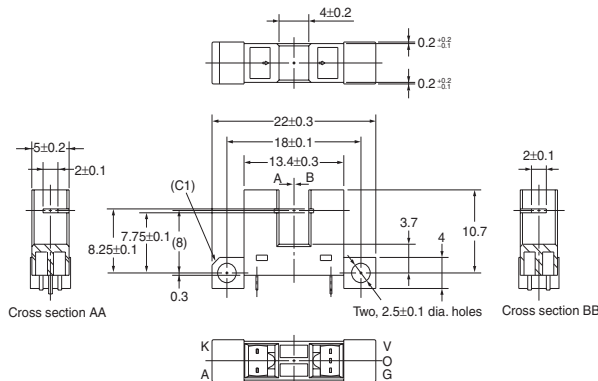


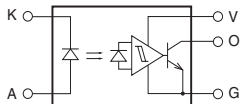
Photo IC Output Photomicrosensor (Transmissive) EE-SX3133

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



Internal Circuit



Unless otherwise specified, the tolerances are as shown below.

Terminal No.	Name
A	Anode
K	Cathode
V	Power supply (V _{CC})
O	Output (OUT)
G	Ground (GND)

Dimensions	Tolerance
3 mm max.	±0.3
3 < mm ≤ 6	±0.375
6 < mm ≤ 10	±0.45
10 < mm ≤ 18	±0.55
18 < mm ≤ 30	±0.65

■ Features

- Incorporates an IC chip with a built-in detector element and amplifier.
- Incorporates a detector element with a built-in temperature compensation circuit.
- A wide supply voltage range: 4.5 to 16 VDC
- Directly connects with C-MOS and TTL.
- High resolution with a 0.5-mm-wide sensing aperture.
- Side-slit model and Dark ON model.
- OMRON's XK8-series Connectors can be connected to the lead wires without a PCB. Contact your OMRON representative for information on obtaining XK8-series Connectors.

■ Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rated value
Emitter	Forward current	I _F 50 mA (see note 1)
	Reverse voltage	V _R 4 V
Detector	Power supply voltage	V _{CC} 16 V
	Output voltage	V _{OUT} 28 V
	Output current	I _{OUT} 16 mA
	Permissible output dissipation	P _{OUT} 250 mW (see note 1)
Ambient temperature	Operating	T _{opr} -40°C to 75°C
	Storage	T _{stg} -40°C to 85°C
Soldering temperature	T _{sol}	260°C (see note 2)

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

■ Ordering Information

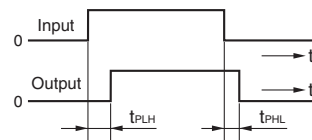
Description	Model
Photomicrosensor (transmissive)	EE-SX3133

■ 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 = 20 mA
	Reverse current	I _R 0.01 μA typ., 10 μA max.	V _R = 4 V
	Peak emission wavelength	λ _P 940 nm	I _F = 20 mA
Detector	Low-level output voltage	V _{OL} 0.12 V typ., 0.4 V max.	V _{CC} = 4.5 to 16 V, I _{OL} = 16 mA, I _F = 0 mA
	High-level output voltage	V _{OH} 15 V min.	V _{CC} = 16 V, R _L = 1 kΩ, I _F = 8 mA
	Current consumption	I _{CC} 3.2 mA typ., 10 mA max.	V _{CC} = 16 V
	Peak spectral sensitivity wavelength	λ _P 870 nm	V _{CC} = 4.5 to 16 V
LED current when output is OFF	I _{FT}	3 mA typ., 8 mA max.	V _{CC} = 4.5 to 16 V
LED current when output is ON			
Hysteresis	ΔH	15% typ.	V _{CC} = 4.5 to 16 V (see note 1)
Response delay time	t _{PLH}	3 μs typ.	V _{CC} = 4.5 to 16 V, I _F = 15 mA, I _{OL} = 16 mA (see note 2)
Response delay time	t _{PHL}	20 μs typ.	V _{CC} = 4.5 to 16 V, I _F = 15 mA, I _{OL} = 16 mA (see note 2)

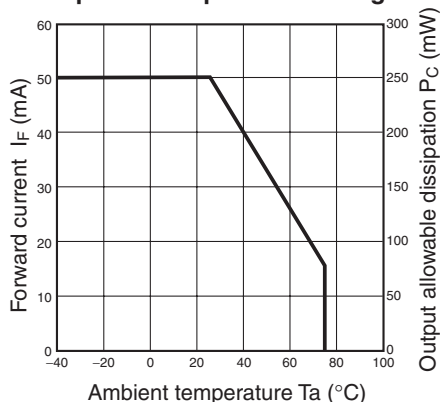
Note: 1. Hysteresis denotes the difference in forward LED current value, expressed in percentage.

2. The following illustrations show the definition of response delay time.

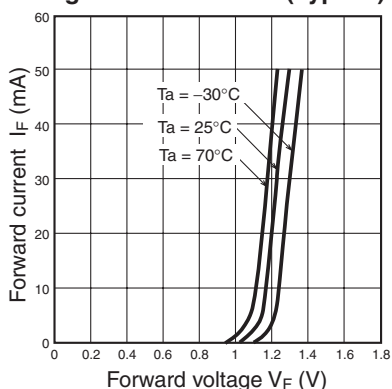


Engineering Data

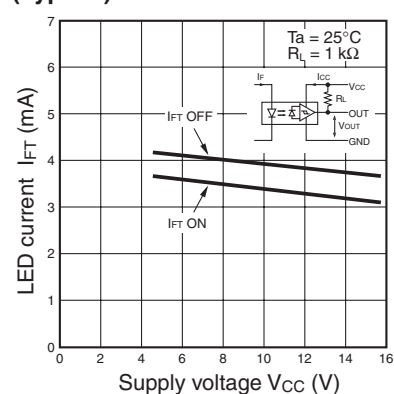
Forward Current vs. Collector Dissipation Temperature Rating



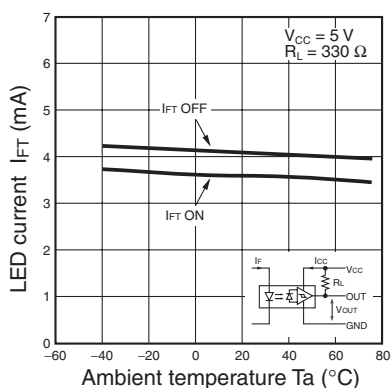
Forward Current vs. Forward Voltage Characteristics (Typical)



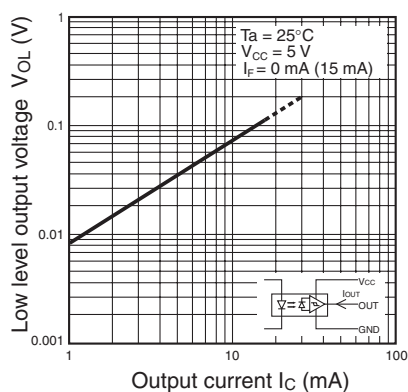
LED Current vs. Supply Voltage (Typical)



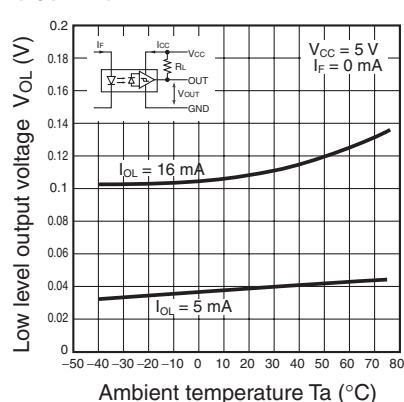
LED Current vs. Ambient Temperature Characteristics (Typical)



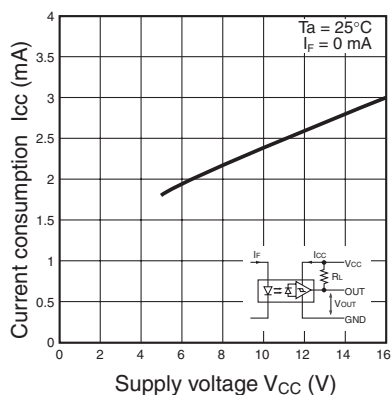
Low-level Output Voltage vs. Output Current (Typical)



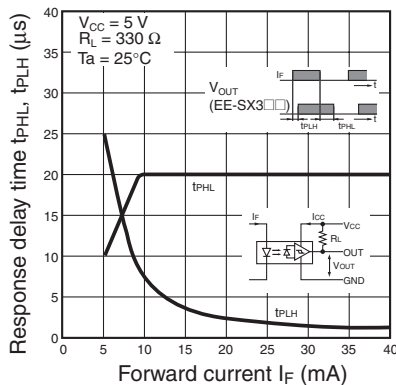
Low-level Output Voltage vs. Ambient Temperature Characteristics (Typical)



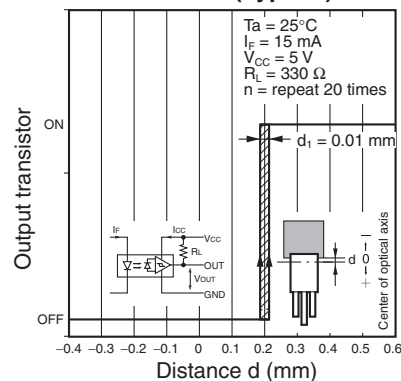
Current Consumption vs. Supply Voltage (Typical)



Response Delay Time vs. Forward Current (Typical)



Repeat Sensing Position Characteristics (Typical)



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