

GP1S092HCPI

Subminiature, Surface Mount Type Photointerrupter

■ Features

1. Subminiature, transmissive type (4.5×2.6×2.9mm)
2. Surface mount type
3. Wide gap (Gap width : 2mm)
4. Slit width (Detector side) : 0.3mm
5. Tape-packaged product

■ Applications

1. Cameras
2. CD-ROM drives
3. VCR

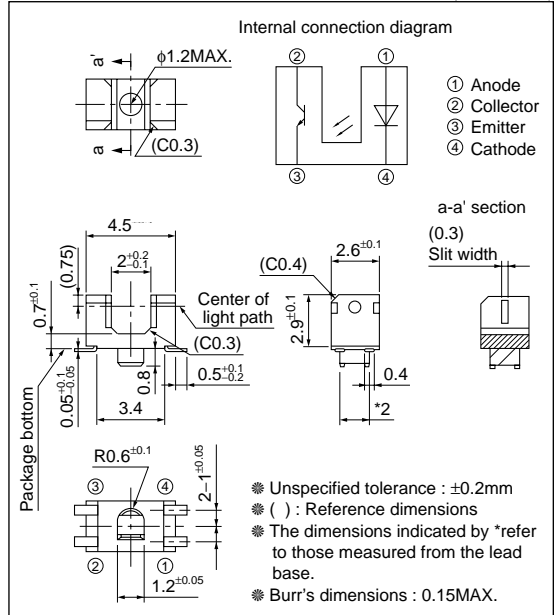
■ Absolute Maximum Ratings (Ta=25°C)

| | Parameter | Symbol | Rating | Unit |
|--------|-----------------------------|------------------|-------------|------|
| Input | Forward current | I _F | 50 | mA |
| | Reverse voltage | V _R | 6 | V |
| | Power dissipation | P | 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 |
| | Total power dissipation | P _{tot} | 100 | mW |
| | Operating temperature | T _{opr} | -25 to +85 | °C |
| | Storage temperature | T _{stg} | -40 to +100 | °C |
| | *1 Soldering temperature | T _{sol} | 260 | °C |

*1 For MAX. 5s

■ Outline Dimensions

(Unit : mm)



■ Electro-optical Characteristics

(Ta=25°C)

| Parameter | | Symbol | Conditions | MIN. | TYP. | MAX. | Unit |
|--------------------------|--------------------------------------|---------------|--------------------------------------|--|------|------|---------------|
| Input | Forward voltage | V_F | $I_F=20\text{mA}$ | — | 1.2 | 1.4 | V |
| | Reverse current | I_R | $V_R=3\text{V}$ | — | — | 10 | μA |
| Output | Collector dark current | I_{CEO} | $V_{CE}=20\text{V}$ | — | — | 100 | nA |
| Transfer characteristics | Collector current | I_C | $V_{CE}=5\text{V}, I_F=5\text{mA}$ | 100 | — | 400 | μA |
| | Collector-emitter saturation voltage | $V_{CE(sat)}$ | $I_F=10\text{mA}, I_C=40\mu\text{A}$ | — | — | 0.4 | V |
| | Response time | Rise time | t_r | $V_{CE}=5\text{V}, I_C=100\mu\text{A}$ $R_L=1\ 000\Omega$ | — | 50 | 150 |
| Fall time | | t_f | — | | 50 | 150 | μs |

Fig.1 Forward Current vs. Ambient Temperature

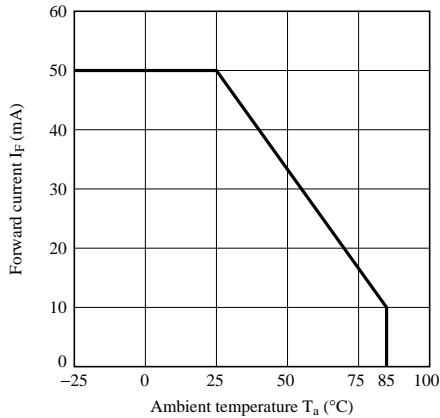


Fig.2 Power Dissipation vs. Ambient Temperature

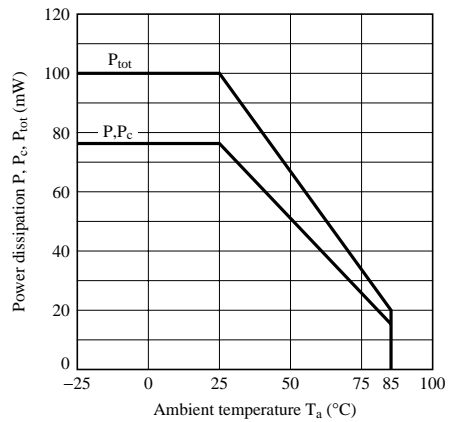


Fig.3 Forward Current vs. Forward Voltage

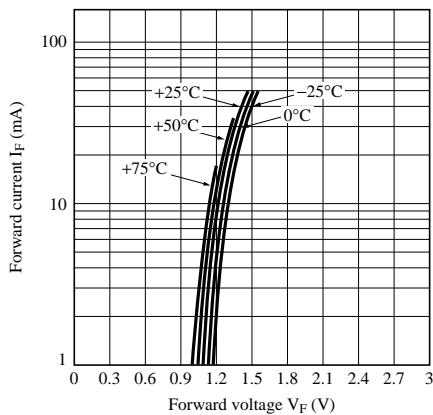


Fig.4 Collector Current vs. Forward Current

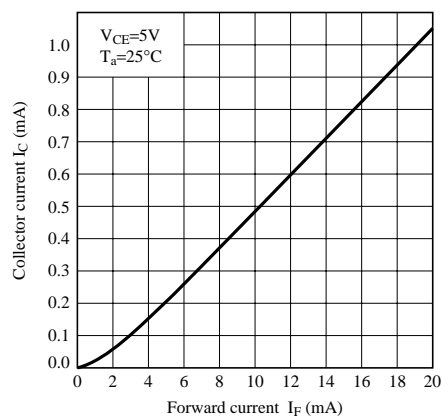


Fig.5 Collector Current vs. Collector-emitter Voltage

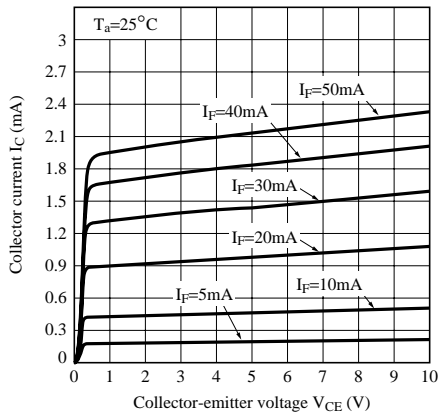


Fig.6 Relative Collector Current vs. Ambient Temperature

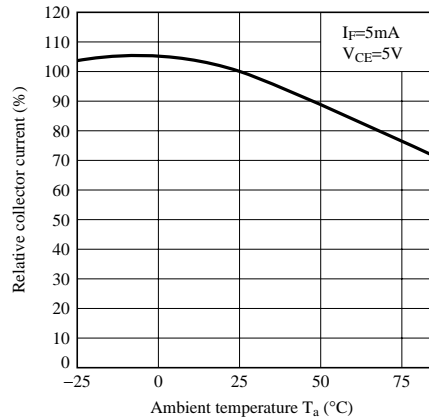


Fig.7 Collector - emitter Saturation Voltage vs. Ambient Temperature

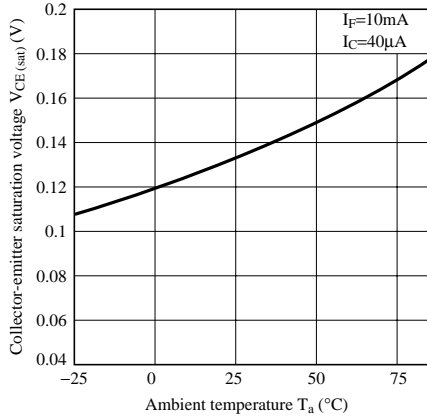


Fig.8 Collector Dark Current vs. Ambient Temperature

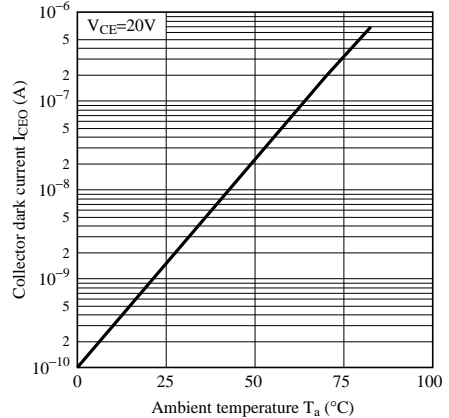


Fig.9 Response Time vs. Load Resistance

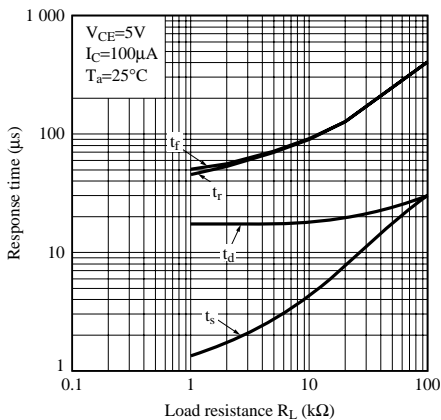


Fig.10 Test Circuit for Response Time

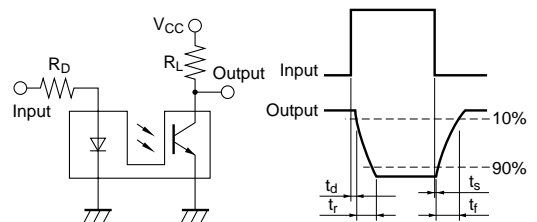


Fig.11 Relative Collector Current vs. Shield Distance (1)

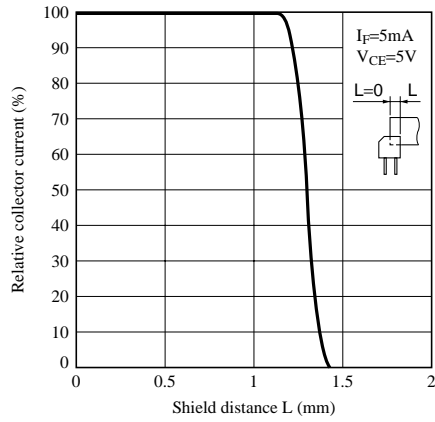
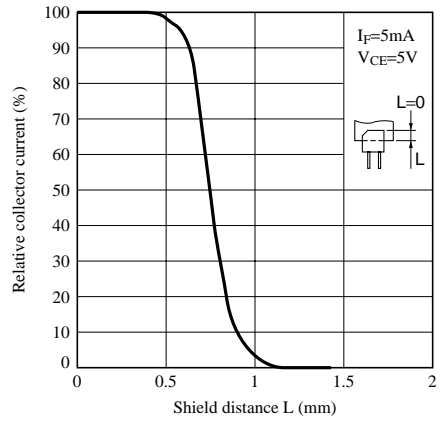


Fig.12 Relative Collector Current vs. Shield Distance (2)



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