

T-41-73

GP2L04/GP2L06 /GP2L09

Subminiature, High Sensitivity Photointerrupter

■ Features

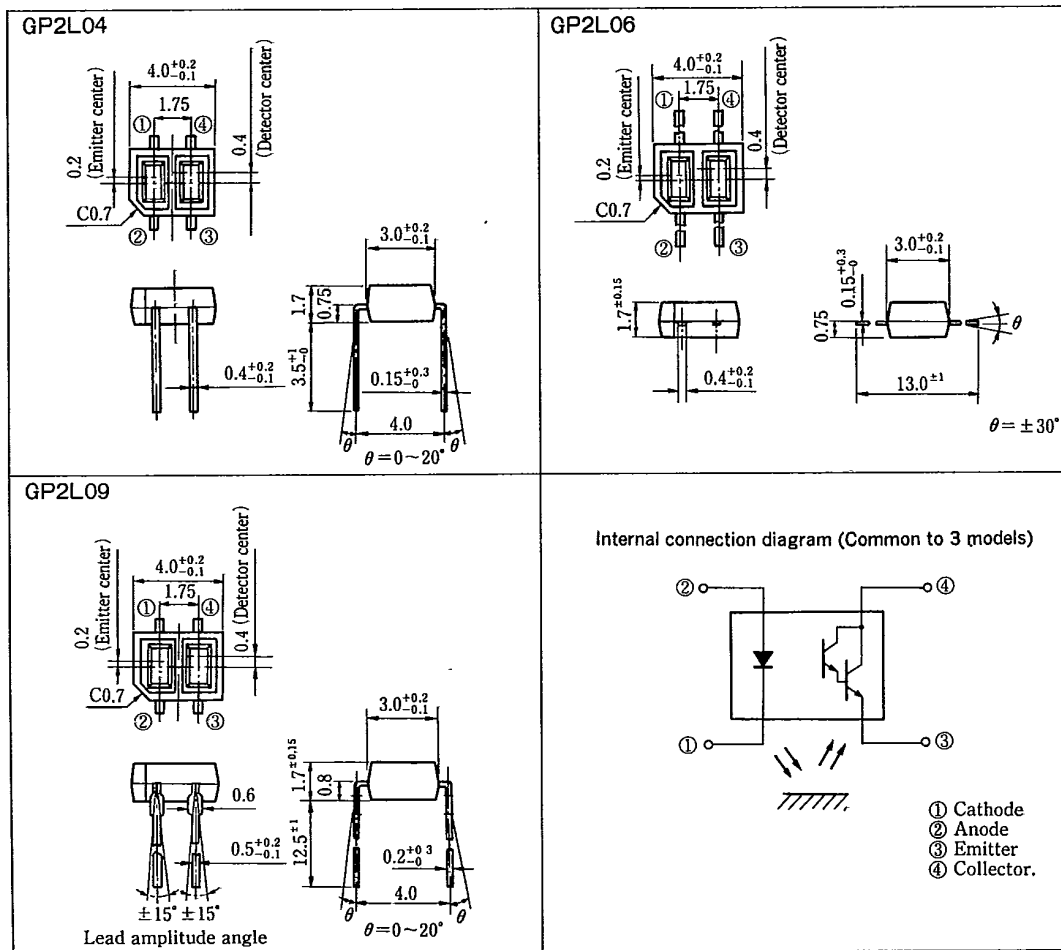
1. Compact and thin
GP2L04: Compact DIP type
GP2L06: Flat lead type
GP2L09: Compact DIP, long lead type
2. Optimal detection distance: 0.8~1mm
3. High sensitivity
(I_c : MIN. 0.5mA at $I_F = 4mA$)
4. Visible light cut-off type

■ Applications

1. Cassette tape recorders, VCRs
2. Floppy disk drives
3. Various microcomputerized control equipment

■ Outline Dimensions

(Unit : mm)



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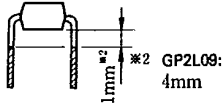
■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Input	Forward current	I_F	50 mA
	Reverse voltage	V_R	6 V
	Power dissipation	P_D	75 mW
Output	Collector-emitter voltage	V_{CE0}	35 V
	Emitter-collector voltage	V_{ECO}	6 V
	Collector current	I_C	50 mA
	Collector power dissipation	P_C	75 mW
	Total power dissipation	P_{tot}	100 mW
Operating temperature	T_{opr}	-25 ~ +85	°C
Storage temperature	T_{stg}	-40 ~ +100	°C
*1 Soldering temperature	T_{sol}	260	°C

*1 Within 5 seconds (Soldering areas are shown below.)

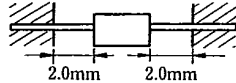
GP2L04, GP2L09

Soldering area
 The hatched area more than 1mm*2 away from the lower edge of package as shown in the drawing below.



GP2L06

Soldering area
 The hatched area more than 2.0mm away from the both edges of package as shown in the drawing below.



■ 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 $V_R=6V$	—	—	10	μA
Output	Collector dark current	I_{CE0} $V_{CE}=10V, I_F=0$	—	—	1×10^{-6}	A
Transfer characteristics	*3 Collector current	I_C $V_{CE}=2V, I_F=4mA$	0.5	3.0	15.0	mA
	Response time (Rise)	t_r $V_{CE}=2V, I_C=10mA$	—	80	400	μs
	Response time (Fall)	t_f $R_L=100\Omega$	—	70	400	μ
	**Leak current	I_{LEAK} $I_F=4mA, V_{CE}=5V$	—	—	5.0	μA

*3 The condition and arrangement of the reflective object are shown in the right drawing.

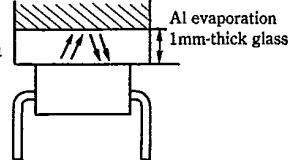
*4 Without reflective object

Rank	I_C (mA)	Rank mark
A	0.5~1.9	A
B	1.45~5.4	B
C	4.0~15.0	C
AB	0.5~5.4	A or B
BC	1.45~15.0	B or C
ABC	0.5~15.0	A, B or C

Marking Example
 GP2L04



Test Condition and Arrangement for Collector Current



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Fig. 1 Forward Current vs. Ambient Temperature

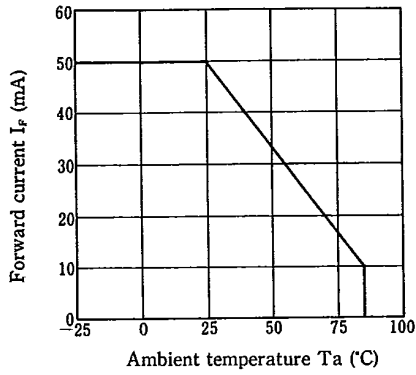


Fig. 2 Power Dissipation vs. Ambient Temperature

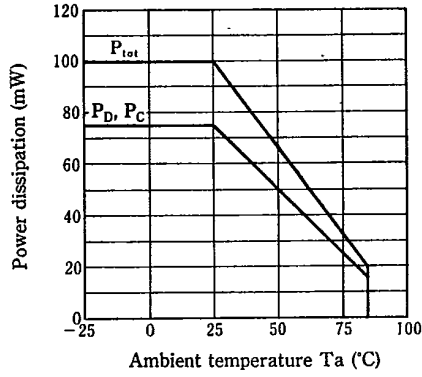


Fig. 3 Peak Forward Current vs. Duty Ratio

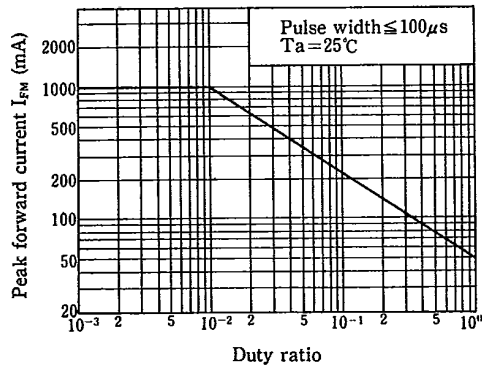


Fig. 4 Forward Current vs. Forward Voltage

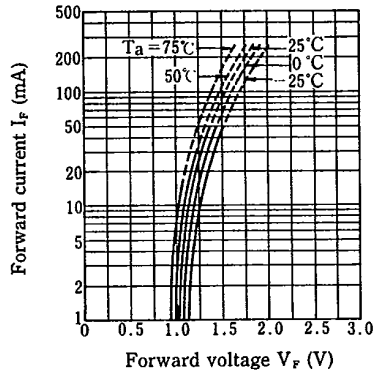


Fig. 5 Collector Current vs. Forward Current

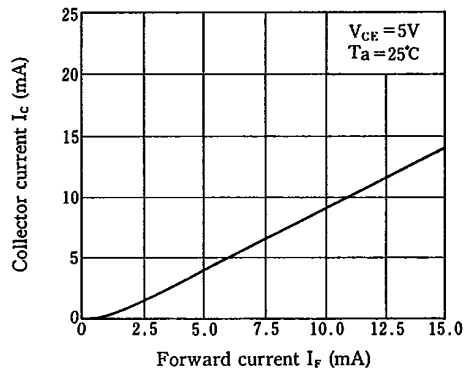


Fig. 6 Collector Current vs. Collector-emitter Voltage

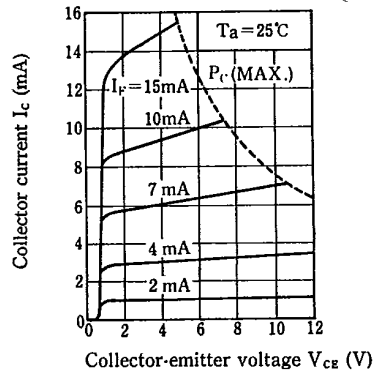


Fig. 7 Relative Collector Current vs. Ambient Temperature

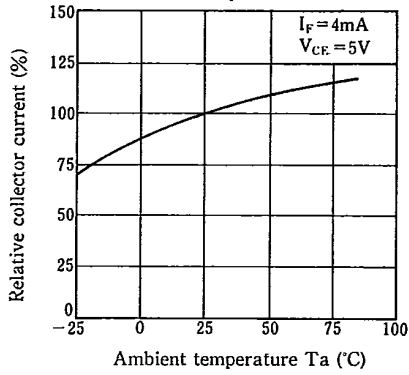


Fig. 8 Collector Dark Current vs. Ambient Temperature

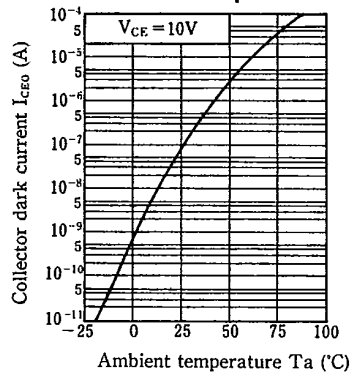
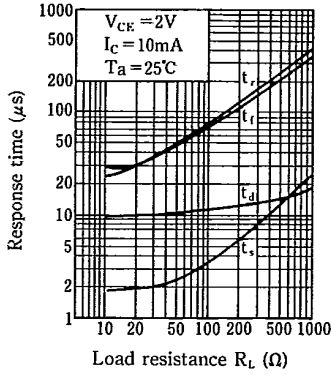


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

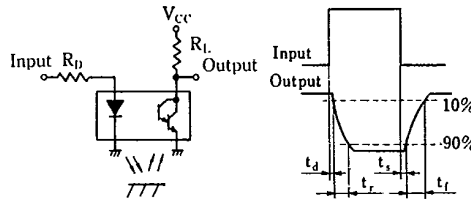


Fig. 10 Relative Collector Current vs. Distance between GP2L04 and Card

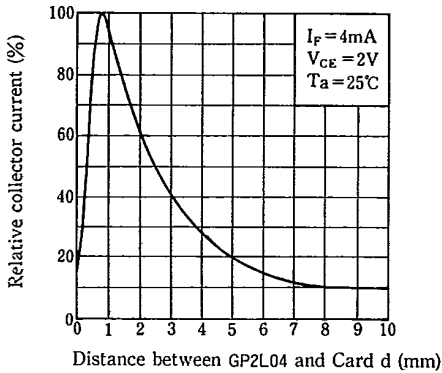


Fig. 11 Relative Collector Current vs. Card Moving Distance (1)

