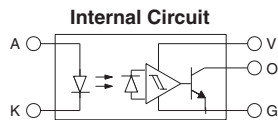
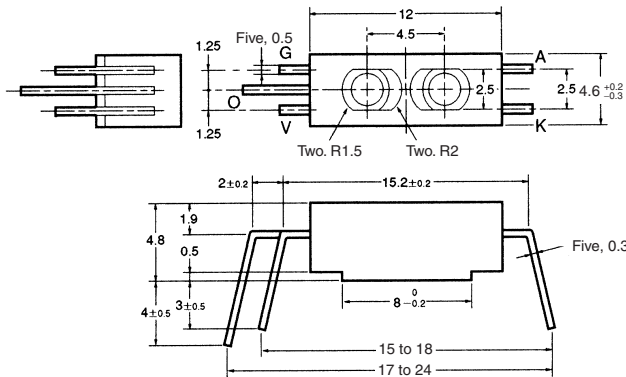


Photomicrosensor (Reflective) EE-SY310/-SY410

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



Unless otherwise specified, the tolerances are as shown below.

Terminal No.	Name	Dimensions	Tolerance
A	Anode	3 mm max.	±0.2
K	Cathode	3 < mm ≤ 6	±0.24
V	Power supply (V _{CC})	6 < mm ≤ 10	±0.29
O	Output (OUT)	10 < mm ≤ 18	±0.35
G	Ground (GND)	18 < mm ≤ 30	±0.42

■ Features

- Incorporates an IC chip with a built-in detector element and amplifier.
- Incorporates a detector element with a built-in temperature compensation circuit.
- Compact reflective model with a molded housing.
- A wide supply voltage range: 4.5 to 16 VDC
- Directly connects with C-MOS and TTL.
- Dark ON model (EE-SY310)
- Light ON model (EE-SY410)
- RoHS Compliant.

■ 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
	Pulse forward current	I _{FP} 1 A (see note 2)
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	Topr -40°C to 75°C
	Storage	Tstg -40°C to 85°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. Ordering Information

■ Ordering Information

Description		Model
Photomicrosensor (reflective)	Dark ON	EE-SY310
	Light ON	EE-SY410

■ 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 920 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, without incident light (EE-SY310), with incident light (EE-SY410) (see notes 1 and 2)
	High-level output voltage	V _{OH} 15 V min.	V _{CC} = 16 V, R _L = 1 kΩ, with incident light (EE-SY310), without incident light (EE-SY410) (see notes 1 and 2)
	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}	6 mA typ., 15 mA max.	V _{CC} = 4.5 to 16 V
LED current when output is ON			
Hysteresis	ΔH	17% typ.	V _{CC} = 4.5 to 16 V
Response frequency	f	50 Hz min.	V _{CC} = 4.5 to 16 V, I _F = 15 mA, I _{OL} = 16 mA
Response delay time	t _{PLH} (t _{PHL})	3 μs typ.	V _{CC} = 4.5 to 16 V, I _F = 15 mA, I _{OL} = 16 mA
Response delay time	t _{PHL} (t _{PLH})	20 μs typ.	V _{CC} = 4.5 to 16 V, I _F = 15 mA, I _{OL} = 16 mA