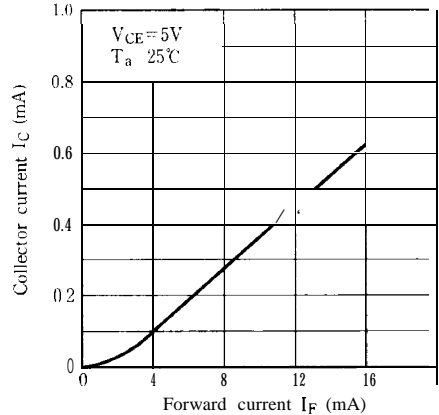


Fig. 5 Collector Current vs. Collector-emitter Voltage

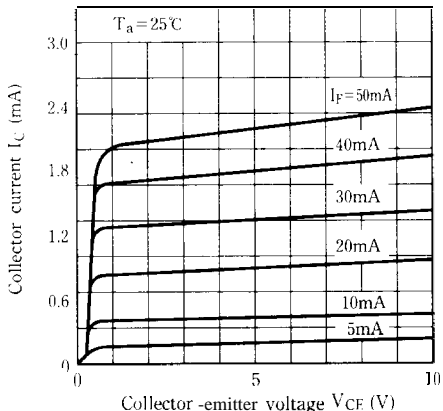


Fig. 6 Collector Current vs. Ambient Temperature

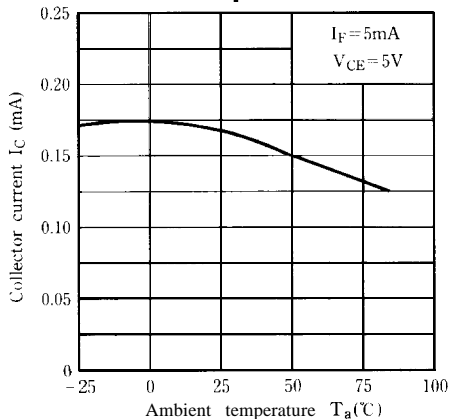


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

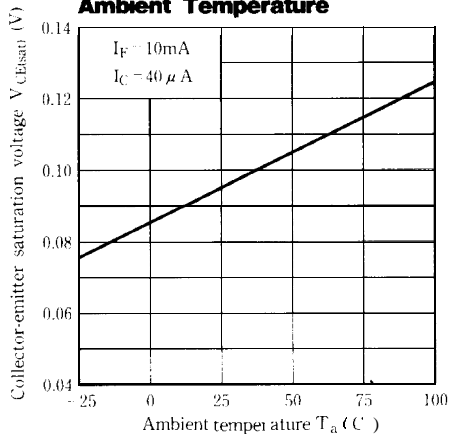


Fig. 8 Collector Dark Current vs. Ambient Temperature

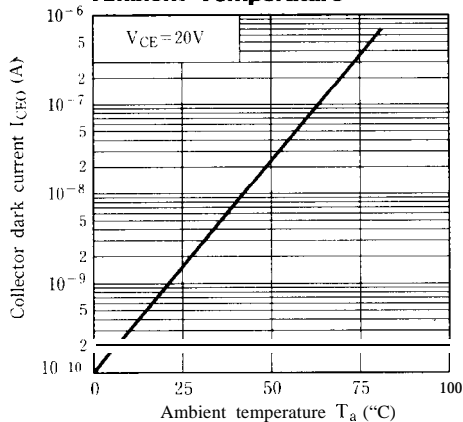
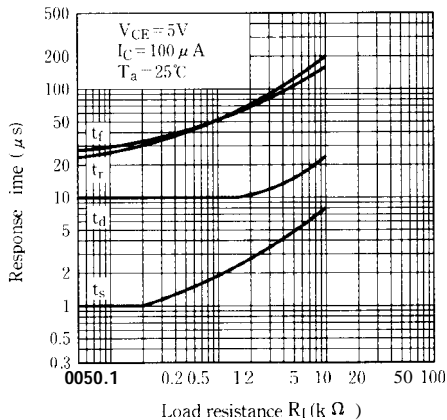


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

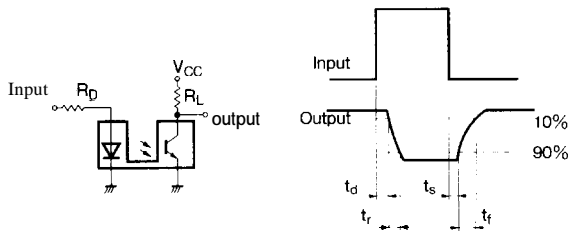


Fig.10 Relative Collector Current vs. Shield Distance (1)

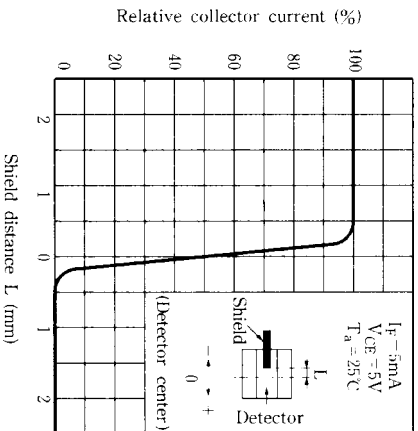
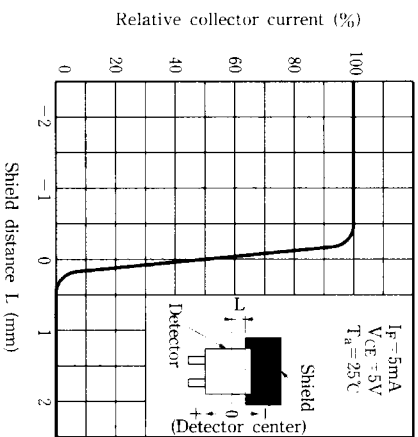


Fig.11 Relative Collector Current vs. Shield Distance (2)



- Please refer to the chapter “Precautions for Jse” (Page 78 to 93).