# Photointerrupter

## Model No: LBT-204P-1

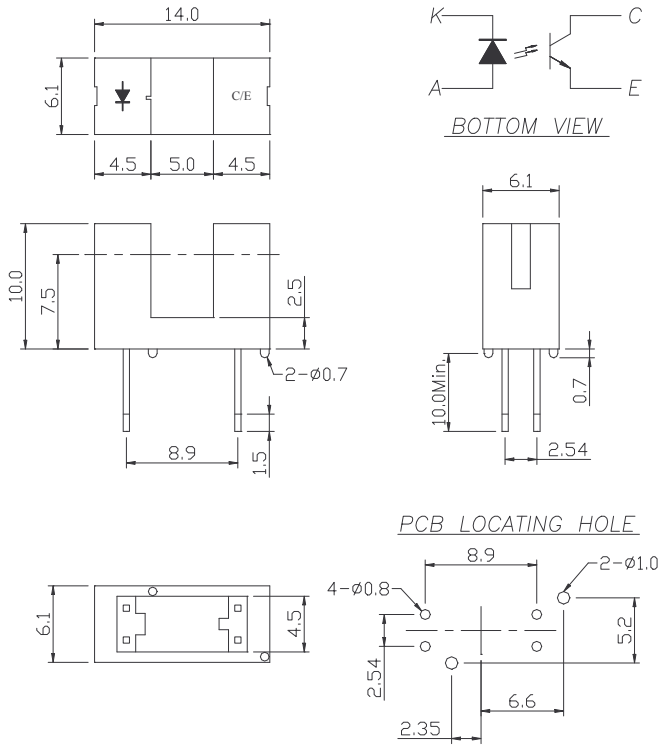
## Features

- High sensing accuracy (Slit width: 0.5mm)
- PWB direct mounting type package

## Applications

- Copiers, printers, facsimiles
- Optoelectronic switches

### Outline Dimensions




NOTE:
1. All dimensions are in millimeter.
2. Tolerance is ± 0.25.

## Absolute Maximum Ratings (Ambient Temperature: 25℃)

| Item | | Symbol | Rating | Units | Note |
|---|---|---|---|---|---|
| Input | Forward current | $I_F$ | 50 | mA | |
| | Reverse voltage | $V_R$ | 5 | V | |
| | Power dissipation | $P_D$ | 75 | mW | |
| Output | Collector-emitter voltage | $V_{ceo}$ | 30 | V | |
| | Emitter-collector voltage | Veco | 4.5 | V | |
| | Collector power dissipation | $P_C$ | 80 | mW | |
| Storage Temperature | | Tstg | -40 to +100 | ℃ | |
| Operating Temperature | | Top | -25 to +85 | ℃ | |
| Soldering Temperature | | Tsol | 260 | ℃ | 10 seconds max. |

## Electrical Specifications (Ambient Temperature: 25℃)

| Item | | Symbol | Min. | Typ. | Max. | Units | Conditions |
|---|---|---|---|---|---|---|---|
| Input | Forward voltage | $V_F$ | | 1.2 | 1.4 | V | $I_F$=20mA |
| | Peak forward voltage | $V_{FM}$ | | 3 | 4 | V | $I_{FM}$=0.5A |
| | Reverse current | $I_R$ | | | 10 | μA | $V_R$=5V |
| Output | Collector dark current | Iceo | | | 0.5 | μA | Vce=10V |
| | Collector-emitter breakdown voltage | BVceo | 30 | | | V | Ice=50μA |
| | Emitter-collector breakdown voltage | BVeco | 4.5 | | | V | Iec=50μA |
| Combination | Collector current | Ic | 0.5 | | | mA | Vce=5V, $I_F$=20mA |
| | Collector-emitter saturation voltage | Vce(sat) | | | 0.4 | V | $I_F$=20mA, Ic=0.3mA |
| | Response time | Tr/tf | 10 | | | μs | $I_F$=5mA, Vcc=5V, $R_L$=100Ω |

# Reference Data

Fig.1 Forward Current vs. Ambient Temperature

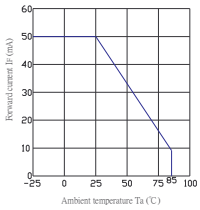



Fig.2 Collector Power Dissipation vs. Ambient Temperature

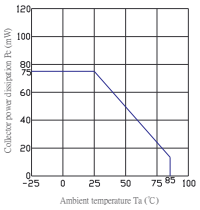



Fig.7 Collector Current vs. Ambient Temperature

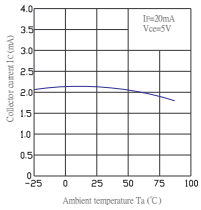



Fig.8 Collector-Emitter Saturation Voltage vs. Ambient Temperature

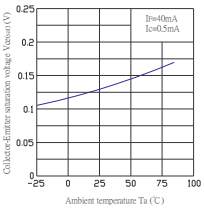



Fig.3 Peak Forward Current vs. Duty Ratio

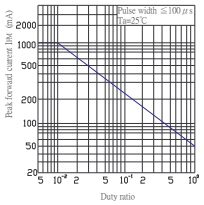



Fig.4 Forward Current vs. Forward Voltage

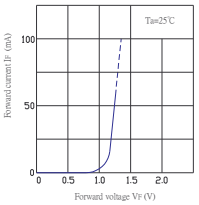



Fig.9 Response Time vs. Load Resistance

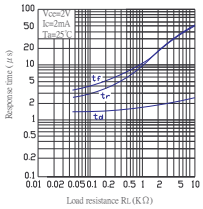



Fig.10 Collector Dark Current vs. Ambient Temperature

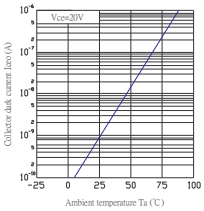



Fig.5 Collector Current vs. Forward Current

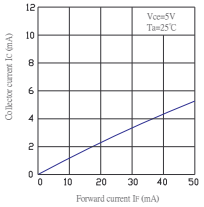



Fig.6 Collector Current vs. Collector-Emitter Voltage

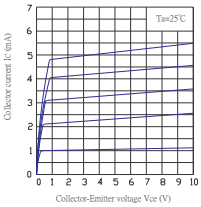
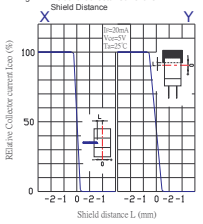



Fig.11 Relative Collector Current vs. Shield Distance




Test Circuit for Response Time