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[Omron](#)
[EE-SX1031](#)

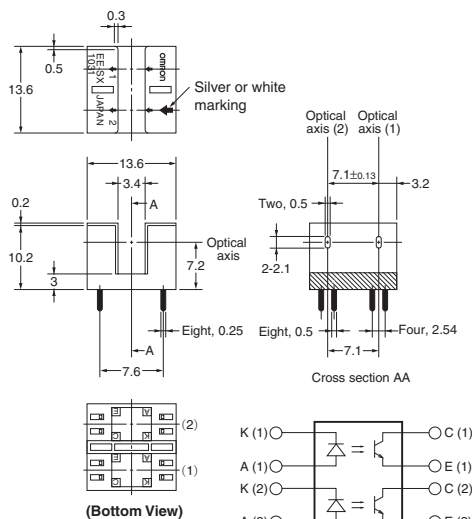
For any questions, you can email us directly:

sales@integrated-circuit.com

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.
- RoHS Compliant.

■ 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	T_{opr} -25°C to 85°C
Storage temperature	Operating	T_{opr} -25°C to 85°C
	Storage	T_{stg} -30°C to 100°C
Soldering temperature	T_{sol}	260°C

Note: 1. Refer to the temperature rating chart if the ambient temperature exceeds 25°C.
2. Complete soldering within 10 seconds.

■ Ordering Information

Description	Model
Photomicrosensor (transmissive)	EE-SX1031

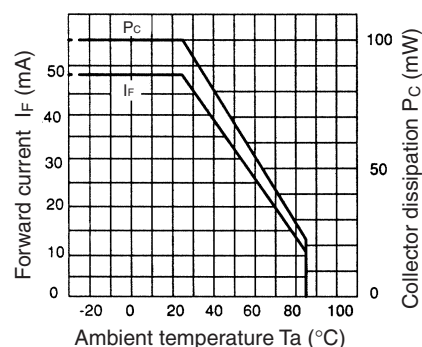
■ Electrical and Optical Characteristics (Ta = 25°C)

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 μ A typ., 10 μ A 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)	t_r	4 μ s typ.	$V_{CC} = 5$ V, $R_L = 100 \Omega$, $I_L = 5$ mA
Falling time	t_f	4 μ s typ.	$V_{CC} = 5$ V, $R_L = 100 \Omega$, $I_L = 5$ mA

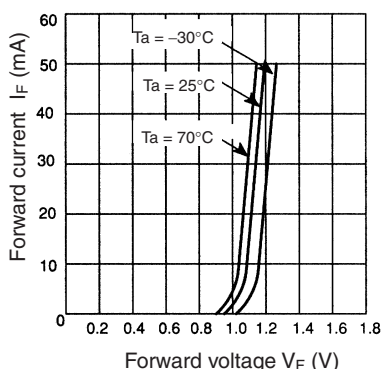
Note: Refer to *Response Time Measurement Circuit*.

Engineering Data

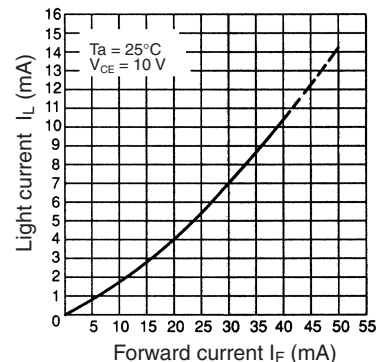
Forward Current vs. Collector Dissipation Temperature Rating



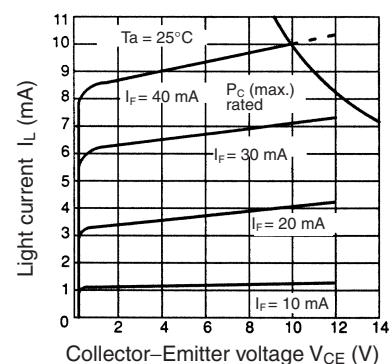
Forward Current vs. Forward Voltage Characteristics (Typical)



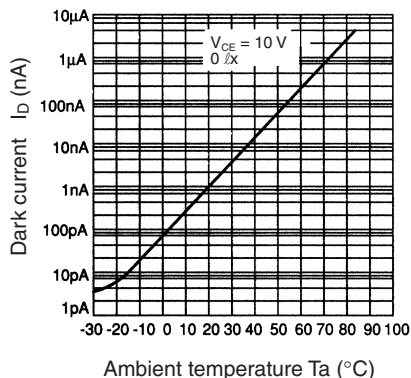
Light Current vs. Forward Current Characteristics (Typical)



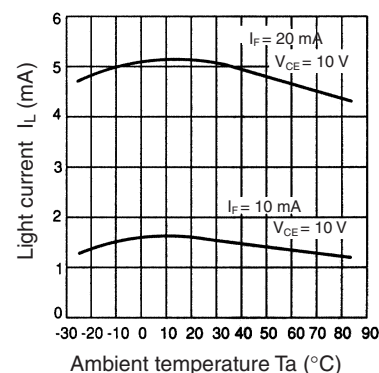
Light Current vs. Collector-Emitter Voltage Characteristics (Typical)



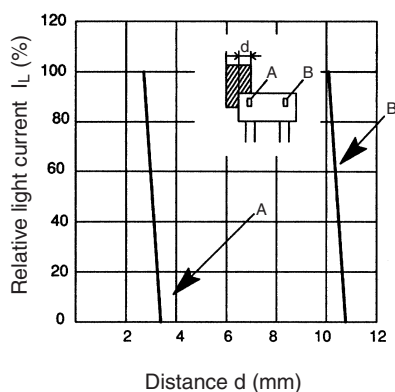
Dark Current vs. Ambient Temperature Characteristics (Typical)



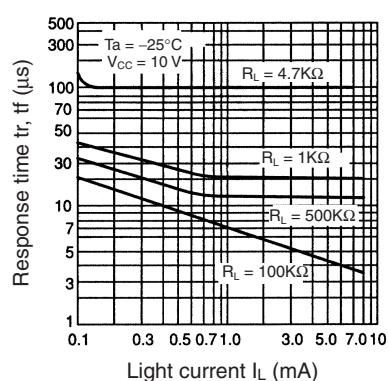
Light Current vs. Ambient Temperature Characteristics (Typical)



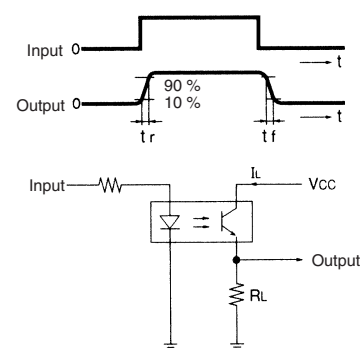
Sensing Position Characteristics (Typical)



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.

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ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

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**OMRON ELECTRONIC
COMPONENTS LLC**
55 E. Commerce Drive, Suite B
Schaumburg, IL 60173
847-882-2288

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Global - <http://www.omron.com>
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Cat. No. X305-E-1

10/10

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