

# OKI electronic components

## T34

### Silicon Planar Phototransistor

#### GENERAL DESCRIPTION

The planar structure of the T34 silicon phototransistor provides a high degree of sensitivity. High reliability is ensured by a hermetically sealed metal can package.

#### FEATURES

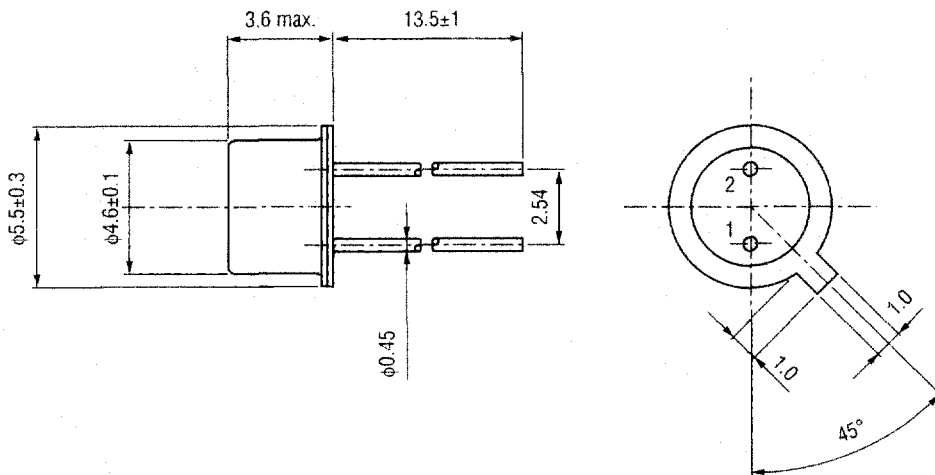
- Effective active area :  $0.4 \times 0.4 \text{ mm}^2$
- Metal can package
- High reliability
- High sensitivity
- High-speed response

#### APPLICATIONS

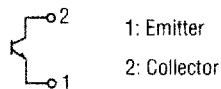
- For photoelectric transducer, switching, logic circuits and control

#### PIN CONFIGURATION

(Unit: mm)



• Pin Connection Diagram



**ABSOLUTE MAXIMUM RATINGS**

| Parameter                 | Symbol    | Test Condition | Rating      | Unit |
|---------------------------|-----------|----------------|-------------|------|
| Collector-emitter Voltage | $V_{CE0}$ | Ta=25°C        | 20          | V    |
| Emitter-collector Voltage | $V_{ECO}$ |                | 5           | V    |
| Collector Current         | $I_C$     |                | 20          | mA   |
| Power Dissipation         | $P_C$     |                | 150         | mW   |
| Operating Temperature     | $T_{opr}$ | —              | -40 to +100 | °C   |
| Storage Temperature       | $T_{stg}$ | —              | -55 to +125 | °C   |

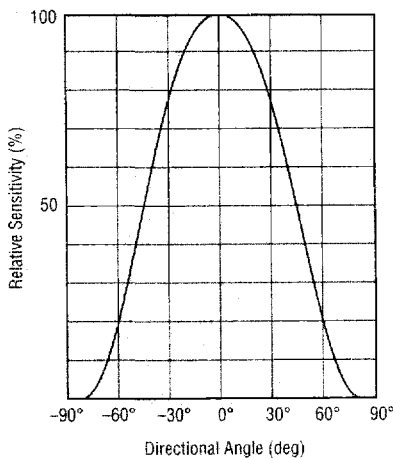
**ELECTRICAL AND OPTICAL CHARACTERISTICS**

(Ambient Temperature Ta=25°C)

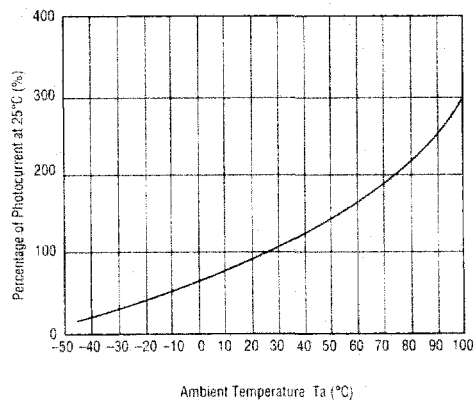
| Parameter                            | Symbol        | Test Condition  | Min. | Typ. | Max. | Unit    |
|--------------------------------------|---------------|---|------|------|------|---------|
| Collector-emitter Breakdown Voltage  | $BV_{CE0}$    | $I_C=100 \mu A$                                       | 20   | —    | —    | V       |
| Collector-emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=200 \mu A$<br>Standard Illuminant A=200 $\ell_X$ | —    | 0.2  | 0.4  | V       |
| Dark Current                         | $I_D$         | $V_{CE}=9 V$  | —    | —    | 100  | nA      |
| Photocurrent                         | $I_L$         | $V_{CE}=9 V$<br>Standard Illuminant A=100 $\ell_X$    | 20   | 40   | —    | $\mu A$ |

**TYPICAL CHARACTERISTICS**

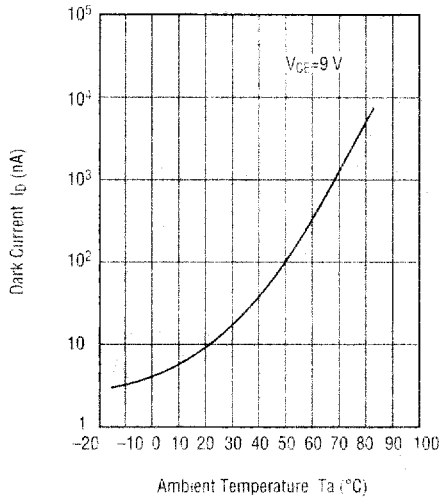
- Directional Characteristics (Ta=25°C)



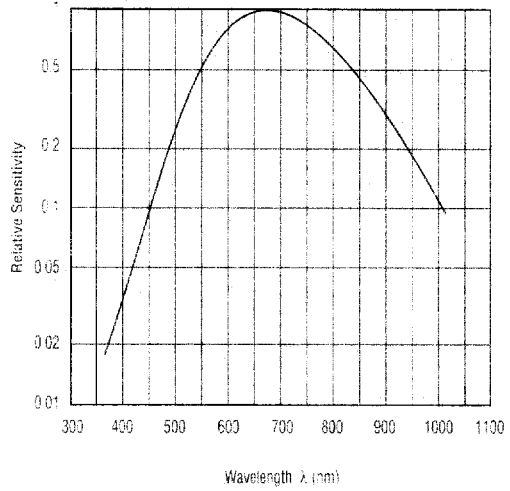
- Photocurrent vs. Ambient Temperature



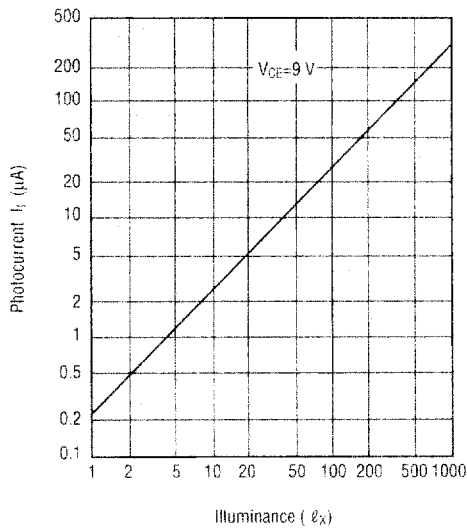
• Dark Current vs. Ambient Temperature



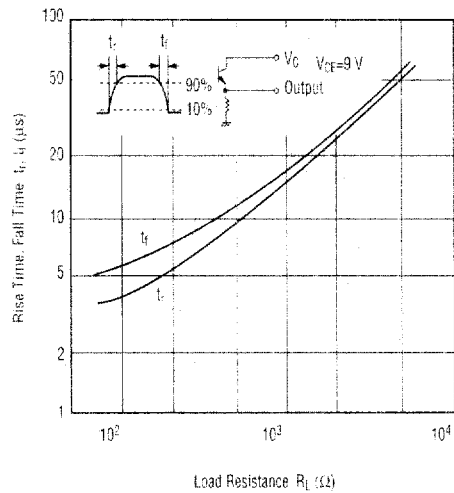
• Spectral Sensitivity ( $T_a = 25^\circ C$ )



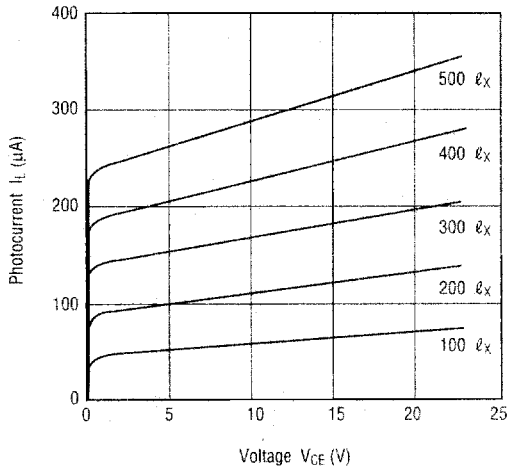
• Photocurrent vs. Illuminance ( $T_a = 25^\circ C$ )



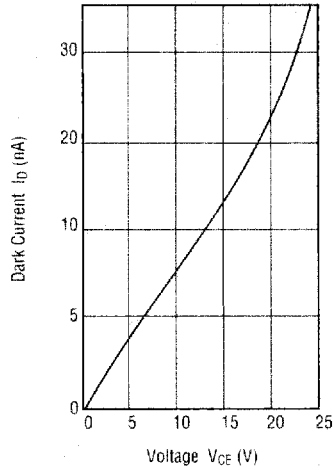
• Rise Time, Fall Time vs. Load Resistance ( $T_a = 25^\circ C$ )



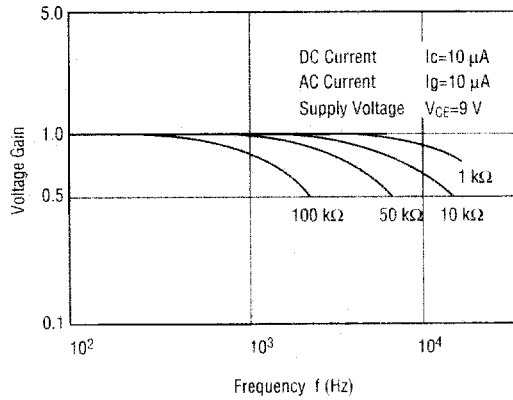
• Photocurrent vs. Voltage (Ta=25°C)



• Dark Current vs. Voltage (Ta=25°C)



• Frequency Response (Ta=25°C)



- Output Photocurrent vs. Distance ( $T_a=25^\circ\text{C}$ )

