

GP1L27

Subminiature, High Sensitivity Photointerrupter

■ Features

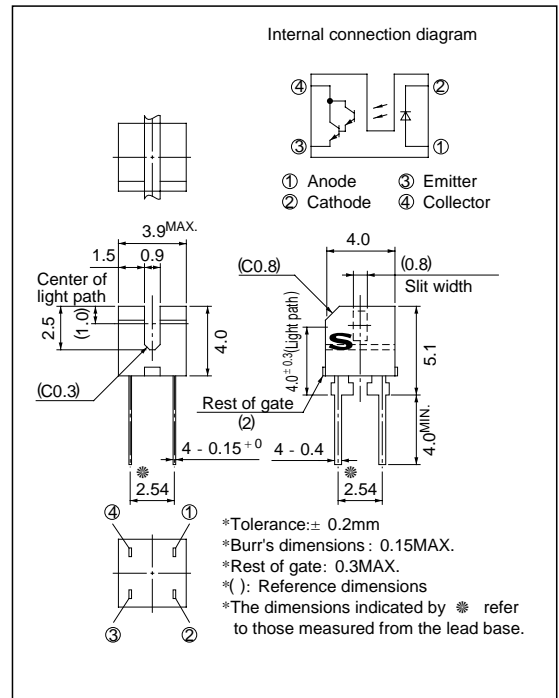
1. Ultra-compact, high sensitivity
(CTR: MIN. 50%)
2. PWB direct mounting type

■ Applications

1. Cameras
2. Floppy disk drives

■ Outline Dimensions

(Unit : mm)

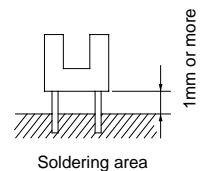


■ Absolute Maximum Ratings

(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	40	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	Collector dark current	I_{CEO}	$V_{CE} = 10\text{V}$	-	-	10^{-6}	A	
Transfer-characteristics	Collector Current		I_C	$V_{CE} = 2\text{V}, I_F = 1\text{mA}$	0.5	-	15	mA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	$I_F = 2\text{mA}, I_C = 0.5\text{mA}$	-	-	1.0	V
	Response time	Rise time	t_r	$V_{CE} = 2\text{V}, R_L = 100\Omega$ $I_C = 10\text{mA}$	-	80	400	μs
		Fall time	t_f		-	70	350	μs

Fig. 1 Forward Current vs. Ambient Temperature

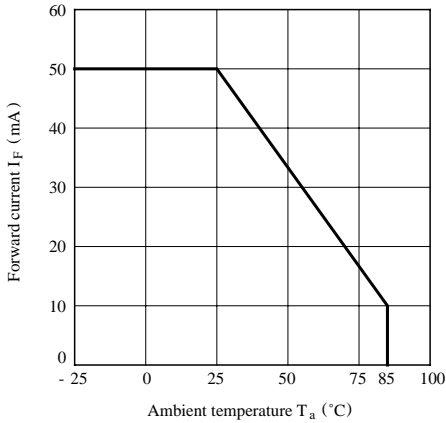


Fig. 2 Power Dissipation vs. Ambient Temperature

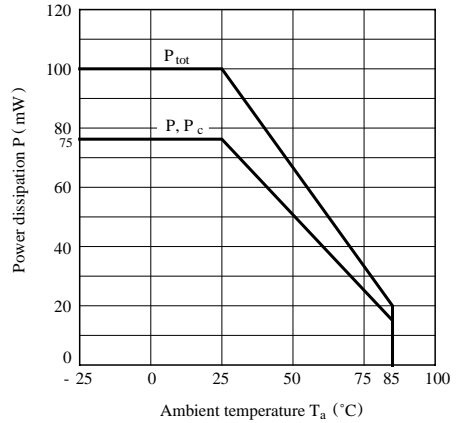


Fig. 3 Forward Current vs. Forward Voltage

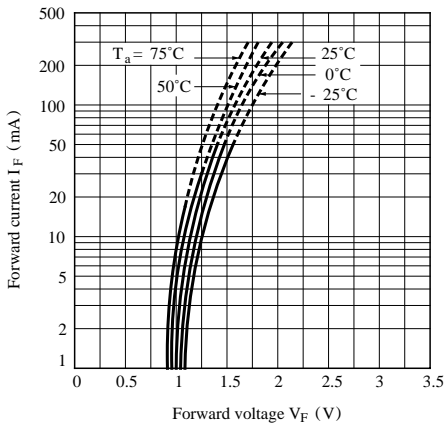


Fig. 4 Collector Current vs. Forward Current

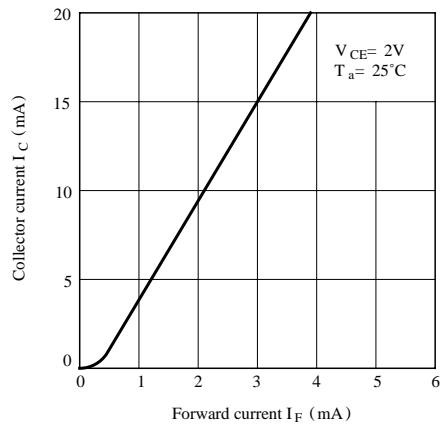


Fig. 5 Collector Current vs. Collector-emitter Voltage

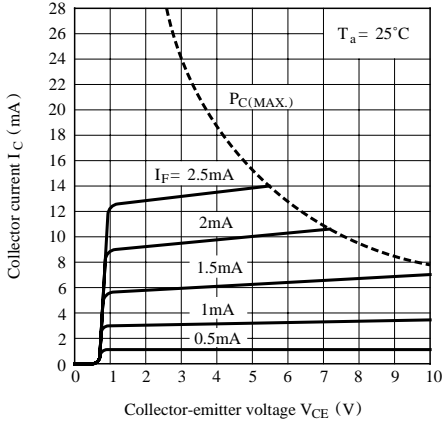


Fig. 6 Collector Current vs. Ambient Temperature

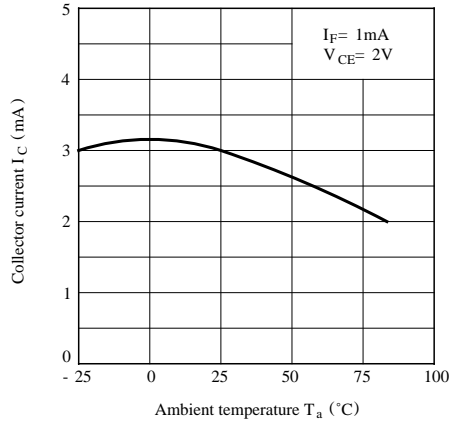


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

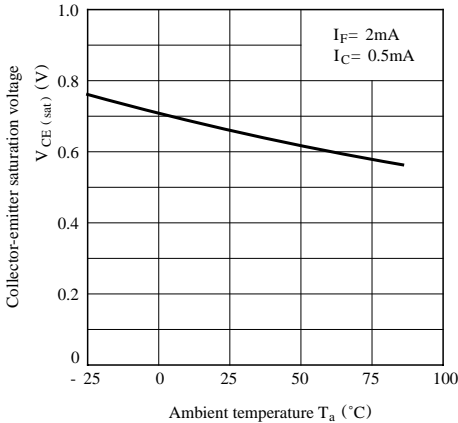


Fig. 8 Response Time vs. Load Resistance

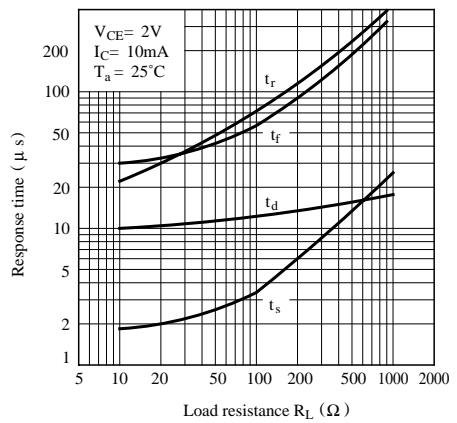
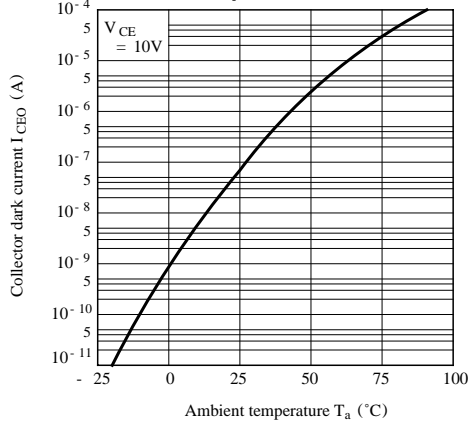


Fig. 9 Collector Dark Current vs. Ambient Temperature



Test Circuit for Response Time

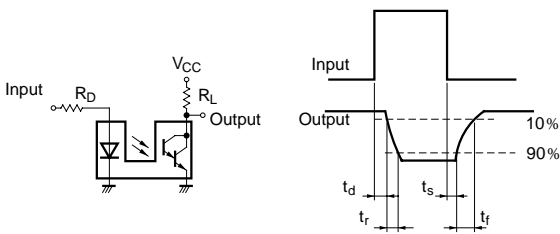


Fig.10 Relative Collector Current vs. Shield Distance (1)

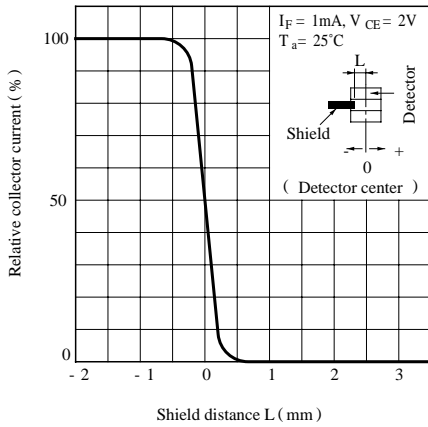
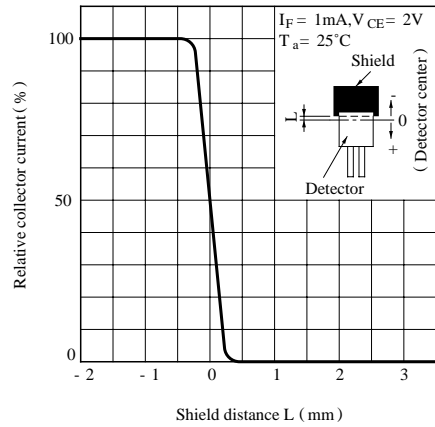


Fig.11 Relative Collector Current vs. Shield Distance (2)



■ Precautions for Use

- (1) Please refrain from soldering under preheating and refrain from soldering by reflow.
- (2) As for other general cautions, refer to the chapter "Precautions for Use".