OMRON

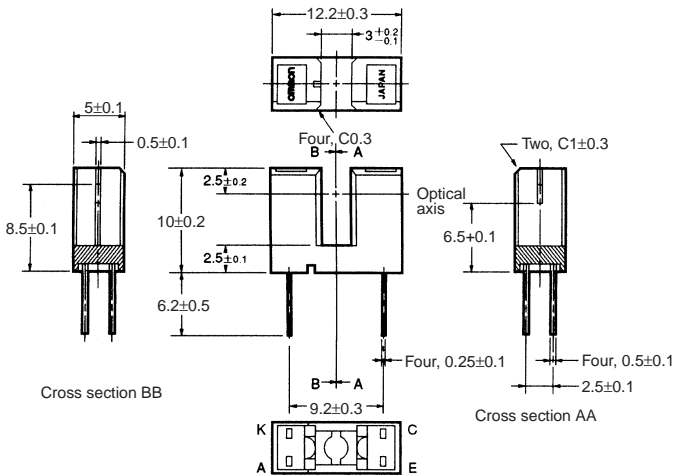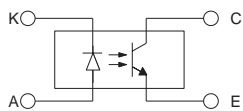## Photomicrosensor (Transmissive)
EE-SX198

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.

Cross section BB

Cross section AA

Internal Circuit

Terminal No.	Name
A	Anode
K	Cathode
C	Collector
E	Emitter

Unless otherwise specified, the tolerances are ±0.2 mm.

■ Features

- General-purpose model with a 3-mm-wide slot.
- PCB mounting type.
- High resolution with a 0.5-mm-wide aperture.

■ Absolute Maximum Ratings (Ta = 25°C)

| Item		Symbol	Rated value
Emitter	Forward current	I_F	50 mA (see note 1)
	Pulse forward current	I_{FP}	1 A (see note 2)
	Reverse voltage	V_R	4 V
Detector	Collector–Emitter voltage	V_{CEO}	30 V
	Emitter–Collector voltage	V_{ECO}	---
	Collector current	I_C	20 mA
	Collector dissipation	P_C	100 mW (see note 1)
Ambient temperature	Operating	Topr	−25°C to 85°C
	Storage	Tstg	−30°C to 100°C
Soldering temperature		Tsol	260°C (see note 3)

Note: 1. Refer to the temperature rating chart if the ambient temperature exceeds 25°C.

2. The pulse width is 10 μs maximum with a frequency of 100 Hz.

3. Complete soldering within 10 seconds.

## ■ Electrical and Optical Characteristics (Ta = 25°C)

| Item		Symbol	Value	Condition
Emitter	Forward voltage	V_F	1.2 V typ., 1.4 V max.	I_F = 30 mA
	Reverse current	I_R	0.01 μA typ., 10 μA max.	V_R = 4 V
	Peak emission wavelength	λ_P	940 nm typ.	I_F = 20 mA
Detector	Light current	I_L	0.5 mA min., 14 mA max.	I_F = 20 mA, V_{CE} = 5 V
	Dark current	I_D	2 nA typ., 200 nA max.	V_{CE} = 20 V, 0 ℓx
	Leakage current	I_{LEAK}	---	---
	Collector–Emitter saturated voltage	V_{CE} (sat)	0.1 V typ., 0.4 V max.	I_F = 40 mA, I_L = 0.5 mA
	Peak spectral sensitivity wavelength	λ_P	850 nm typ.	V_{CE} = 10 V
Rising time		tr	4 μs typ.	V_{CC} = 5 V, R_L = 100 Ω, I_L = 5 mA
Falling time		tf	4 μs typ.	V_{CC} = 5 V, R_L = 100 Ω, I_L = 5 mA

■ Engineering Data

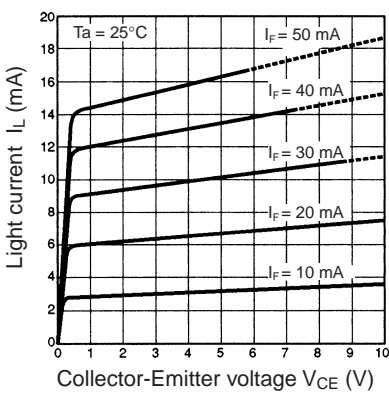**Forward Current vs. Collector Dissipation Temperature Rating**
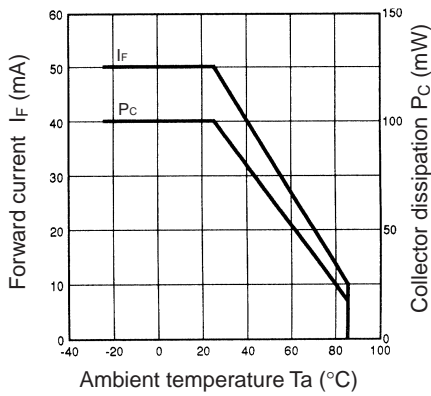
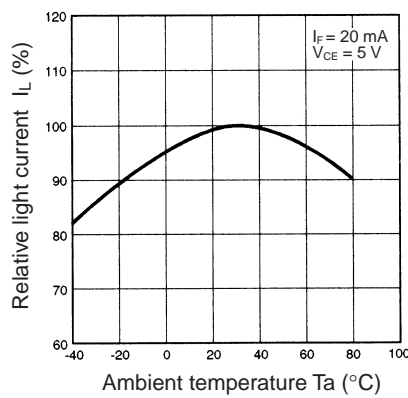**Forward Current vs. Forward Voltage Characteristics (Typical)**
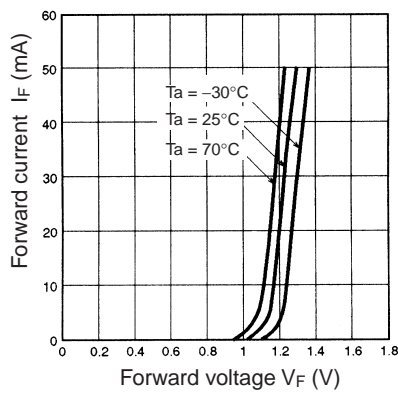
Light Current vs. Forward Current Characteristics (Typical)
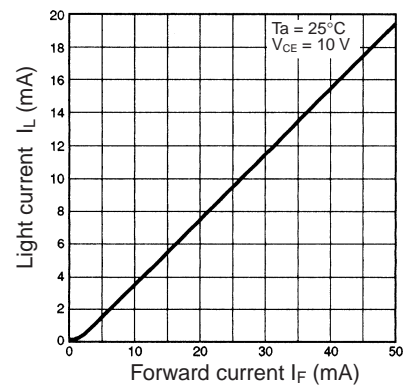
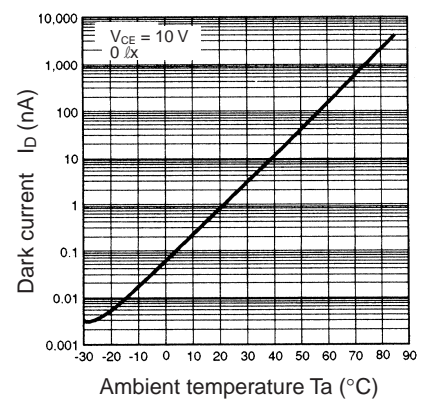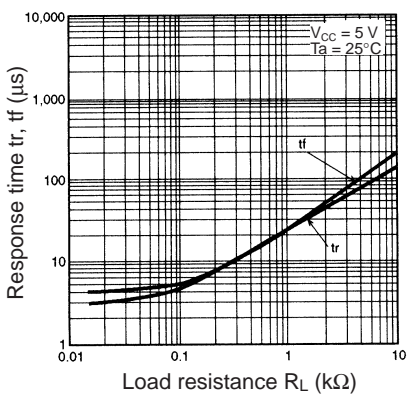**Light Current vs. Collector-Emitter Voltage Characteristics (Typical)**

Relative Light Current vs. Ambient Temperature Characteristics (Typical)
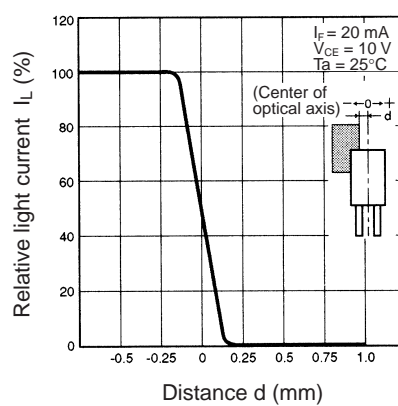

Dark Current vs. Ambient Temperature Characteristics (Typical)

Response Time vs. Load Resistance Characteristics (Typical)

Sensing Position Characteristics (Typical)

Response Time Measurement Circuit

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