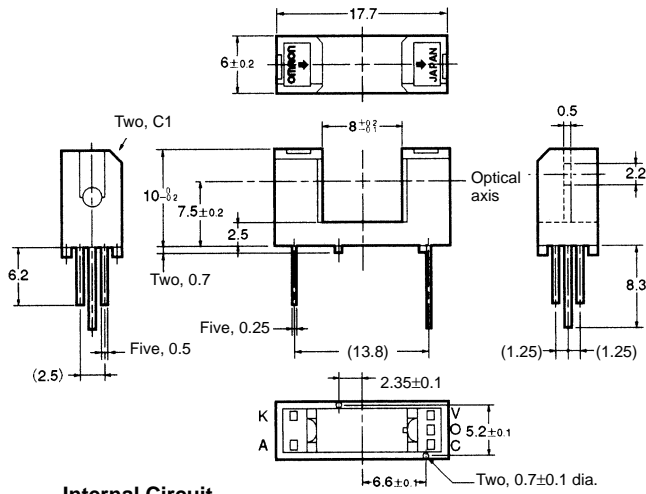


EE-SX3070/-SX4070

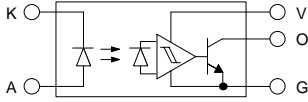
Photomicrosensor (Transmissive)

■ 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.
- Dark ON model (EE-SX3070)
- Light ON model (EE-SX4070)

■ 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.

■ 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 typ. 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 (EE-SX3070), I _F = 10 mA (EE-SX4070)
	High-level output voltage	V _{OH}	15 V min. V _{CC} = 16 V, R _L = 1 kΩ, I _F = 10 mA (EE-SX3070), I _F = 0 mA (EE-SX4070)
	Current consumption	I _{CC}	3.2 mA typ., 10 mA max. V _{CC} = 16 V
	Peak spectral sensitivity wavelength	λ _P	870 nm typ. V _{CC} = 4.5 to 16 V
LED current when output is OFF	I _{FT}	10 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 frequency	f	3 kHz min.	V _{CC} = 4.5 to 16 V, I _F = 20 mA, I _{OL} = 16 mA (see note 2)
Response delay time	t _{PLH} (t _{PHL})	3 μs typ.	V _{CC} = 4.5 to 16 V, I _F = 20 mA, I _{OL} = 16 mA (see note 3)
Response delay time	t _{PHL} (t _{PLH})	20 μs typ.	V _{CC} = 4.5 to 16 V, I _F = 20 mA, I _{OL} = 16 mA (see note 3)