

GP1L21/GP1L22

Subminiature, High Sensitivity Photointerrupter

■ Features

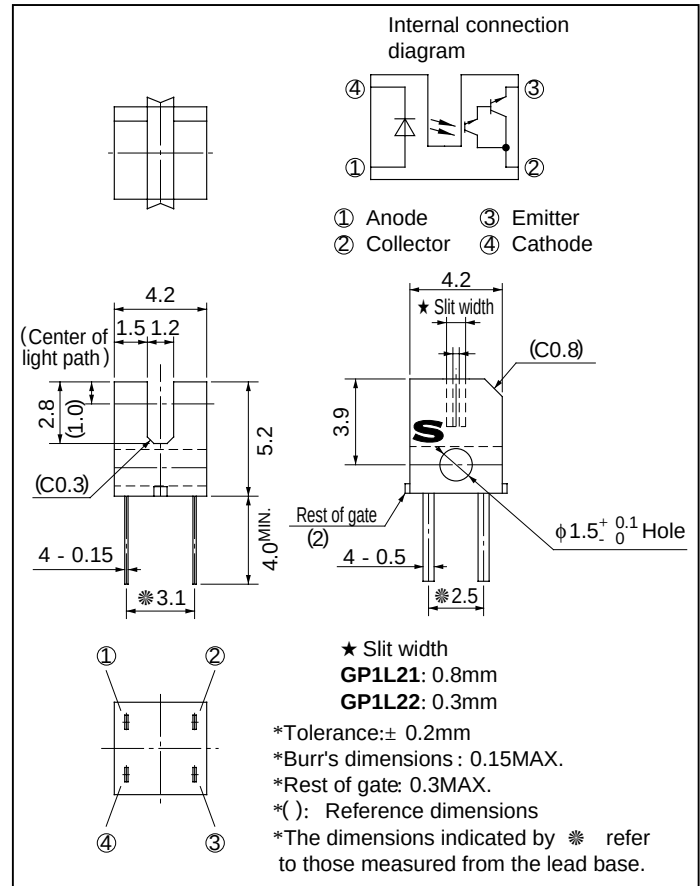
1. Ultra-compact (Capacity: 0.06cc)
2. High sensing accuracy
(Slit width: 0.3mm **GP1L22**)
3. High current transfer ratio
(CTR: MIN. 40%, **GP1L21**
MIN. 20%, **GP1L22**)
4. PWB direct mounting type
5. With mounting hole

■ Applications

1. Cameras
2. Floppy disk drives

■ Outline Dimensions

(Unit: mm)

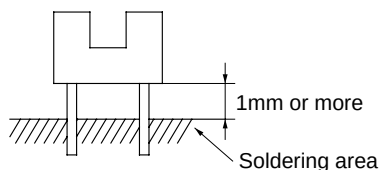


■ Absolute Maximum Ratings

(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

(Ta = 25°C)

Parameter			Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage		V _F	I _F = 20mA	-	1.2	1.4	V
	Reverse current		I _R	V _R = 3V	-	-	10	μ A
Output	Collector dark current		I _{CEO}	V _{CE} = 10V	-	-	10 ⁻⁶	A
Transfer charac- teristics	Collector Current	GP1L21	I _C	V _{CE} = 2V, I _F = 1mA	0.4	-	15	mA
		GP1L22		V _{CE} = 2V, I _F = 1mA	0.2	-	7	mA
	Collector-emitter saturation voltage	GP1L21	V _{CE(sat)}	I _F = 2mA, I _C = 0.4mA	-	-	1.0	V
		GP1L22		I _F = 2mA, I _C = 0.2mA	-	-	1.0	V
	Response time	Rise time	t _r	V _{CE} = 2V, I _C = 10mA	-	80	400	μ s
		Fall time	t _f		R _L = 100Ω	-	70	350

Fig. 1 Forward Current vs. Ambient Temperature

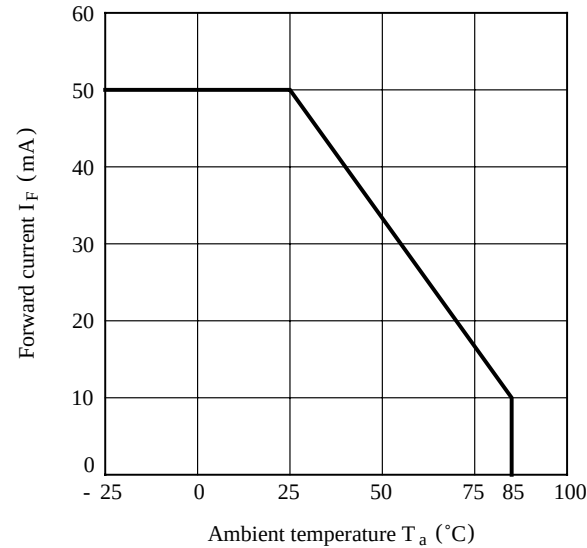


Fig. 2 Power Dissipation vs. Ambient Temperature

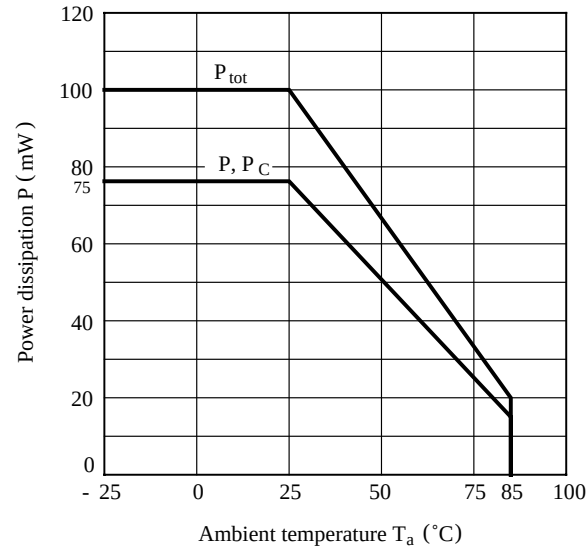


Fig. 3 Forward Current vs. Forward Voltage

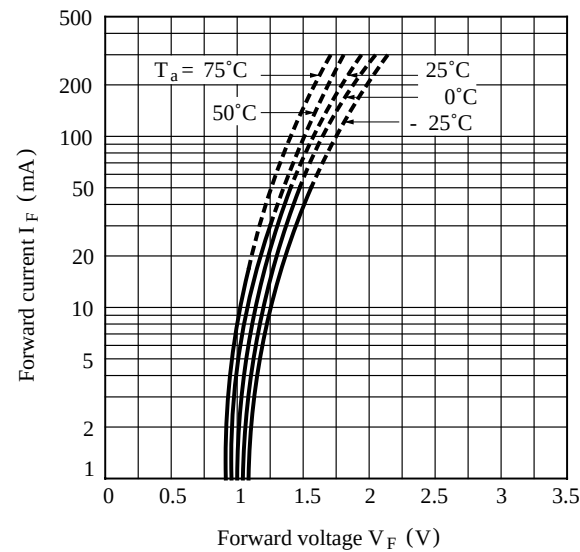


Fig. 4 Collector Current vs. Forward Current

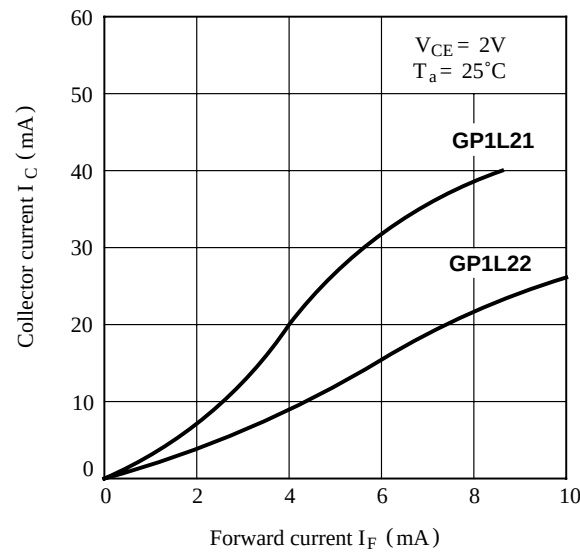


Fig. 5-a Collector Current vs. Collector-emitter Voltage (GP1L21)

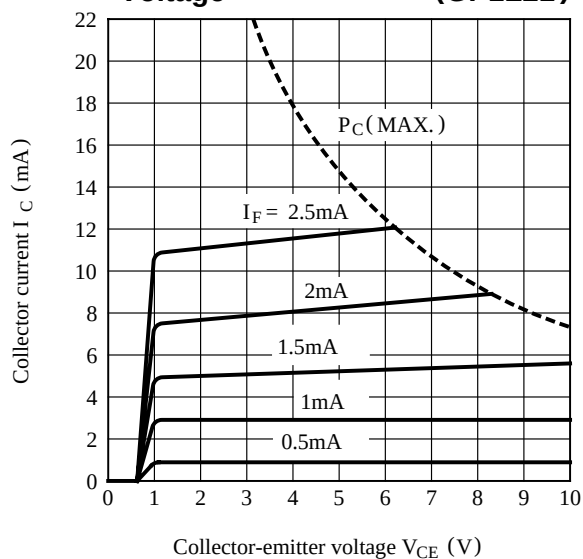


Fig. 5-b Collector Current vs. Collector-emitter Voltage (GP1S22)

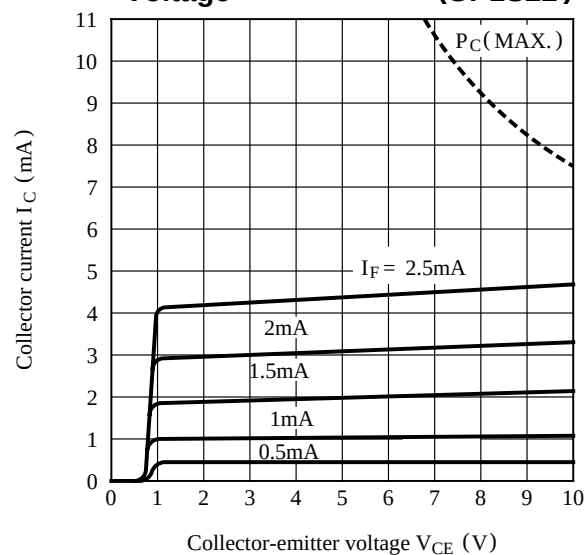


Fig. 6 Collector Current vs. Ambient Temperature

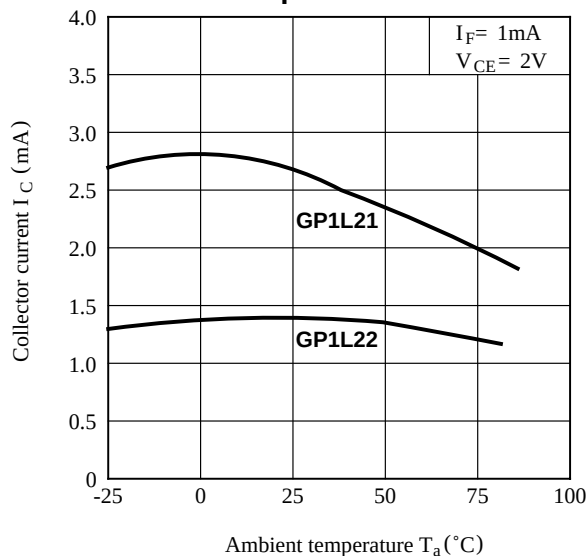


Fig. 7 Collector-emitter Saturation Voltage vs. Ambient Temperature

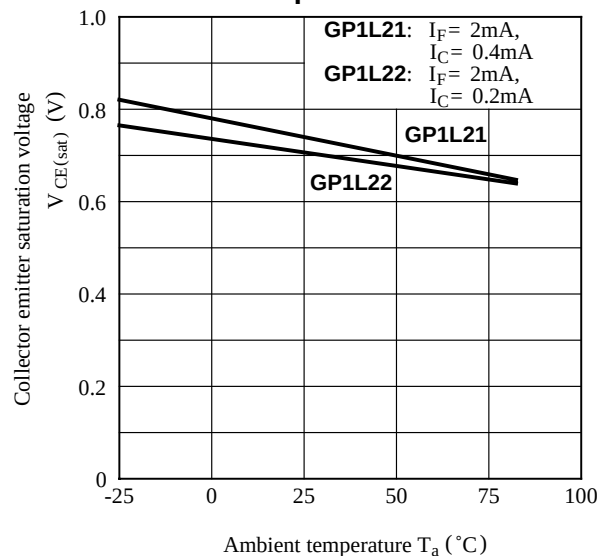
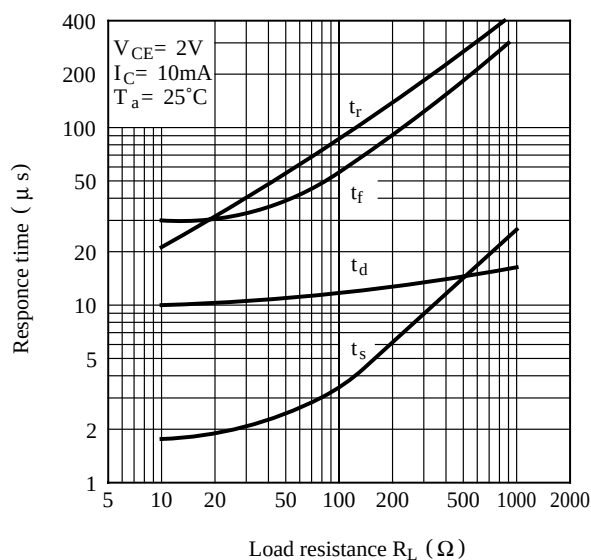


Fig. 8 Response Time vs. Load Resistance



Test Circuit for Response Time

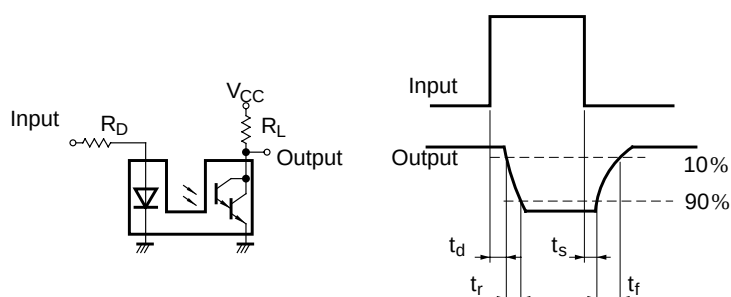


Fig. 9 Collector Dark Current vs. Ambient Temperature

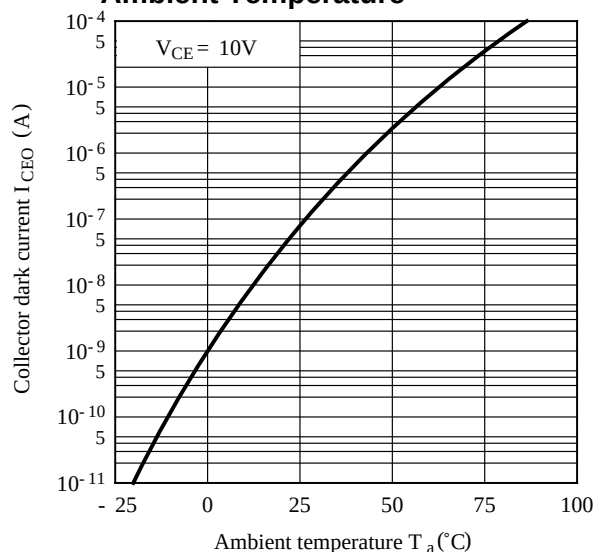


Fig.10-a Relative Collector Current vs. Shield Distance (1) (GP1L21)

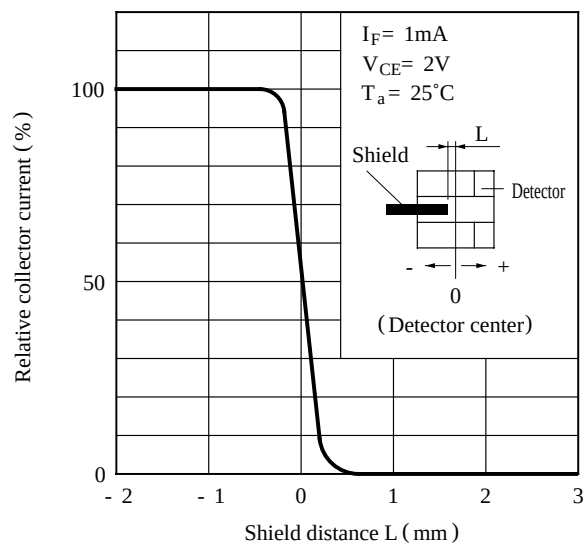


Fig.10-b Relative Collector Current vs. Shield Distance (1) (GP1L22)

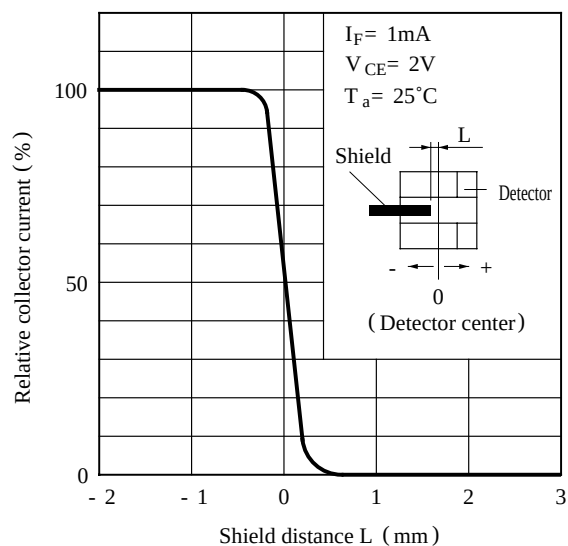
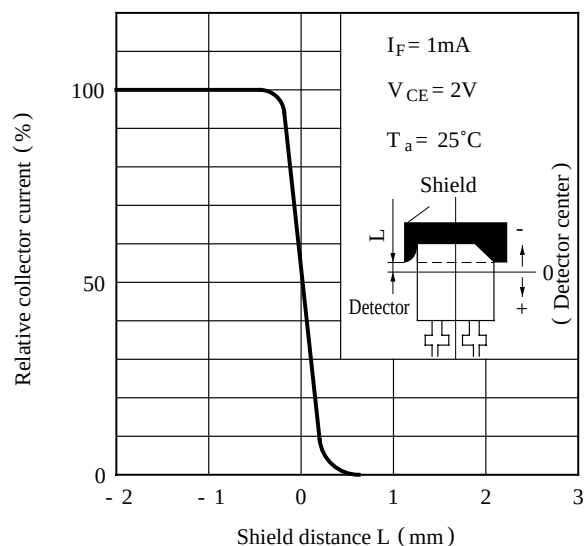


Fig.11 Relative Collector Current vs. Shield Distance (2)



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