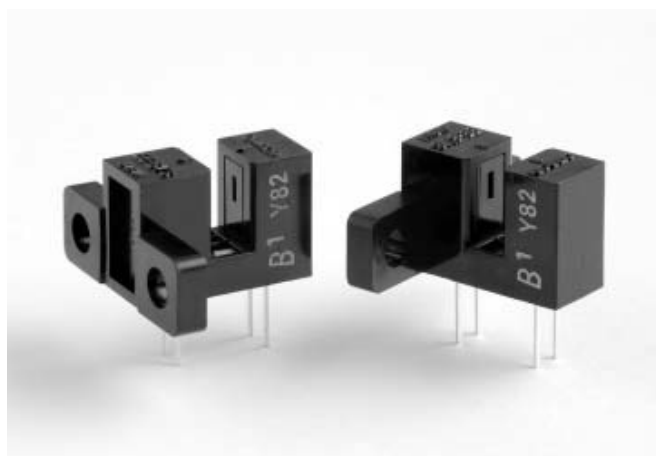


Features

- High-resolution model with a 0.2-mm-wide or 0.5-mm-wide sensing aperture, high-sensitivity model with a 1-mm-wide sensing aperture, and model with a horizontal sensing aperture are available.
- Solder terminal models:
EE-SV3/-SV3-CS/-SV3-DS/-SV3-GS
- PCB terminal models:
EE-SV3-B/-SV3-C/-SV3-D/-SV3-G



Specifications

■ 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	4 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}	-25°C to 85°C
	Storage	T_{stg}	-30°C to 100°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 μ s maximum with a frequency of 100 Hz.

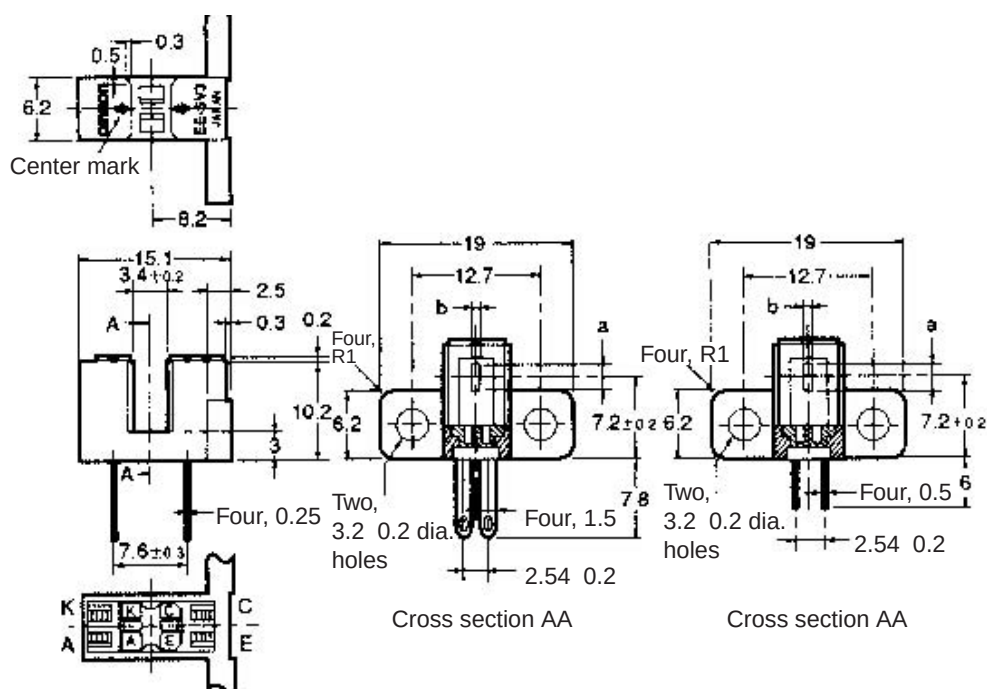
3. Complete soldering within 10 seconds.

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

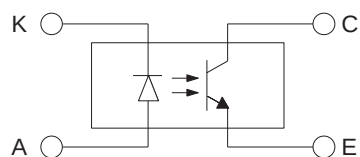
Item		Symbol	Value				Condition
			EE-SV3(-B)	EE-SV3-C(S)	EE-SV3-D(S)	EE-SV3-G(S)	
Emitter	Forward voltage	V _F	1.2 V typ., 1.5 V max.				I _F = 30 mA
	Reverse current	I _R	0.01 μA typ., 10 μA max.				V _R = 4 V
	Peak emission wavelength	λ _p	940 nm typ.				I _F = 20 mA
Detector	Light current	I _L	0.5 to 14 mA	1 to 28 mA	0.1 mA min.	0.5 to 14 mA	I _F = 20 mA, V _{CE} = 10 V
	Dark current	I _D	2 nA typ., 200 nA max.				V _{CE} = 10 V, 0 lx
	Leakage current	I _{LEAK}	–				–
	Collector-Emitter saturated voltage	V _{CE} (sat)	0.1 V typ., 0.4 V max.		–	0.1 V typ. 0.4 V max.	I _F = 20 mA, I _L = 0.1 μA
	Peak spectral sensitivity wavelength	λ _p	850 nm typ.				V _{CE} = 10 V
Rising time		tr	4 μs typ.				V _{CC} = 5 V, R _L = 100 Ω,
Falling time		tf	4 μs typ.				I _L = 5 mA

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



Internal Circuit



Model	Aperture (a x b)
EE-SV3(-B)	2.1 x 0.5
EE-SV3-C(S)	2.1 x 1.0
EE-SV3-D(S)	2.1 x 0.2
EE-SV3-G(S)	0.5 x 2.1

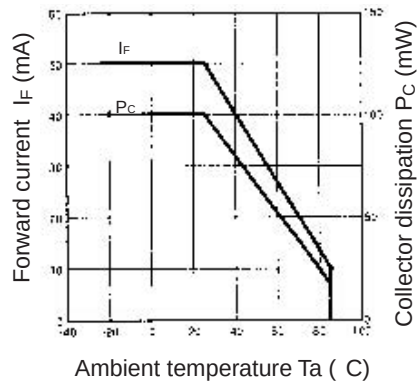
Unless otherwise specified, the tolerances are as shown below.

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

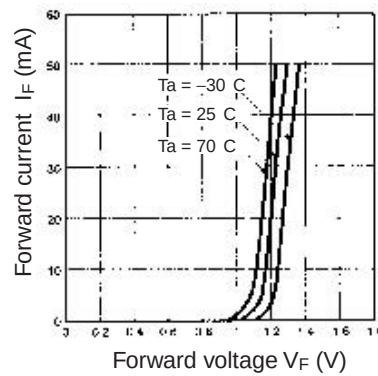
Dimensions	Tolerance
3 mm max.	±0.2
3 < mm ≤ 6	±0.24
6 < mm ≤ 10	±0.29
10 < mm ≤ 18	±0.35
18 < mm ≤ 30	±0.42

Engineering Data

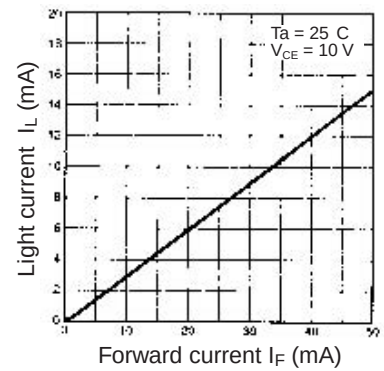
Forward Current vs. Collector Dissipation Temperature Rating



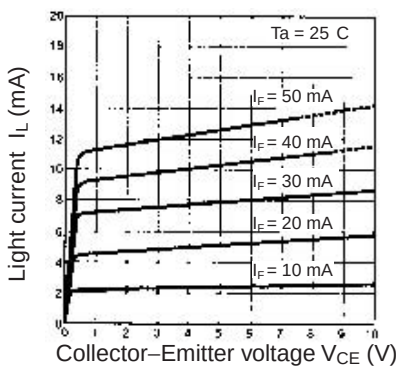
Forward Current vs. Forward Voltage Characteristics (Typical)



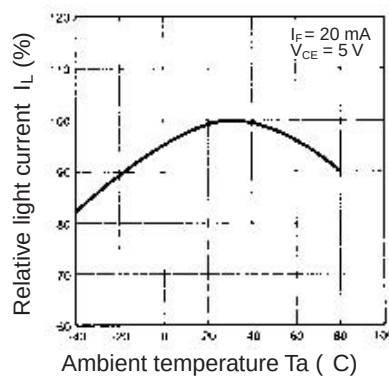
Light Current vs. Forward Current Characteristics (Typical)



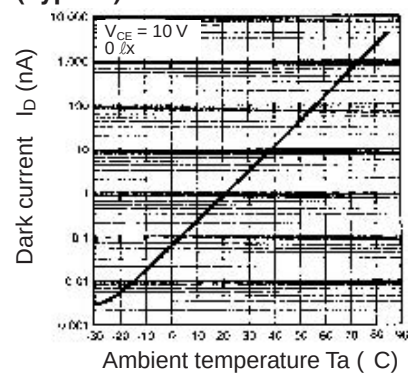
Light Current vs. Collector-Emitter Voltage Characteristics (EE-SV3(-B))



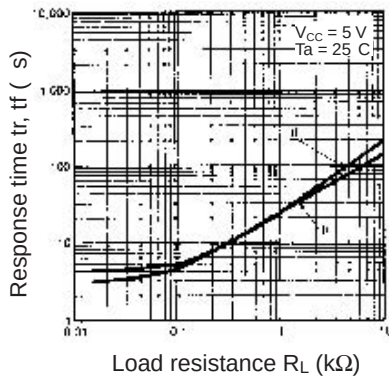
Relative Light Current vs. Ambient Temperature Characteristics (Typical)



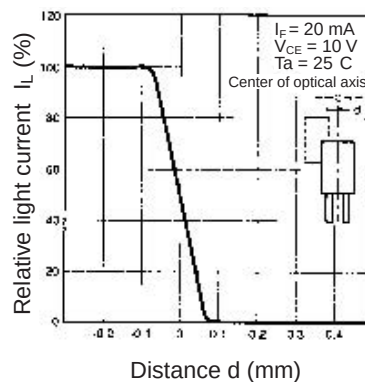
Dark Current vs. Ambient Temperature Characteristics (Typical)



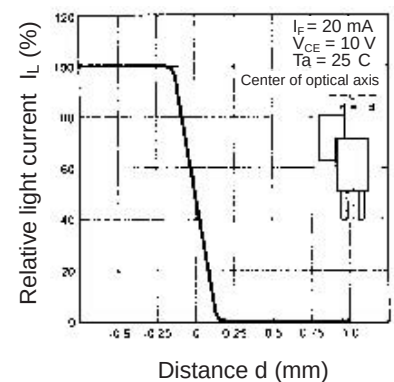
Response Time vs. Load Resistance Characteristics (Typical)



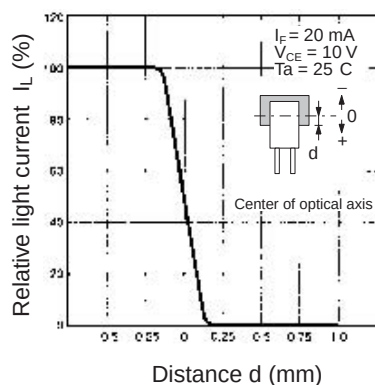
Sensing Position Characteristics (EE-SV3-D(S))



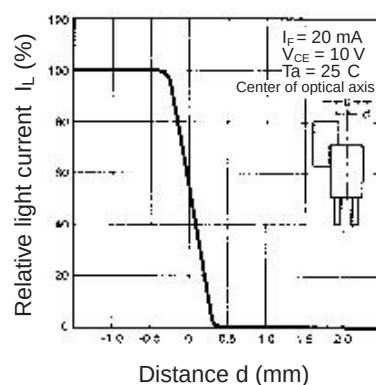
Sensing Position Characteristics (EE-SV3(-B))



Sensing Position Characteristics (EE-SV3-G(S))



Sensing Position Characteristics (EE-SV3-C(S))



Response Time Measurement Circuit

