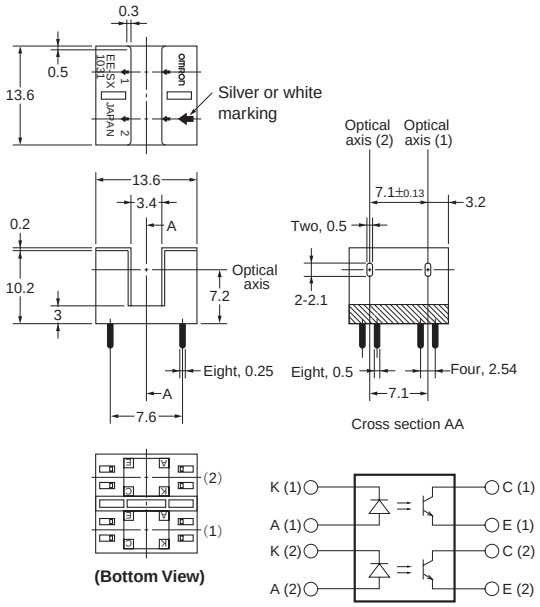
Photomicrosensor (Transmissive)
EE-SX1031

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



■ Features

- High resolution with a 0.5-mm-wide aperture.
- Separate LED/Phototransistor combinations within a single housing.
- PCB mounting type.

■ Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Rated value
Emitter	**Forward current**	I_F	50 mA (see note)
	Reverse voltage	V_R	4 V
Detector	**Collector–Emitter voltage**	V_{CEO}	30 V
	Collector current	I_C	20 mA
	Collector dissipation	P_C	100 mW
Ambient temperature	**Operating**	Topr	–25°C to 85°C
	Storage	Tstg	–30°C to 100°C
Soldering temperature		Tsol	260°C

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

2. Complete soldering within 10 seconds.

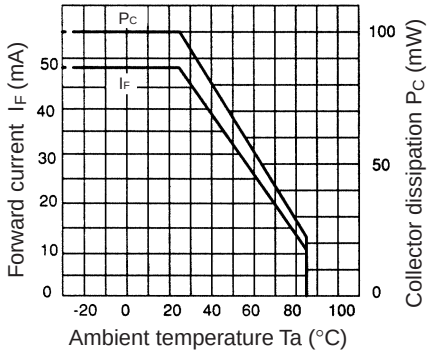
■ Electrical and Optical Characteristics (Ta = 25°C)

Item		Symbol	Value	Condition
Emitter	**Forward voltage**	V_F	1.2 V typ., 1.5 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 to 14 mA max.	I_F = 20 mA, V_{CE} = 10 V
	Dark current	I_D	2 nA typ., 200 nA max.	V_{CE} = 10 V, 0 ℓx
	Collector–Emitter saturated voltage	V_{CE} (sat)	0.15 V typ., 0.4 V max.	I_F = 20 mA, I_L = 0.1 mA
	Peak spectral sensitivity wavelength	λ_P	850 nm typ.	V_{CE} = 10 V
Rising time (see note)		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

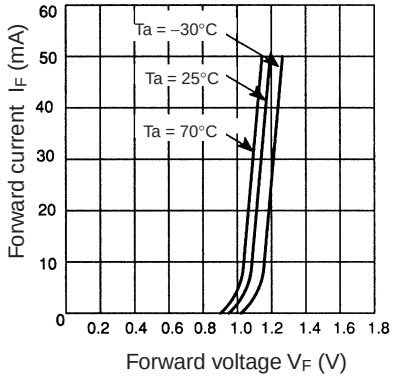
Note: Refer to *Response Time Measurement Circuit*.

■ Engineering Data

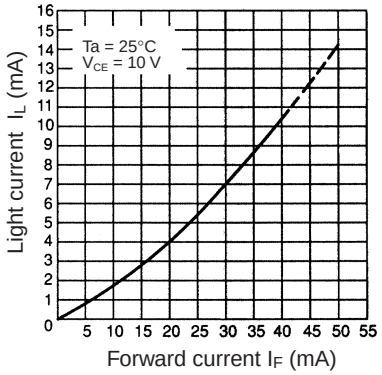
Forward Current vs. Collector Dissipation Temperature Rating



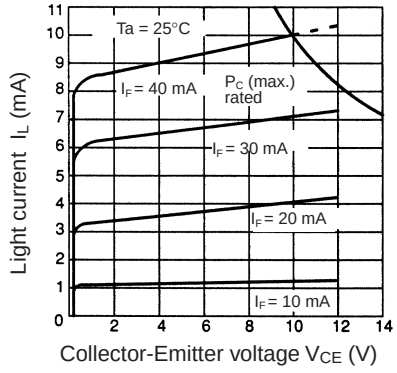
Forward Current vs. Forward Voltage Characteristics (Typical)



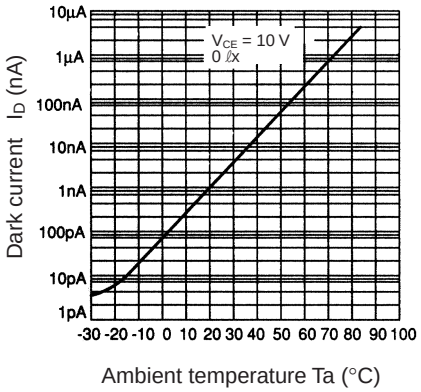
Light Current vs. Forward Current Characteristics (Typical)



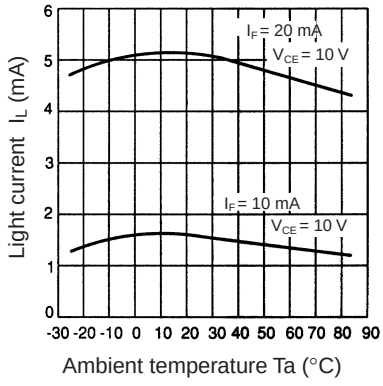
Light Current vs. Collector-Emitter Voltage Characteristics (Typical)



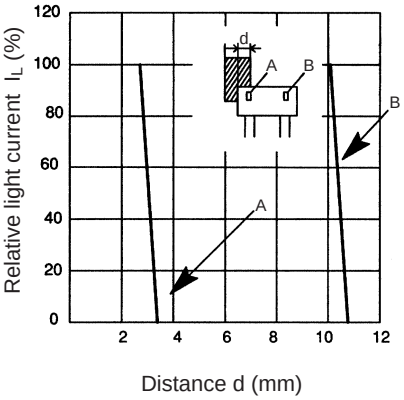
Dark Current vs. Ambient Temperature Characteristics (Typical)



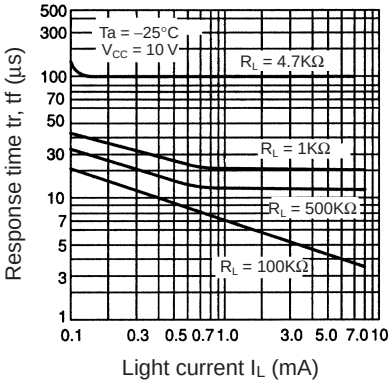
Light Current vs. Ambient Temperature Characteristics (Typical)



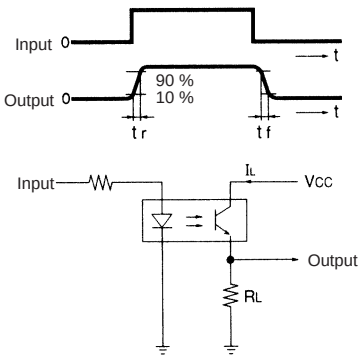
Sensing Position Characteristics (Typical)



Response Time vs. Load Resistance Characteristics (Typical)



Response Time Measurement Circuit



Note: The operating conditions of the Photomicrosensor must be within the absolute maximum rating ranges.