

GP1L21/GP1L22

Subminiature, **High**
Sensitivity
Photointerrupter

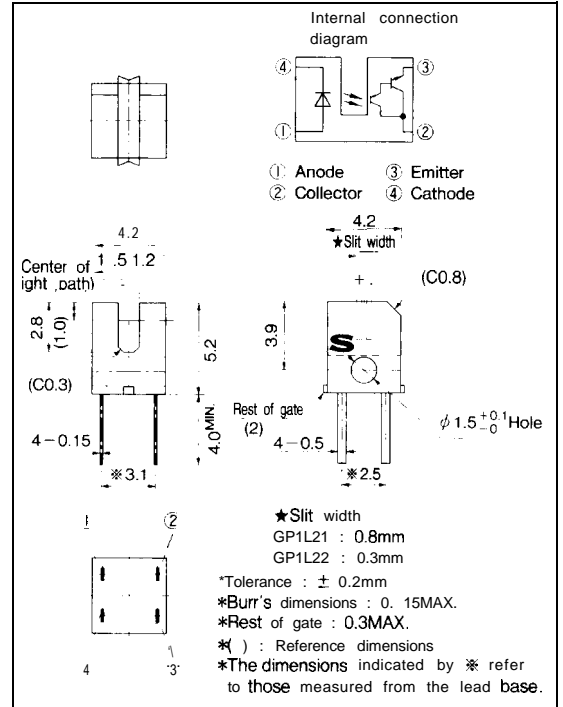
■ Features

1. Ultra-compact (Capacity : 0.06cc)
2. High sensing accuracy
(Slit width: 0.3mm **GP1L22**)
3. High current transfer ratio
CTR : MIN. 40%, GP1L21
(' MIN. 20%, **GP1L22**)
4. PWB direct mounting type
5. With mounting hole

■ Applications

1. Cameras
2. Floppy disk drives

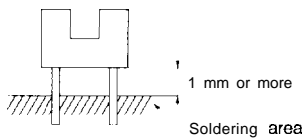
■ Outline Dimensions (Unit : mm)



■ 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	Current transfer ratio	CTR	$V_{CE} = 2\text{V}, I_F = 1\text{mA}$	40		1 500	%
			$V_{CE} = 2\text{V}, I_F = 1\text{mA}$	20		700	%
	Collector emitter saturation voltage	$V_{CE(sat)}$	$I_F = 2\text{mA}, I_C = 0.4\text{mA}$		—	1.0	V
			$I_F = 2\text{mA}, I_C = 0.4\text{mA}$		—	1.0	V
Response time	Rise time	t_r	$V_{CE} = 2\text{V}, I_C = 10\text{mA}$		80	400	μs
	Fall time	t_f	$R_L = 100\Omega$		—	70	350

Fig. 1 Forward Current vs. Ambient Temperature

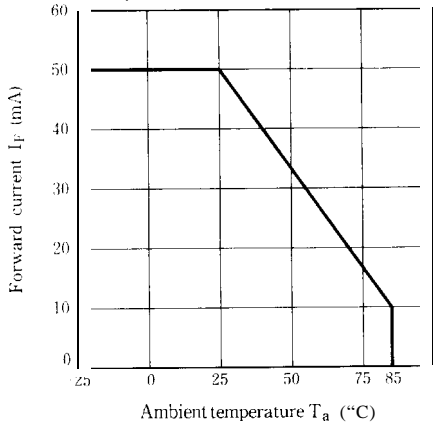


Fig. 2 Power Dissipation vs. Ambient Temperature

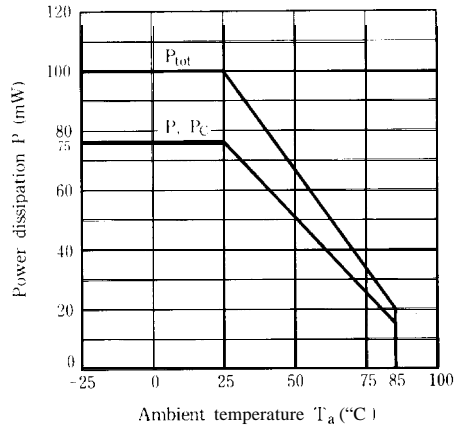


Fig. 3 Forward Current vs. Forward Voltage

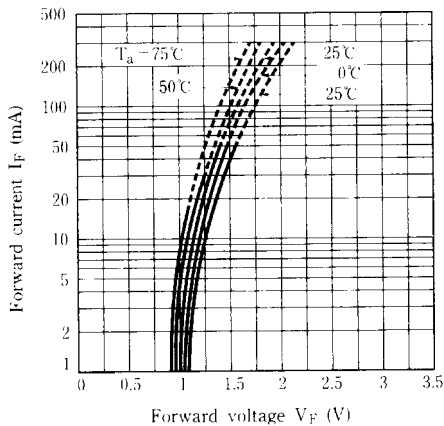
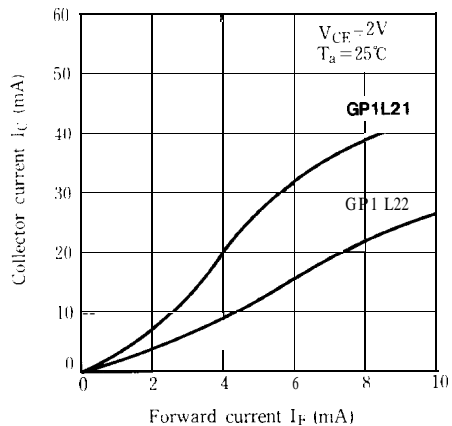


Fig. 4 Collector Current vs. Forward Current



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Fig. 5-a Collector Current vs. Collector-emitter Voltage (GP1L21)

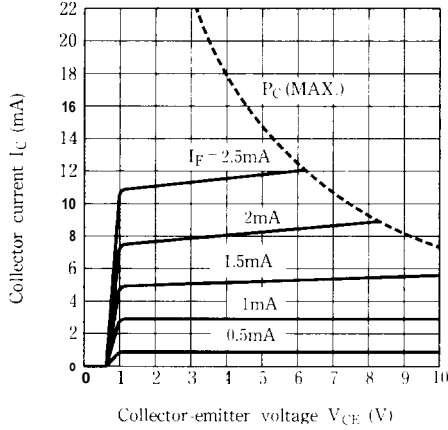


Fig. 5-b Collector Current vs. Collector-emitter Voltage (GP1S22)

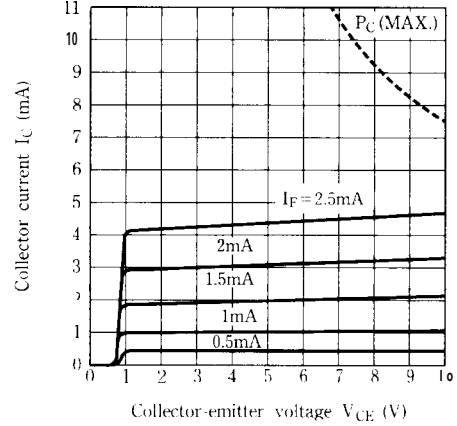


Fig. 6 Collector Current vs. Ambient Temperature

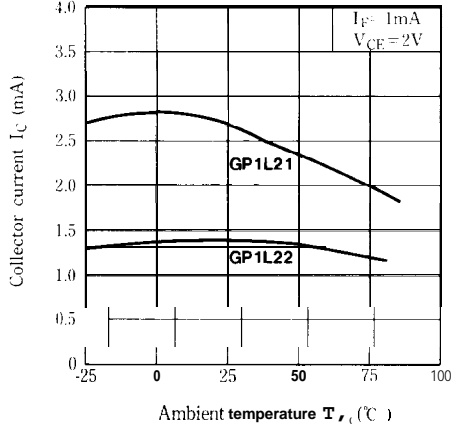


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

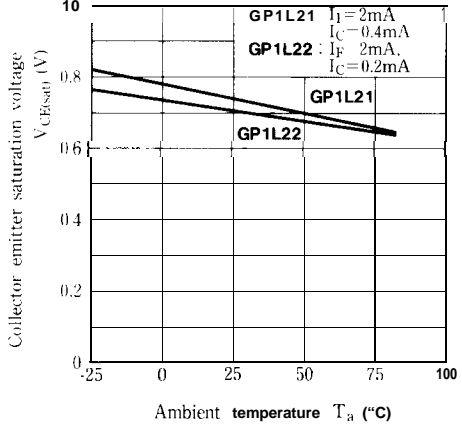
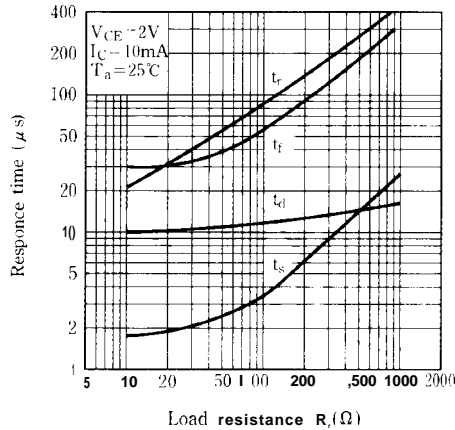


Fig. 8 Response Time vs. Load Resistance



Test Circuit for Response Time

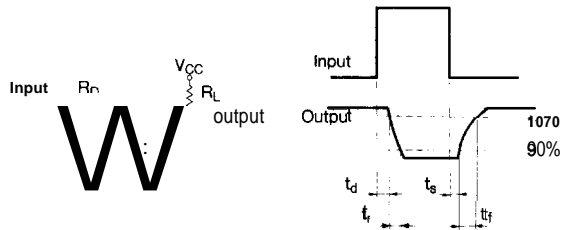


Fig. 9 Collector Dark Current vs. Ambient Temperature

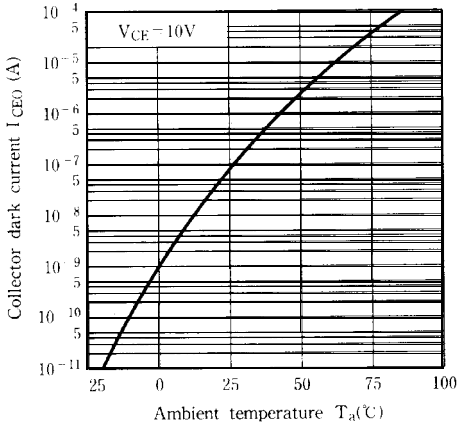


Fig.10-a Relative Collector Current Ve. Shield Distance (GP1L21)

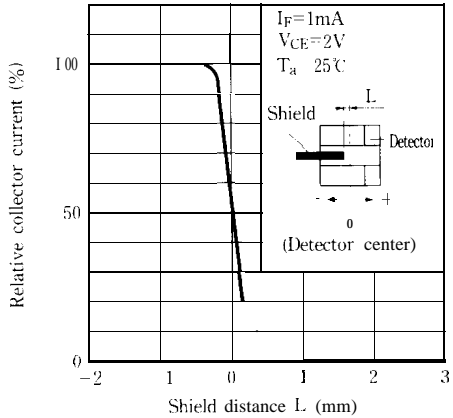


Fig.10-b Relative Collector Current Va. shield Distance (GP1L21)

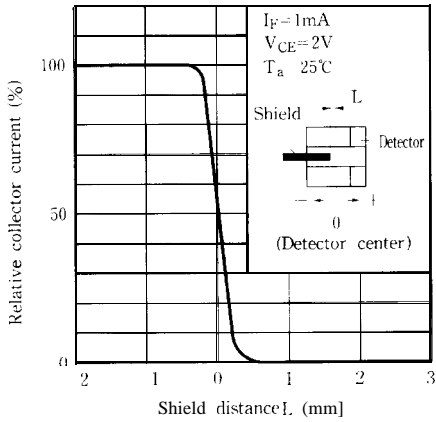
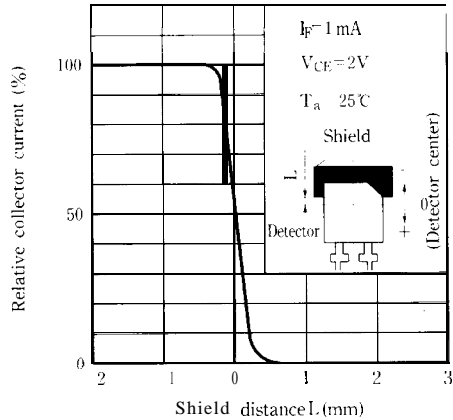


Fig.11 Relative Collector Current vs. shield Dicta-(2)



● Please refer to the chapter "Precautions for Use" (Page 78 to 93)

