GP1S09

Photointerrupter with Connector

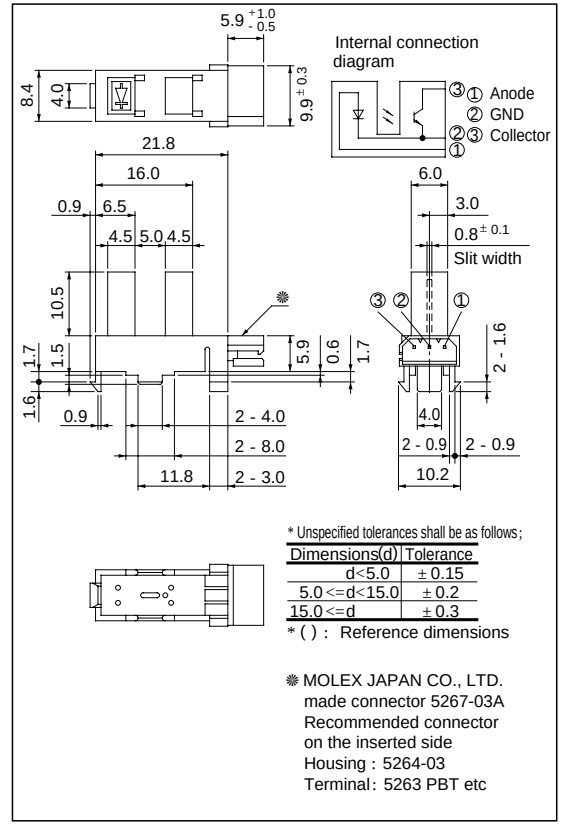
■ Features

1. Snap-in mounting type
2. Can be mounted on 2 different thickness boards（1.0mm, 1.6mm）
3. 3-pin connector terminal
4. Wide gap between light emitter and detector（5mm）

■ Applications

1. Copiers
2. Printers
3. Facsimiles

■ Outline Dimensions （Unit：mm）



■ Absolute Maximum Ratings （Ta= 25˚C）

Parameter		Symbol	Rating	Unit
Input	Forward current	I_F	50	mA
	*1Peak 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	I_C	20	mA
	Collector power dissipation	P_C	75	mW
*2Operating temperature		T_{opr}	- 25 to + 75	˚C
*2Storage temperature		T_{stg}	- 40 to + 85	˚C

*1 Pulse width<= 100 µs, Duty ratio= 0.01
*2 The connector should be plugged in/out and the unit's hook should be used at normal temperature

■ 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} = 20V	-	1×10^{-9}	1×10^{-7}	A
Transfer characteristics	Collector Current		Ic	I_F = 20mA, V_{CE} = 5V	0.5	-	1.5	mA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	I_F = 40mA, I_C = 1mA	-	-	0.4	V
	Response time	Rise time	t_r	V_{CE} = 2V, I_C = 2mA, R_L = 100Ω	-	3	15	μs
		Fall time	t_f		-	4	20	μs

Fig. 1 Forward Current vs. Ambient Temperature

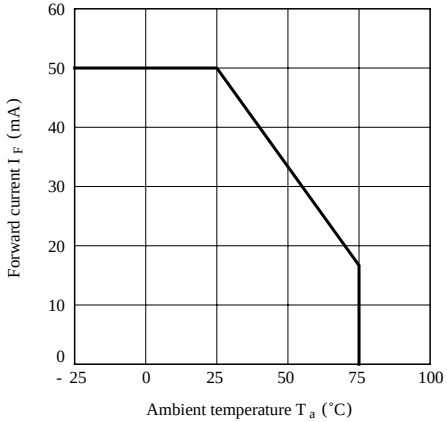


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

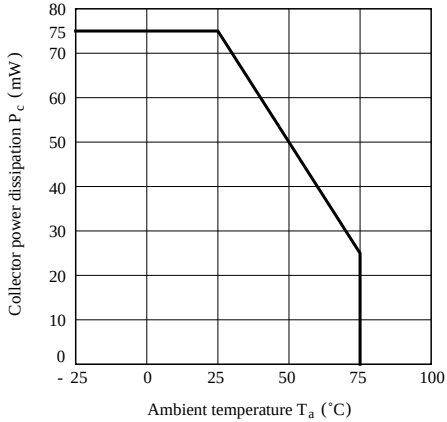


Fig. 3 Peak Forward Current vs. Duty Ratio

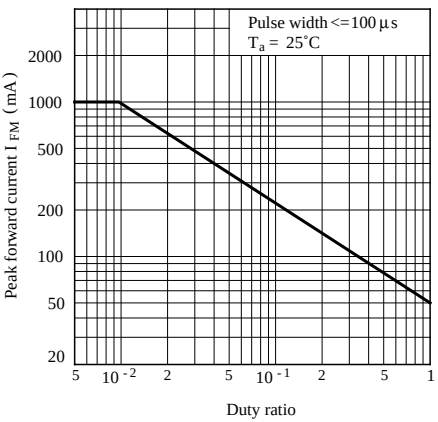


Fig. 4 Forward Current vs. Forward Voltage

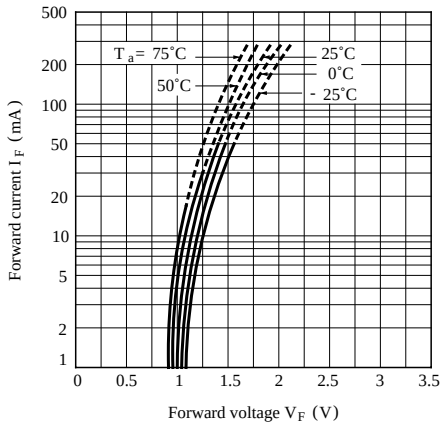


Fig. 5 Collector Current vs. Forward Current

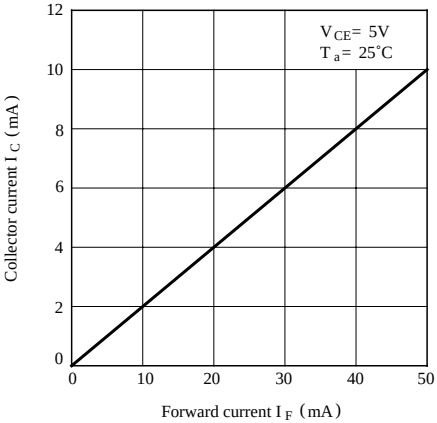


Fig. 6 Collector Current vs. Collector-emitter Voltage

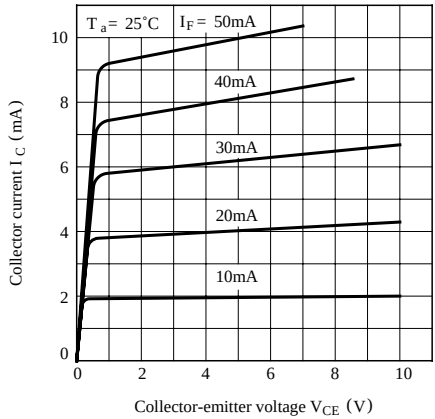


Fig. 7 Collector Current vs. Ambient Temperature

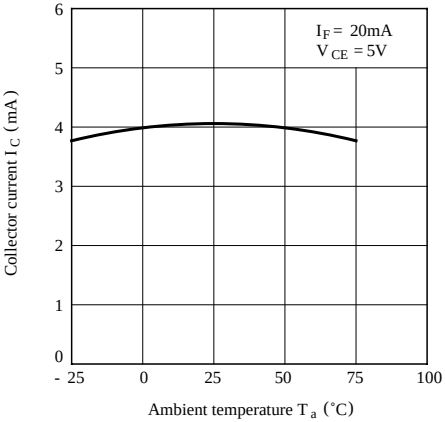


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

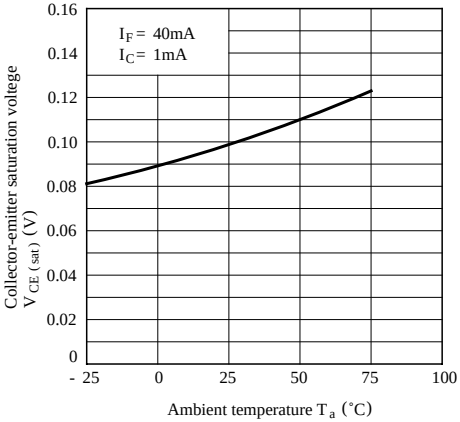
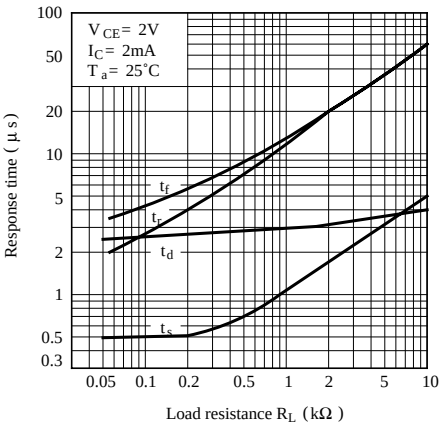


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

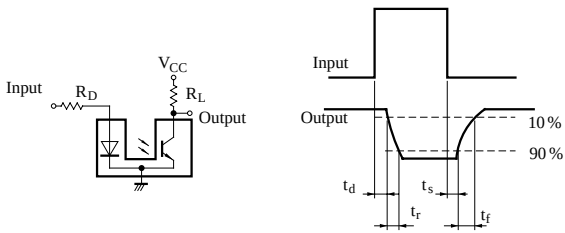


Fig.10 Frequency Response

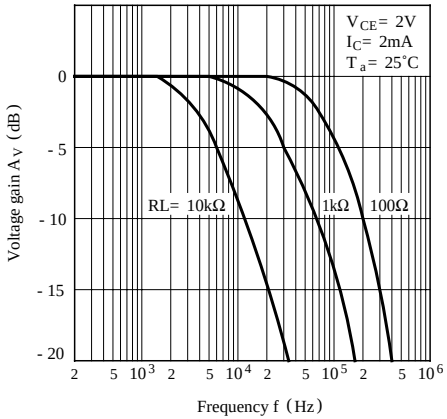


Fig.11 Collector Dark Current vs. Ambient Temperature

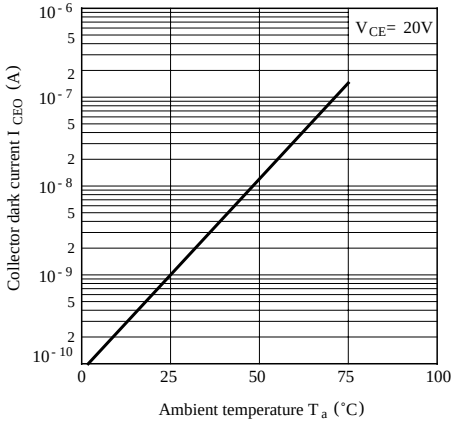


Fig.12 Relative Collector Current vs. Shield Distance (1)

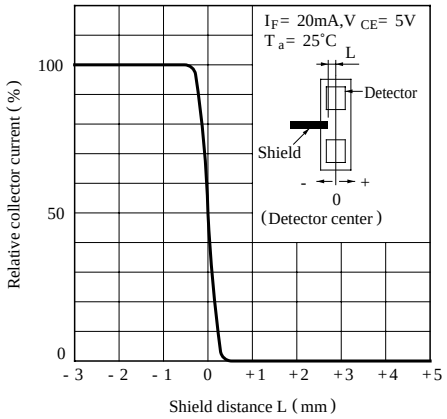
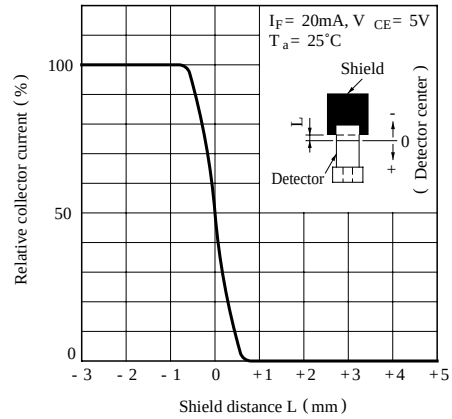
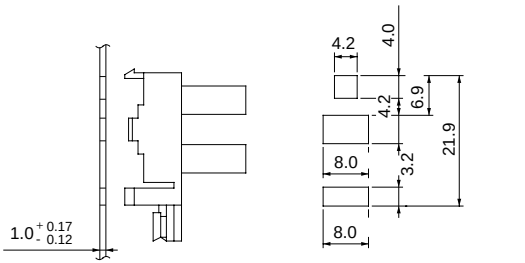


Fig.13 Relative Collector Current vs. Shield Distance (2)



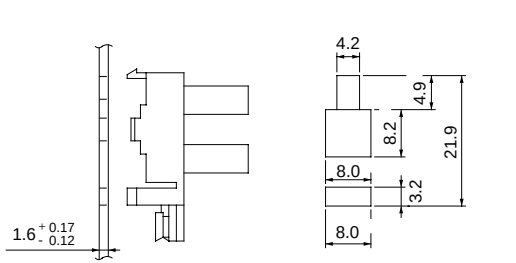
■ Recommended Mounting Holes

(Following dimensions are recommended values, so confirm the intensity by using actual equipment before mounting.)



Mounting method | Recommended mounting holes

Board thickness t = 1.0mm



Mounting method | Recommended mounting holes

Board thickness t = 1.6mm

■ Precautions for Use

(1) In this product, the PWB is fixed with a hook, and cleaning solvent may remain inside the case; therefore, dip cleaning or ultrasonic cleaning are prohibited.

(2) Remove dust or stains, using an air blower or a soft cloth moistened in cleaning solvent. However, do not perform the above cleaning using a soft cloth with cleaning solvent in the marking portion.

In this case, use only the following type of cleaning solvent for wiping off

Ethyl alcohol, Methyl alcohol, Isopropyl alcohol

When the cleaning solvents except for specified materials are used, please consult us.

(3) As for other general cautions, refer to the chapter“ Precautions for Use ”.

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