

GP1L55

High Sensitivity Photointerrupter

■ Features

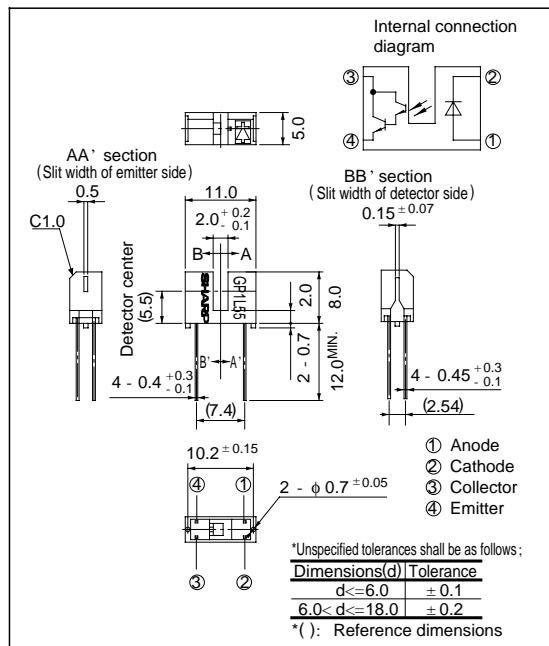
1. Compact package
(Case height: 8mm)
2. High sensing accuracy
(Slit width•••Detector: 0.15mm, Emitter: 0.5mm)
3. Easy positioning to PWB with positioning pin

■ Applications

1. Floppy disk drives
2. VCRs, Cassette decks
3. Optoelectronic switches, electronic counters, edge sensors.

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	Rating	Unit
Input	Forward current	I _F	mA
	* ¹ Peak forward current	I _{FM}	A
	Reverse voltage	V _R	V
	Power dissipation	P	mW
Output	Collector-emitter voltage	V _{CEO}	V
	Emitter-collector voltage	V _{ECO}	V
	Collector current	I _C	mA
	Collector power dissipation	P _C	mW
Operating temperature		T _{opr}	- 25 to + 85 °C
Storage temperature		T _{stg}	- 40 to + 100 °C
* ² Soldering temperature		T _{sol}	260 °C

*1 Pulse width<=100 μ s, Duty ratio= 0.01

*2 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	
	Peak forward voltage	V _{FM}	I _{FM} = 0.5A	-	3	4	V	
	Reverse current	I _R	V _R = 3V	-	-	10	μA	
Output	Collector dark current	I _{CEO}	V _{CE} = 10V	-	-	10 ⁻⁶	A	
Transfer characteristics	Collector Current	I _C	I _F = 2mA, V _{CE} = 2V	0.6	-	-	mA	
	Collector-emitter saturation voltage	V _{CE(sat)}	I _F = 4mA, I _C = 0.6mA	-	-	1	V	
	Response time	t _r	V _{CE} = 2V, I _C = 10mA	-	80	400	μs	
	Rise time			R _L = 100 Ω	-	70	350	μs
	Fall time	t _f						

Fig. 1 Forward Current vs. Ambient Temperature

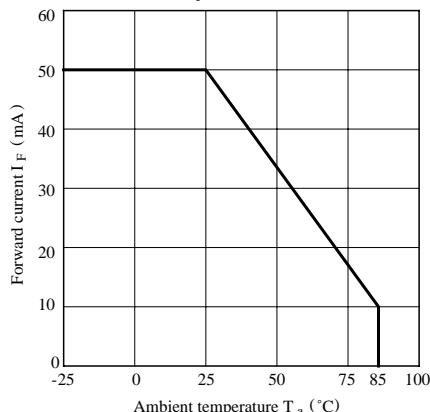


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

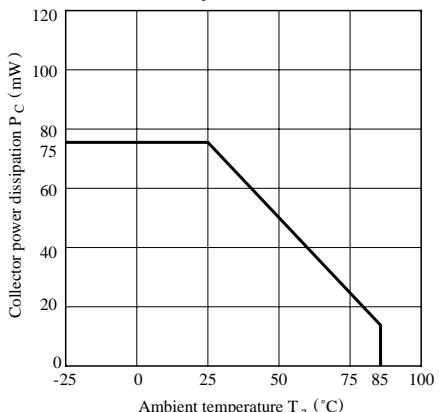


Fig. 3 Peak Forward Current vs. Duty Ratio

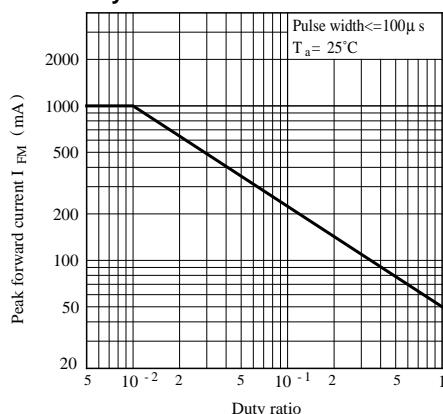
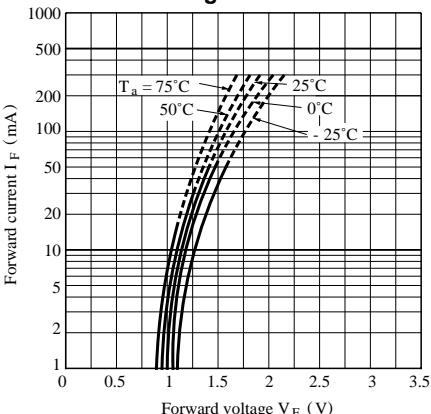
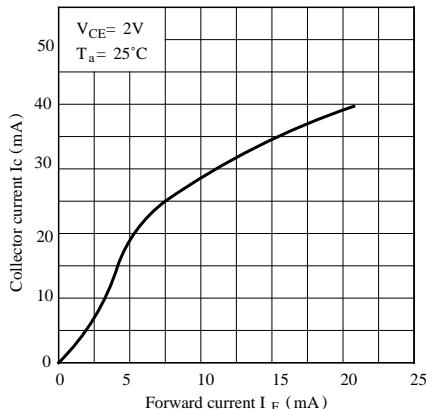


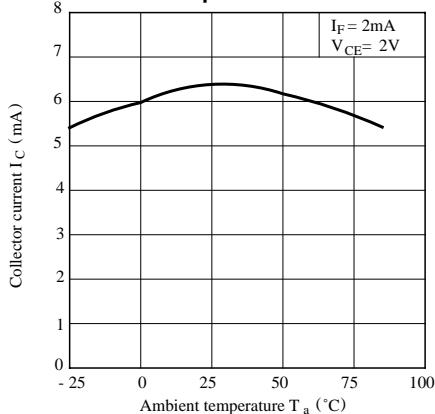
Fig. 4 Forward Current vs. Forward Voltage



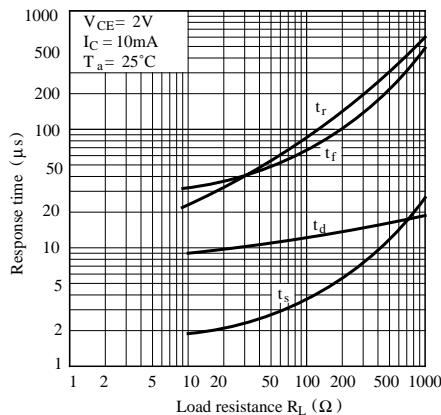
**Fig. 5 Collector Current vs.
Forward Current**



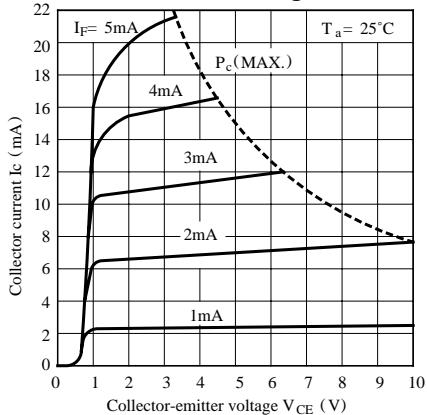
**Fig. 7 Collector Current vs.
Ambient Temperature**



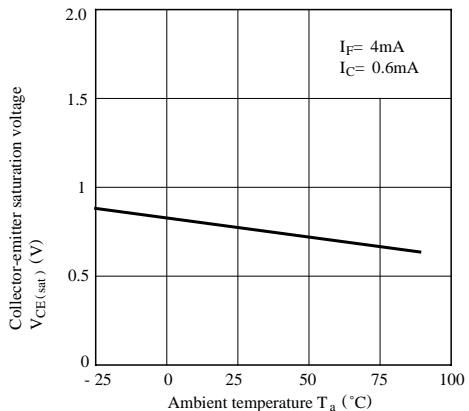
**Fig. 9 Response Time vs.
Load Resistance**



**Fig. 6 Collector Current vs.
Collector-emitter Voltage**



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



Test Circuit for Response Time

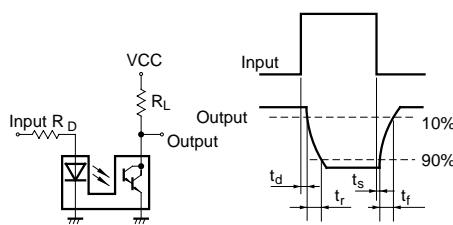
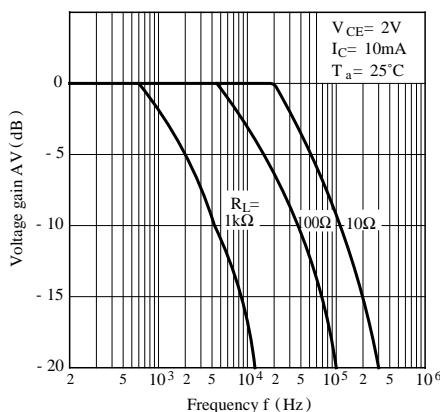
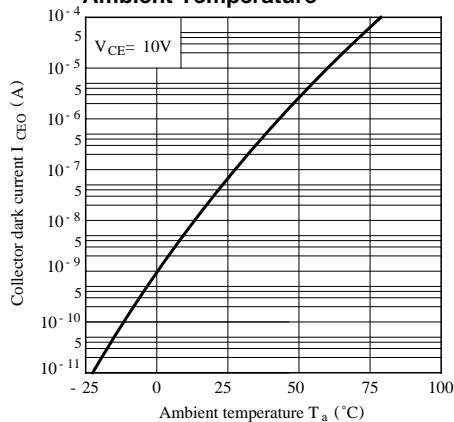
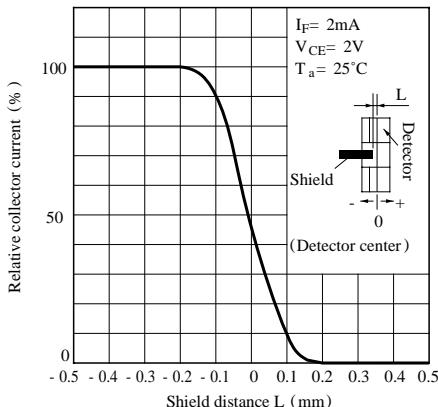
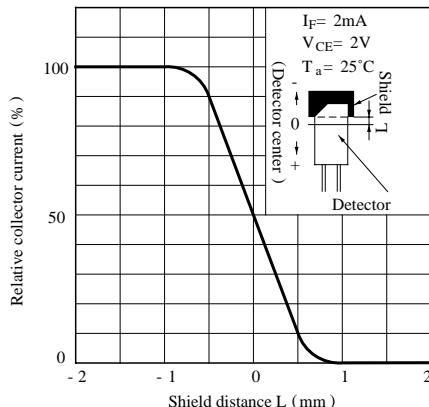


Fig.10 Frequency Response**Fig.11 Collector Dark Current vs. Ambient Temperature****Fig.12 Relative Collector Current vs. Shield Distance (1)****Fig.13 Relative Collector Current vs. Shield Distance (2)**

■ Precautions for Use

- (1) In case of cleaning, use only the following type of cleaning solvent.
Ethyl alcohol, Methyl alcohol, Isopropyl alcohol
- (2) As for other general cautions, refer to the chapter "Precautions for Use".