GP1L57

Wide Gap Type Photointerrupter

■ Features

1. Wide gap between emitter and detector (Gap width: 10 mm)

2. Deep groove type (Depth: 12.2 mm)

3. With positioning pin

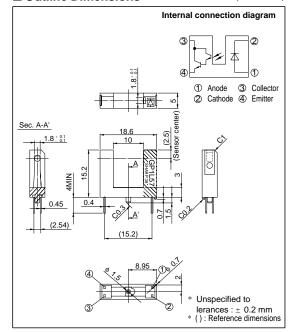
4. PWB direct mounting type package

■ Applications

- 1. Analytical equipment, measuring instruments
- 2. Amusement equipment
- 3. Optoelectronic switches, optoelectronic counters

■ Outline Dimensions

(Unit: mm)



■ Absolute Maximum Ratings

(Ta=25°C)

	•			
	Parameter	Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	*1 Peak forward current	I_{FM}	1	A
	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	Ic	40	mA
	Collector power dissipation	P_{C}	75	mW
Operating temperature		Торг	- 25 to + 85	°C
Storage temperature		T stg	- 40 to + 100	°C
*2 Soldering temperature		T sol	260	°C

^{*1} Pulse width \leq = 100 μ s, Duty ratio=0.01

^{*2} For 5 seconds



■ Electro-optical Characteristics

(Ta=25 °C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage		V _F	$I_F = 20 mA$	-	1.25	1.4	V
Peak forward voltage		V _{FM}	$I_{FM} = 0.5A$	-	3	4	V
Reverse current		I_R	$V_R = 3V$	-	-	10	μΑ
Dark current		I _{CEO}	$V_{CE} = 10V$	-	-	10 - 6	A
Collector current		Ic	$I_F = 1 \text{mA}, V_{CE} = 2V$	0.7	-	28	mA
Collector-emitter saturation voltage		V CE(sat)	$I_F = 4mA, I_C = 0.6mA$	-	-	1	V
Response time	Rise time	t _r	$V_{CE} = 2V$, $I_C = 2mA$	-	130	400	μs
	Fall time	t_{f}	$R_L=100\Omega$	-	100	350	μs
	Forward voltage Peak forward volt Reverse current Dark current Collector current Collector-emitter	Forward voltage Peak forward voltage Reverse current Dark current Collector current Collector-emitter saturation voltage Response time Rise time		$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$

Fig. 1 Forward Current vs. Ambient Temperature

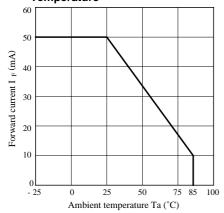


Fig. 3 Peak Forward Current vs. Duty Ratio

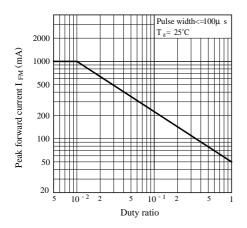


Fig. 2 Collector power Dissipation vs.
Ambient Temperature

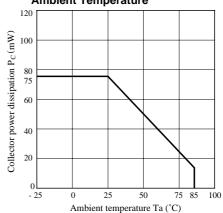


Fig. 4 Forward Current vs. Forward Voltage

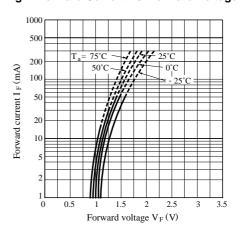


Fig. 5 Collector Current vs. Forward Current

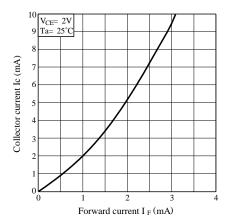


Fig. 7 Collector Current vs. Ambient temperature

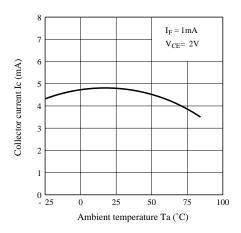


Fig. 9 Response Time vs. Load Resistance

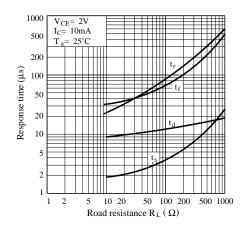


Fig. 6 Collector Current vs. Collector-emitter Voltage

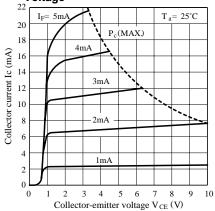
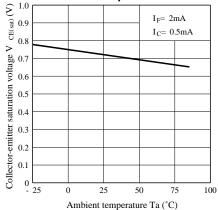


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature



Test Circuit for Response Time

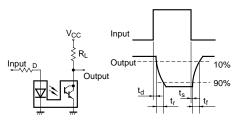


Fig. 10 Frequency characteristics

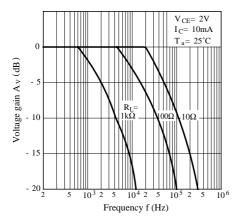


Fig. 12 Detecting Position Characteristics (1)

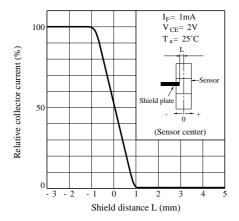


Fig. 11 Dark Current vs. Ambient Temperature

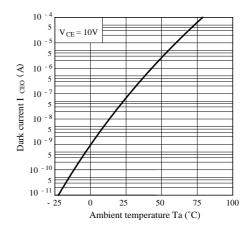
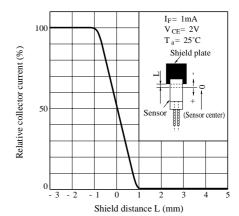


Fig. 13 Detecting Position Characteristics (2)



(Precautions for Operation)

In case of cleaning, use only the following type of cleaning solvent.

Ethyl alcohol, Methyl alcohol, Isopropyl alcohol

As for other general precautions, please refer to the chapter "Precautions for Use".

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