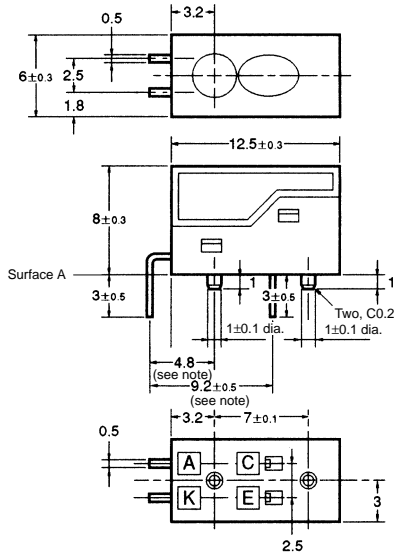
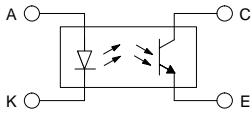


■ Dimensions

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 case 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.
- Convergent reflective model with infrared LED.

■ Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rated value
Emitter	Forward current	I_F 50 mA (see note 1)
	Pulse forward current	I_{FP} 1 A (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.

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

Item	Symbol	Value	Condition
Emitter	Forward voltage	V_F	1.5 V max. $I_F = 30$ mA
	Reverse current	I_R	10 μA max. $V_R = 4$ V
	Peak emission wavelength	λ_P	920 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	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.