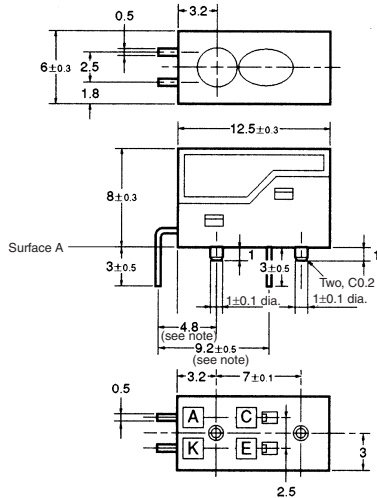


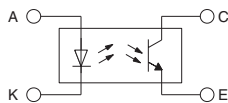
Photomicrosensor (Reflective) EE-SY169

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



Internal Circuit



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

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

■ 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	T_{opr} 0° C to 70° C
	Storage	T_{stg} -20° C to 80° C
Soldering temperature	T_{sol}	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.
Rising time	t_r	30 μs typ.	$V_{CC} = 5$ V, $R_L = 1$ kΩ, $I_L = 1$ mA
Falling time	t_f	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.