This version: Jan. 1998
Previous version: May. 1997

OKI electronic components

T55L

Silicon Planar Phototransistor

GENERAL DESCRIPTION

The planar structure of the T55L silicon phototransistor provides a high degree of sensitivity. High reliability is ensured by a hermetically sealed TO-18 package.

FEATURES

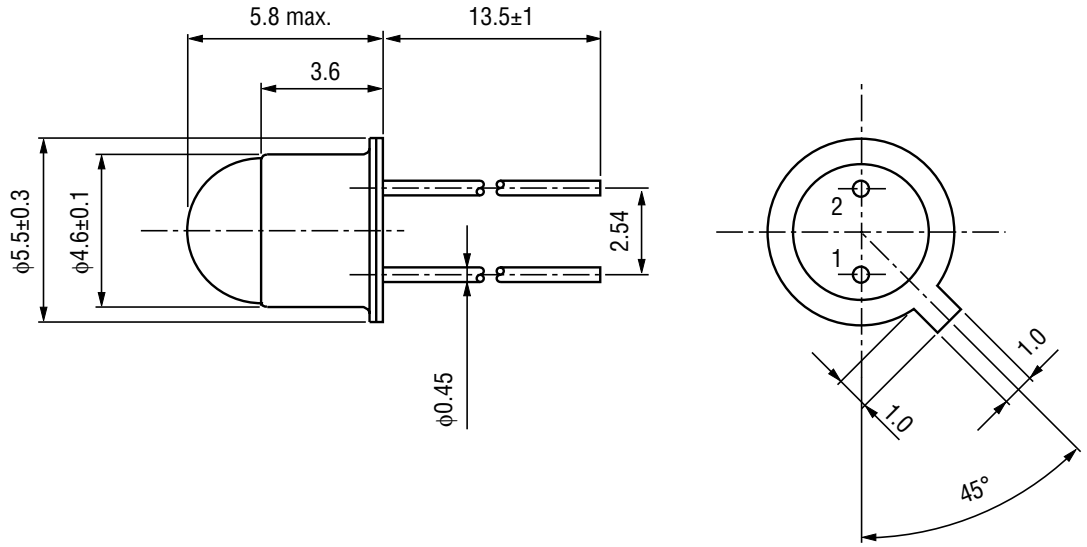
- Silicon planar technology applied in design allows detection of microscopic amounts of light
- Internal amplification provides high sensitivity
- TO-18 package for ease of handling

APPLICATIONS

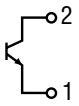
- For photoelectric transducer, switching, logic circuits and miniaturization

IN CONFIGURATION

(Unit: mm)



• Pin Connection Diagram



1: Emitter
2: Collector

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Test Condition	Rating	Unit
Collector-emitter Voltage	V_{CEO}	Ta=25°C	20	V
Emitter-collector Voltage	V_{ECO}		5	V
Collector Current	I_C		20	mA
Power Dissipation	P_C		150	mW
Power Dissipation Derating Factor *1	P_C/°C		2.0	mW/°C
Operating Temperature	T_{opr}	—	–40 to +100	°C
Storage Temperature	T_{stg}	—	–55 to +125	°C

*1 Allowable power dissipation derating factor at Ta≥25°C

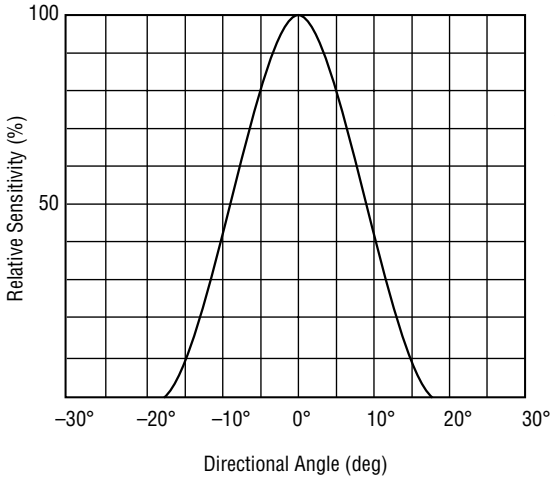
ELECTRICAL CHARACTERISTICS

(Ambient Temperature Ta=25°C)

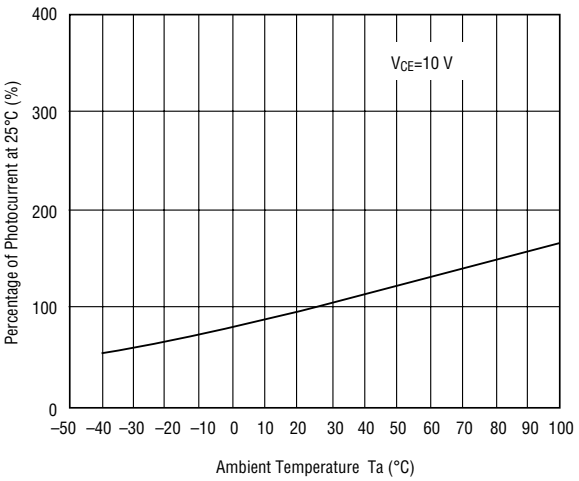
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-emitter Breakdown Voltage	BV_{CEO}	I_C=500 μA	20	—	—	V
Emitter-collector Breakdown Voltage	BV_{ECO}	I_E=10 μA	5	—	—	V
Dark Current	I_D	V_{CE}=10 V, 0 ℓ_X	—	—	100	nA
Photocurrent	I_L	V_{CE}=10 V Standard Illuminant A =100 ℓ_X	0.5	—	—	mA
Collector-emitter Saturation Voltage	$V_{CE\ (sat)}$	V_{CE}=10 V Standard Illuminant A = 500 ℓ_X	—	0.25	0.4	V

TYPICAL CHARACTERISTICS

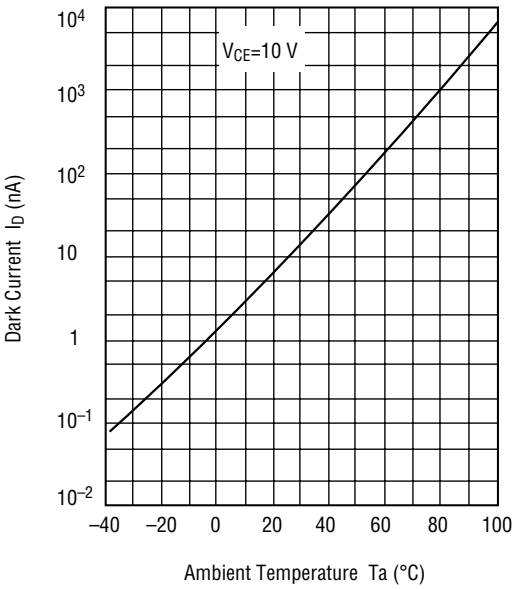
- **Directional Characteristics**



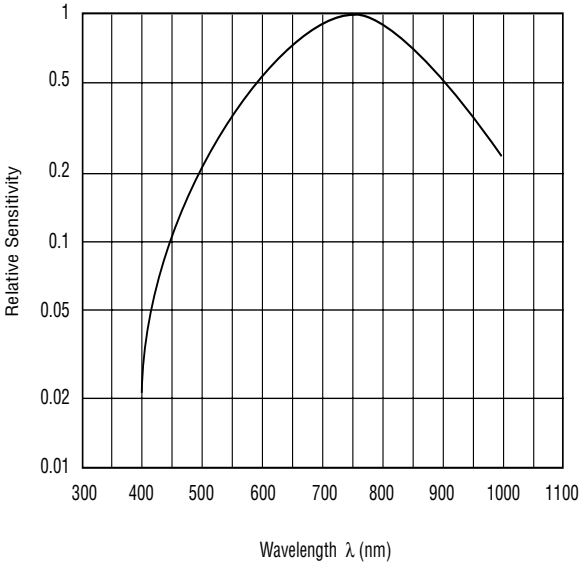
- **Photocurrent vs. Ambient Temperature**



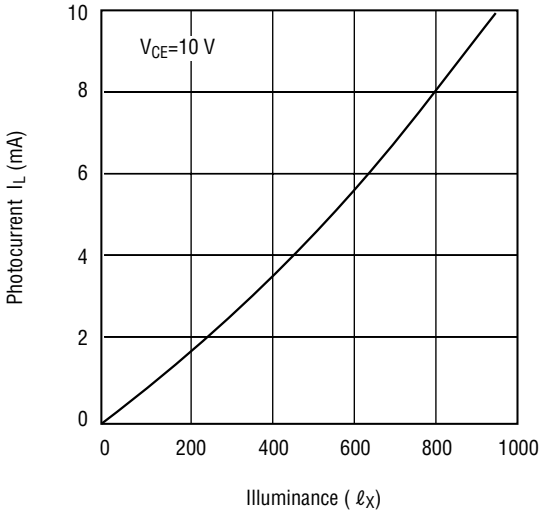
- **Dark Current vs. Ambient Temperature**



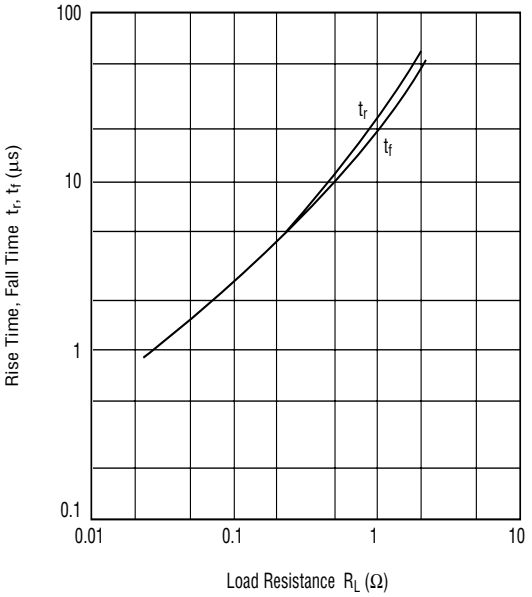
- **Spectral Sensitivity (Ta=25°C)**



- **Photocurrent vs. Illuminance (Ta=25°C)**

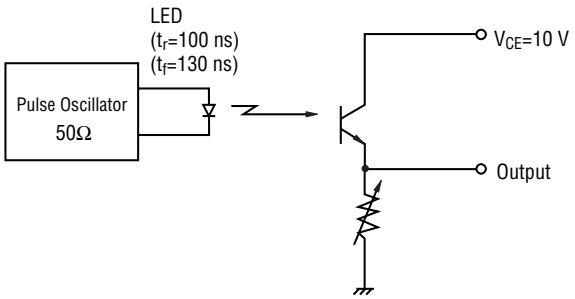


- **Rise Time, Fall Time vs. Load Resistance (Ta=25°C)**

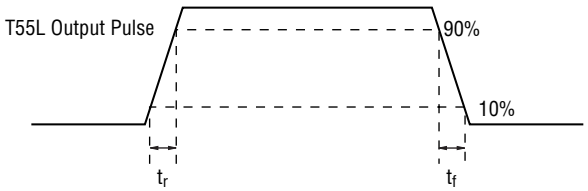


- **Note**

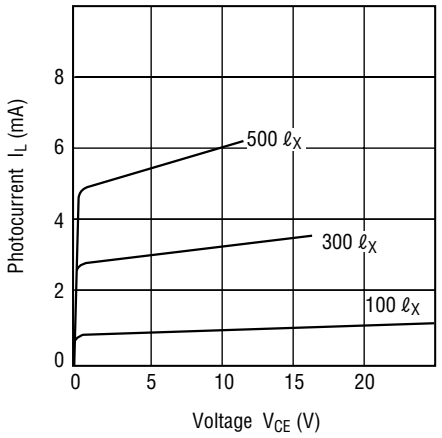
(1) Switching Time Measuring Circuit



(2) Rise Time (t_r), Fall Time (t_f)



- **Photocurrent vs. Voltage (Ta=25°C)**



- **Dark Current vs. Voltage (Ta=25°C)**