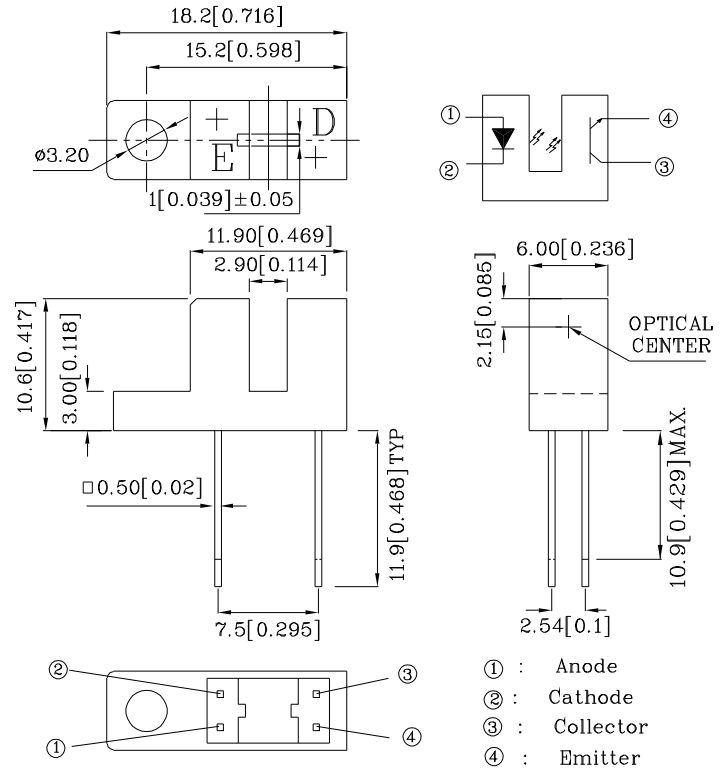


Features

- Ultra-small.
- Minimal influence from stray light.
- Low collector-emitter saturation voltage.
- RoHS compliant.

Applications

- Optical control equipment.
- Cameras.
- Floppy disk drives.



UNIT : MM[INCH]

TOLERANCE : $\pm 0.25[\pm 0.01]$ UNLESS OTHERWISE NOTED.

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$)

| Parameter | | Symbol | Rating | Unit |
|---|---|-----------|----------|------------------|
| Input | Forward Current | I_F | 50 | mA |
| | Reverse Voltage | V_R | 6 | V |
| | Power Dissipation | P_d | 75 | mW |
| | Peak Forward Current (Pulse Width $\leq 100\mu\text{s}$, Duty Cycle =1%) | I_{FP} | 1 | A |
| 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~+85 | $^\circ\text{C}$ |
| Storage Temperature | | T_{stg} | -40~+100 | $^\circ\text{C}$ |
| Soldering Temperature (1/16 inch from body for 5 seconds) | | T_{sol} | 260 | $^\circ\text{C}$ |

Electrical / Optical Characteristics at $T_A=25^\circ\text{C}$

| Parameter | | Symbol | Conditions | Min. | Typ. | Max. | Unit | |
|--------------------------|--------------------------------------|-----------|---------------------|---|------|------|---------------|-----------------|
| Input | Forward Voltage | V_F | $I_F=20\text{mA}$ | - | 1.2 | 1.5 | V | |
| | Reverse Current | I_R | $V_R=5\text{V}$ | - | - | 10 | μA | |
| Output | Collector Dark Current | I_{CEO} | $V_{CE}=20\text{V}$ | - | - | 100 | nA | |
| Transfer Characteristics | Collector-Emitter Saturation Voltage | | $V_{CE(SAT)}$ | $I_C=1\text{mA}$ $I_F=40\text{mA}$ | - | - | 0.4 | V |
| | Current Transfer ratio | | CTR | $V_{CE}=5\text{V}$ $I_F=20\text{mA}$ | - | 38 | - | % |
| | Response Time | Rise Time | t_r | $V_{CE}=2\text{V}$ $I_C=2\text{mA}$ | - | 5 | 25 | μSec |
| | | Fall Time | t_f | $R_L=100\ \Omega$ | - | 4 | 20 | μSec |

Fig.1 FORWARD CURRENT Vs. FORWARD VOLTAGE

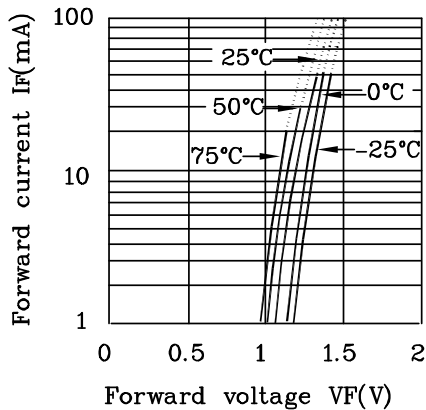


Fig.2 COLLECTOR CURRENT Vs. FORWARD CURRENT

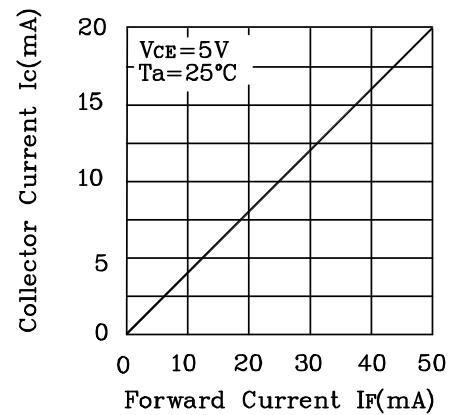


Fig.3 COLLECTOR CURRENT Vs. COLLECTOR-EMITTER VOLTAGE

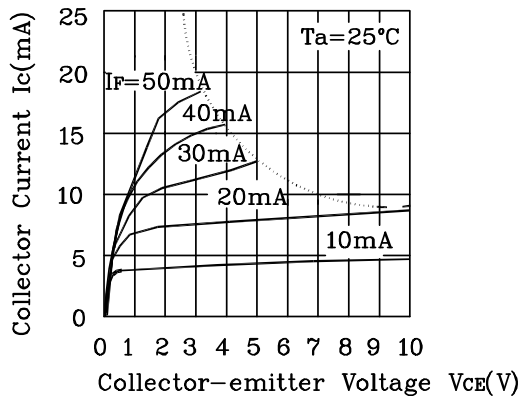


Fig.4 COLLECTOR CURRENT Vs. AMBIENT TEMPERATURE

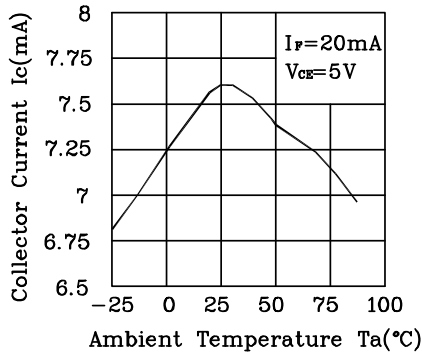


Fig.5 COLLECTOR-EMITTER SATURATION VOLTAGE Vs. AMBIENT TEMPERATURE

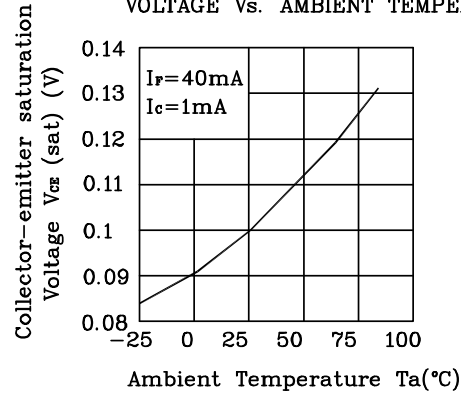


Fig.6 RELATIVE COLLECTOR CURRENT Vs. SHIELD DISTANCE (1)

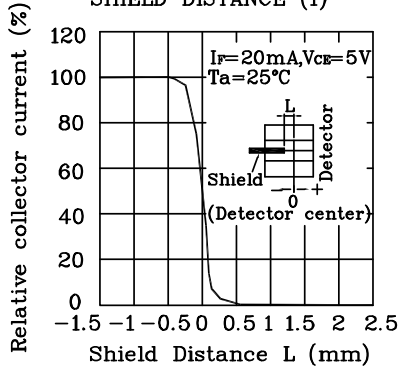


Fig.7 RELATIVE COLLECTOR CURRENT Vs. SHIELD DISTANCE (2)

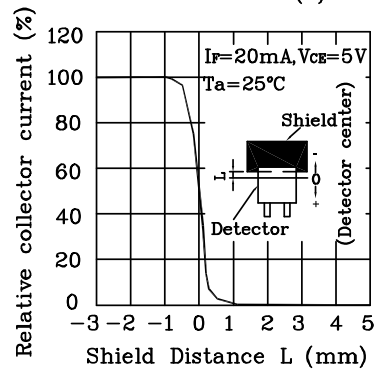
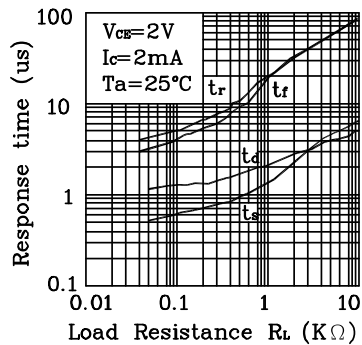
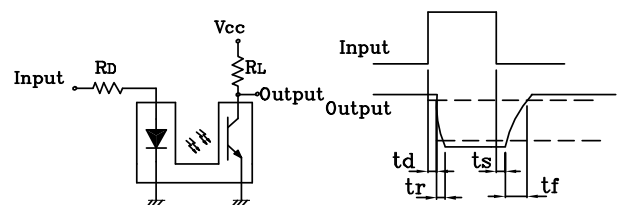


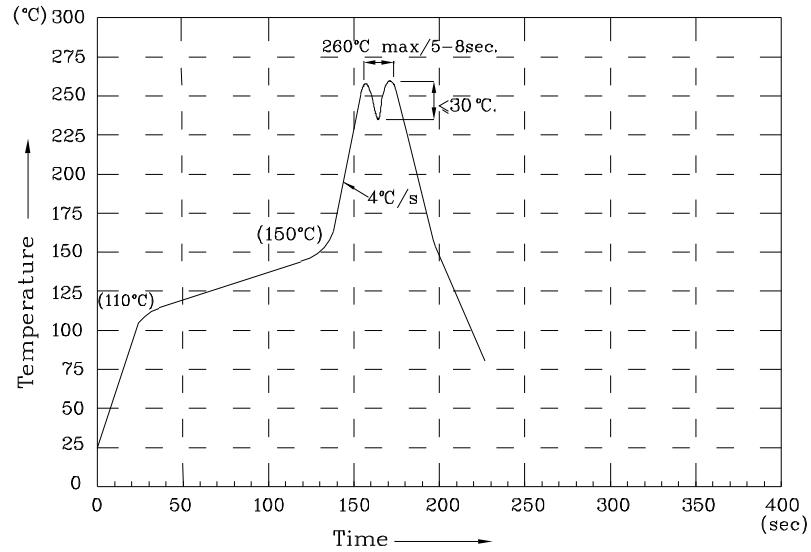
Fig.8 RESPONSE TIME Vs. LOAD RESISTANCE



Test Circuit for Response Time



Wave Soldering Profile For Lead-free Through-hole LED.



NOTES:

- 1.Recommend the wave temperature 245°C~260°C.The maximum soldering temperature should be less than 260°C.
- 2.Do not apply stress on epoxy resins when temperature is over 85 degree°C.
- 3.The soldering profile apply to the lead free soldering (Sn/Cu/Ag alloy).
- 4.No more than once.