

GP1L27

Subminiature, **High** Sensitivity Photointerrupter

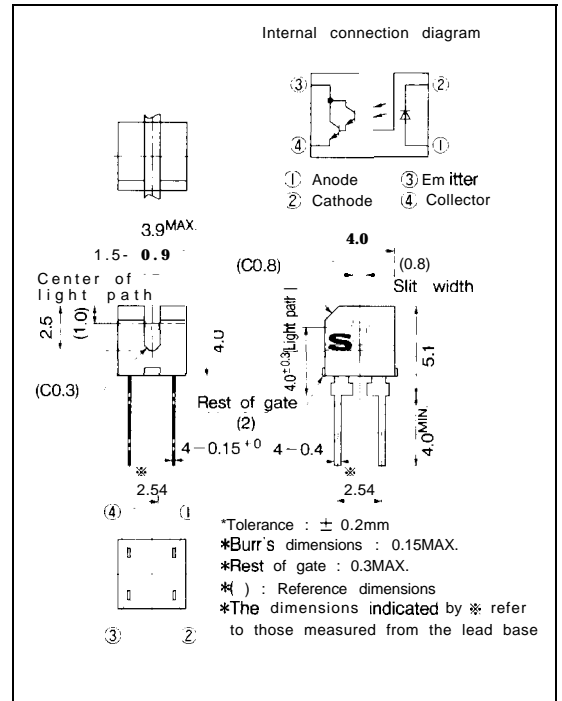
■ Features

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

■ Applications

1. Cameras
2. Floppy disk drives

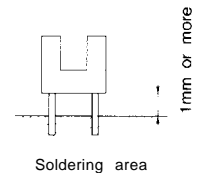
■ outline Dimensions (Unit : mm)



■ 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	I 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

(Ta = 25°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_{CFO}	$V_{CE} = 10\text{V}$	—	—	10^{-6}	A				
Transfer characteristics	Current transfer ratio	CTR	$V_{CE} = 2\text{V}, I_F = 1\text{mA}$	50	—	1500	%				
	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	$V_{CE} = 2\text{V}, R_I = 100\Omega$	—	80	400	μs
					Fall time	t_f	$I_L = 10\text{mA}$	—	70	350	μs

Fig. 1 Forward Current vs. Ambient Temperature

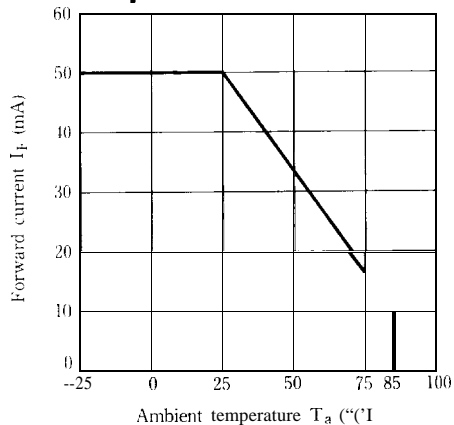


Fig. 2 Power Dissipation vs. Ambient Temperature

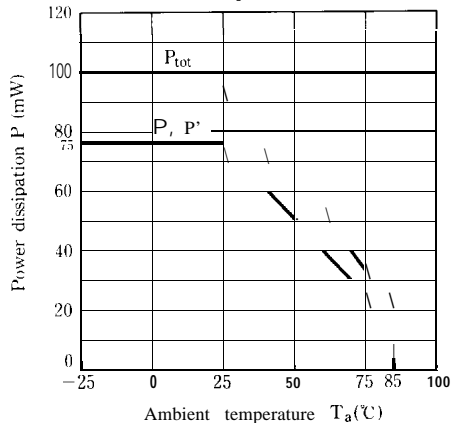


Fig. 3 Forward Current vs. Forward Voltage

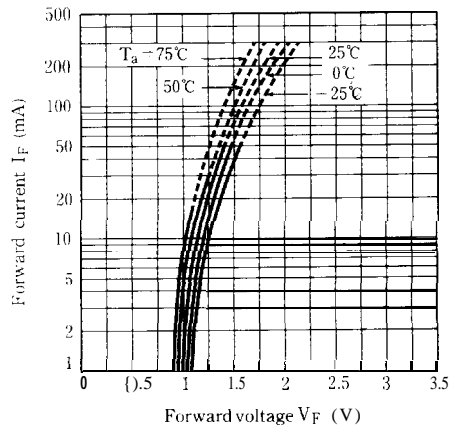
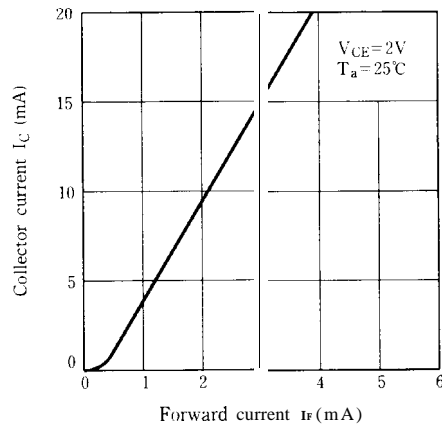


Fig. 4 Collector Current vs. Forward Current



Photointerrupters

Fig. 5 Collector Current vs. Collector-emitter Voltage

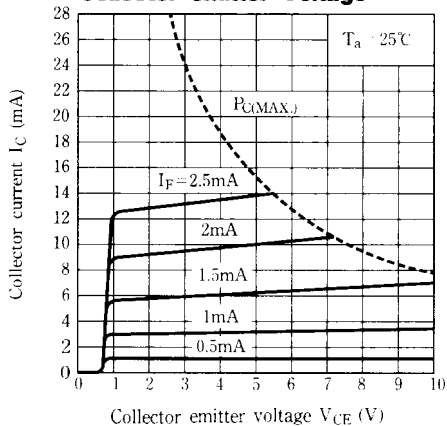


Fig. 6 Collector Current vs. Ambient Temperature

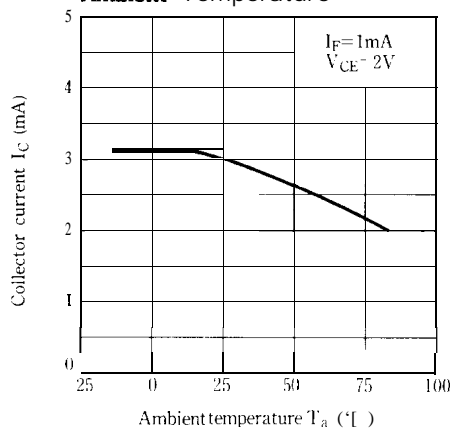


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

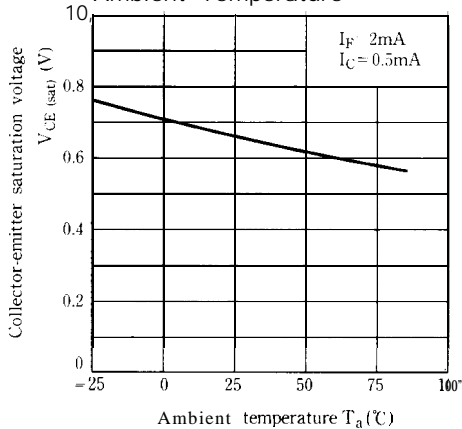
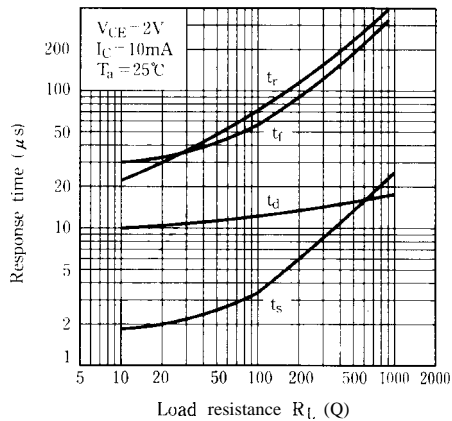


Fig. 8 Response Time vs. Load Resistance



Test Circuit for Response Time

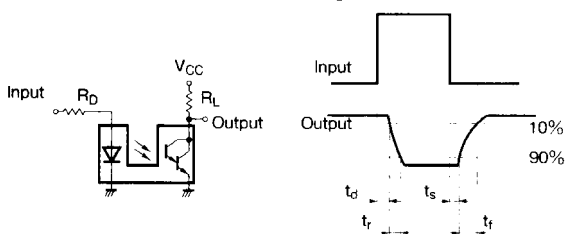


Fig. 9 Collector Dark Current vs. Ambient Temperature

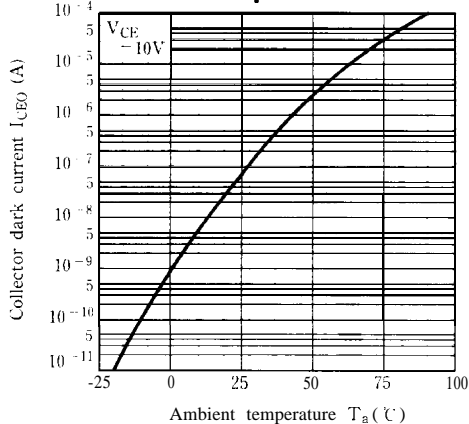


Fig.10 Relative Collector Current vs. Shield Distance (1)

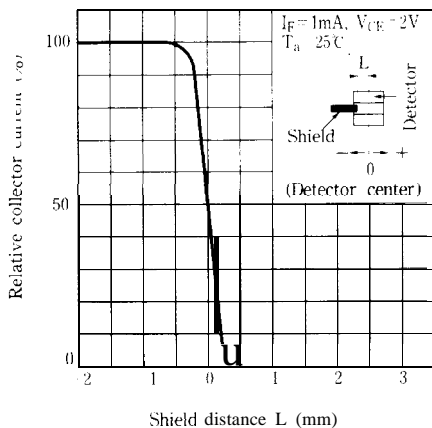
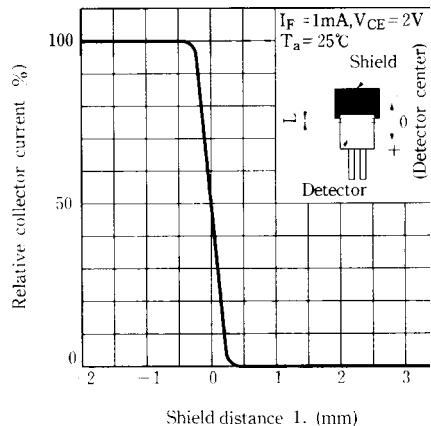


Fig.11 Relative Collector Current vs. shield Distance (2)



■ 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" (Page 78 to 93).

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