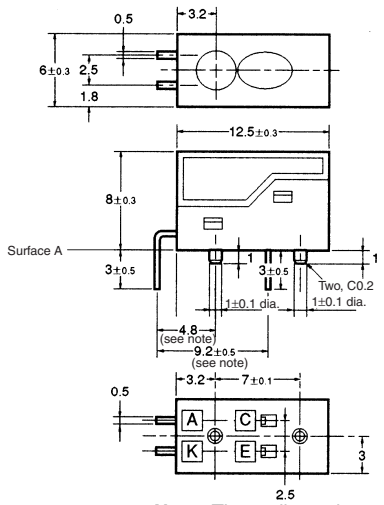
OMRON

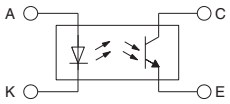
Photomicrosensor (Reflective)
EE-SY169

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



Internal Circuit



Terminal No.	Name
A	Anode
K	Cathode
C	Collector
E	Emitter

Note: These dimensions are for the surface A. Other lead wire pitch dimensions are for the housing surface.

Unless otherwise specified, the tolerances are as shown below.

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

- High-quality model with plastic lenses.
- Highly precise sensing range with a tolerance of ±0.6 mm horizontally and vertically.
- With a red LED sensing dyestuff-type inks.
- Limited reflective model.
- For lesser LED forward current, use EE-SY169B.
- RoHS Compliant.

■ Absolute Maximum Ratings (Ta = 25° C)

Item		Symbol	Rated value
Emitter	**Forward current**	I_F	40 mA (see note 1)
	Pulse forward current	I_{FP}	300 mA (see note 2)
	Reverse voltage	V_R	3 V
Detector	**Collector–Emitter voltage**	V_{CEO}	30 V
	Emitter–Collector voltage	V_{ECO}	---
	Collector current	I_C	20 mA
	Collector dissipation	P_C	100 mW (see note 1)
Ambient temperature	**Operating**	Topr	0° C to 70° C
	Storage	Tstg	–20° C to 80° 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

Description	Model
Photomicrosensor (reflective)	**EE-SY169**

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

Item		Symbol	Value	Condition
Emitter	**Forward voltage**	V_F	1.85 V typ., 2.3 V max.	I_F = 20 mA
	Reverse current	I_R	0.01 μA typ., 10 μA max.	V_R = 3 V
	Peak emission wavelength	λ_P	660 nm typ.	I_F = 20 mA
Detector	**Light current**	I_L	160 μA min., 2,000 μA max.	I_F = 20 mA, V_{CE} = 5 V White paper with a reflection ratio of 90%, d = 4 mm (see note)
	Dark current	I_D	2 nA typ., 200 nA max.	V_{CE} = 5 V, 0 ℓx
	Leakage current	I_{LEAK}	2 μA max.	I_F = 20 mA, V_{CE} = 5 V with no reflection
	Collector–Emitter saturated voltage	V_{CE} (sat)	---	---
	Peak spectral sensitivity wavelength	λ_P	850 nm typ.	V_{CE} = 5 V
Rising time		tr	30 μs typ.	V_{CC} = 5 V, R_L = 1 kΩ, I_L = 1 mA
Falling time		tf	30 μs typ.	V_{CC} = 5 V, R_L = 1 kΩ, I_L = 1 mA

Note: The letter “d” indicates the distance between the top surface of the sensor and the sensing object.