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GP1S561

Compact and Thin Photointerrupter

■ Features

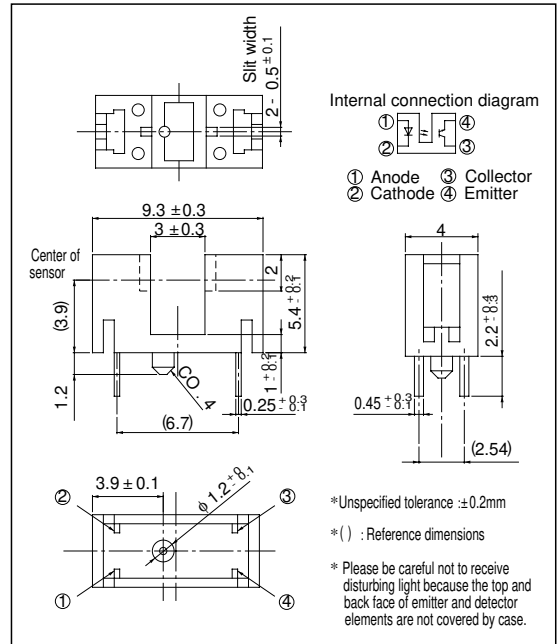
1. Compact and thin package
(Thickness of case: 4mm)
2. With a positioning pin

■ Applications

1. Floppy disk Ratings drivers
2. VCRs

■ Outline Dimensions

(Unit : mm)



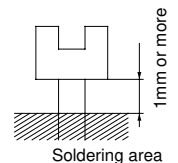
■ Absolute Maximum Ratings

(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 | I _C | 20 | mA |
| | Collector power dissipation | P _C | 75 | 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 μs, Duty ratio: 0.01

*2 For 3 seconds



Electro-optical characteristics

($T_a = 25^\circ\text{C}$)

| Parameter | | Symbol | Conditions | MIN. | TYP. | MAX. | Unit | |
|--------------------------|--------------------------------------|---------------|---|--|------|------|---------------|---------------|
| Input | Forward voltage | V_F | $I_F = 20\text{mA}$ | - | 1.25 | 1.4 | V | |
| | Peak forward voltage | V_{FM} | $I_{FM} = 0.5\text{A}$ | - | 3 | 4 | V | |
| | Reverse current | I_R | $V_R = 3\text{V}$ | - | - | 10 | μA | |
| Output | Collector dark current | I_{CEO} | $V_{CE} = 20\text{V}$ | - | 1 | 100 | nA | |
| Transfer characteristics | Collector current | I_C | $V_{CE} = 10\text{V}, I_F = 9\text{mA}$ | 0.3 | - | 6 | mA | |
| | Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_F = 40\text{mA}, I_C = 0.1\text{mA}$ | - | - | 0.4 | V | |
| | Response time | Rise time | t_r | $V_{CE} = 2\text{V}, I_C = 1\text{mA}$ | - | 3 | 15 | μs |
| | | Fall time | t_f | $R_L = 100\Omega$ | - | 4 | 20 | μs |

Fig. 1 Forward Current vs. Ambient Temperature

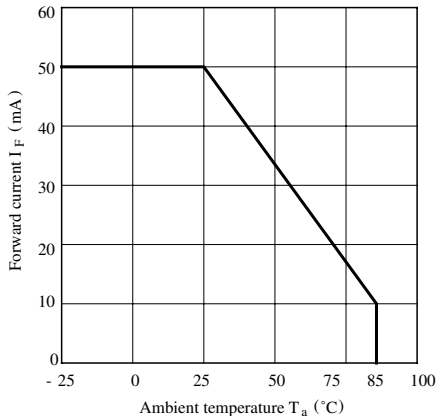


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

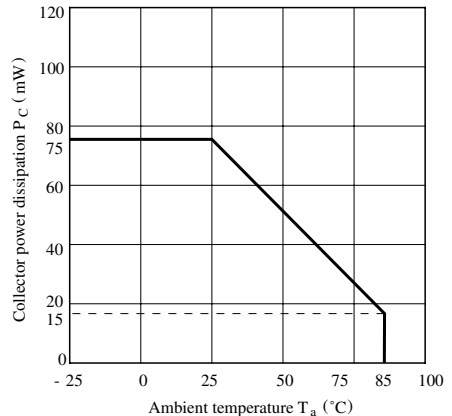


Fig. 3 Peak Forward Current vs. Duty Ratio

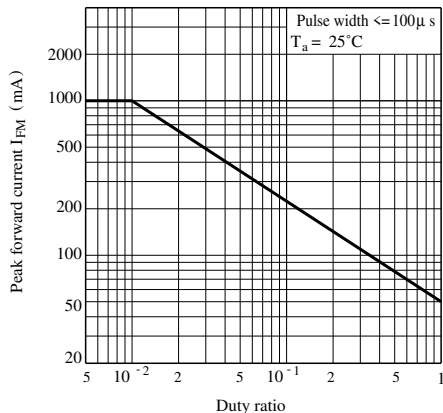


Fig. 4 Forward Current vs. Forward Voltage

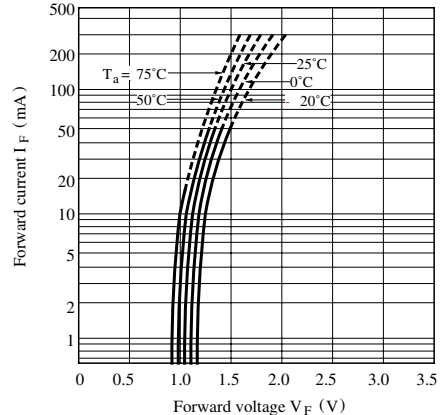


Fig. 5 Collector Current vs. Forward Current

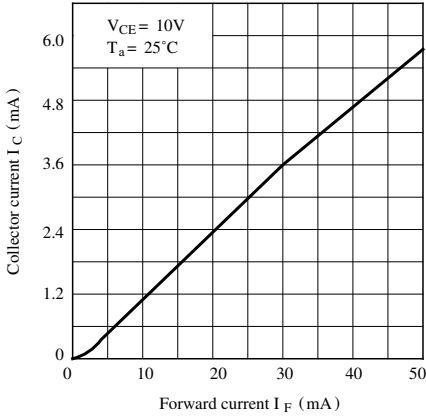


Fig. 6 Collector Current vs. Collector-emitter Voltage

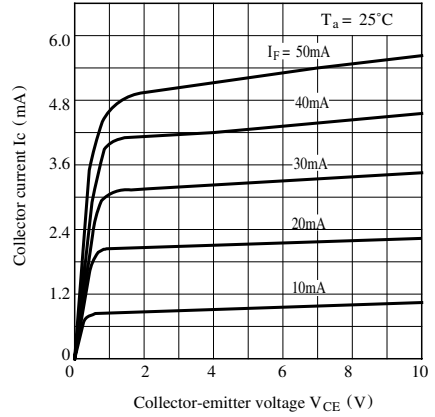


Fig. 7 Collector Current vs. Ambient Temperature

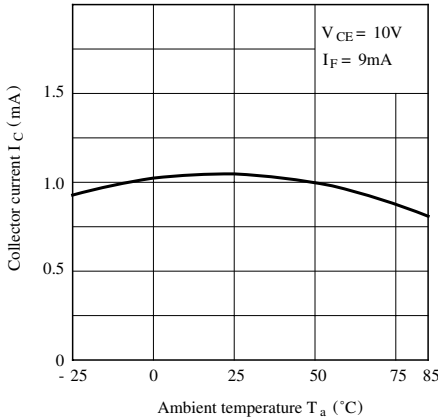


Fig. 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

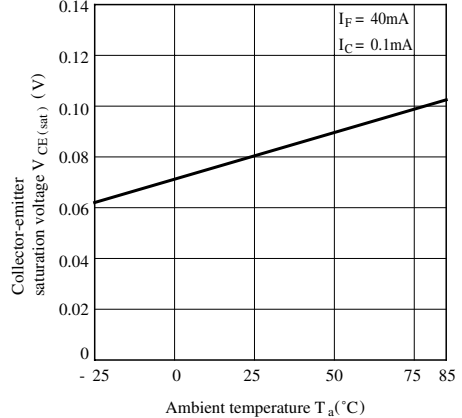
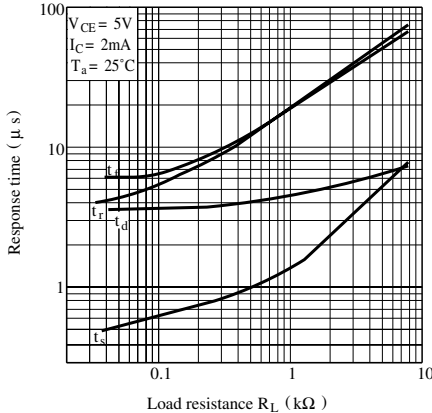


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

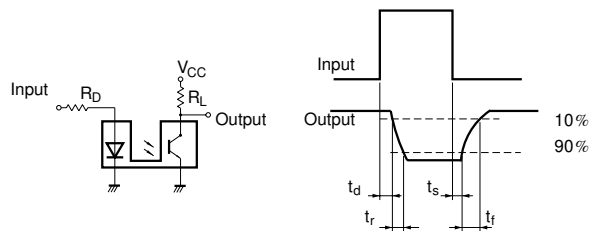


Fig.10 Frequency Response

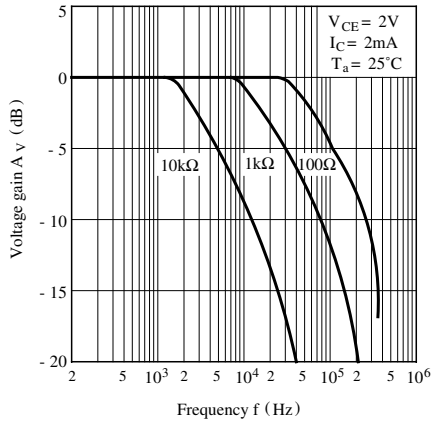
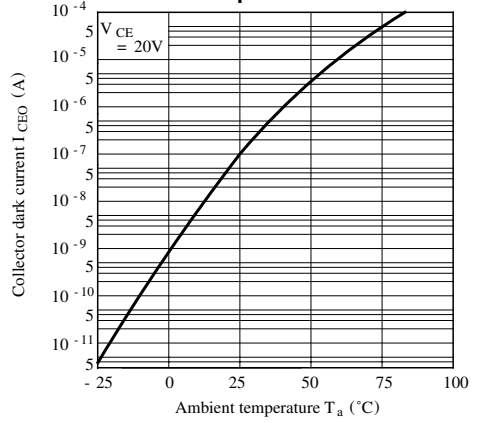


Fig.11 Collector Dark Current vs. Ambient Temperature



- Please refer to the chapter “Precautions for Use”.

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