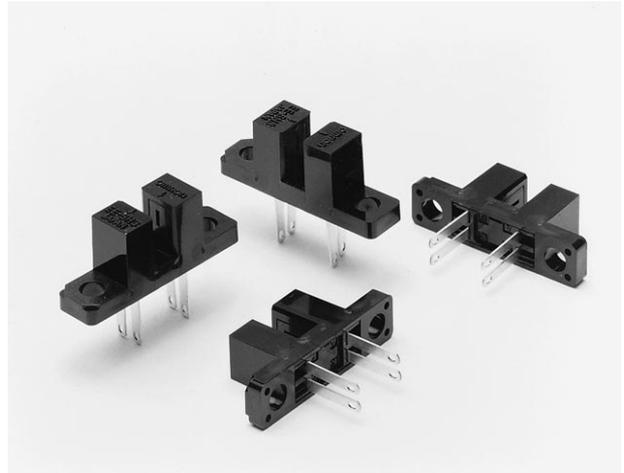
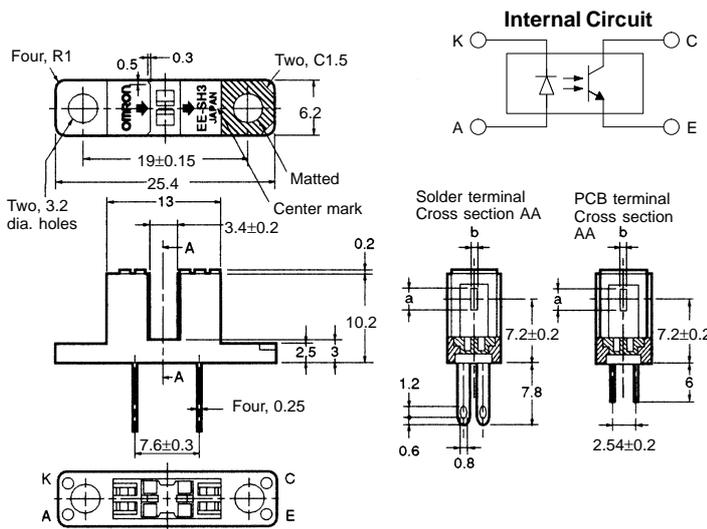


Transmissive

- Phototransistor output.
- 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-SH3/-SH3-CS/-SH3-DS/-SH3-GS
- PCB terminal models:
EE-SH3-B/-SH3-C/-SH3-D/-SH3-G
- Incorporating mounting tabs.



Dimensions



Terminal No.	Name	Model	Slit (a x b)
A	Anode	EE-SH3(-B)	2.1 x 0.5
K	Cathode	EE-SH3-C(S)	2.1 x 1.0
C	Collector	EE-SH3-D(S)	2.1 x 0.2
E	Emitter	EE-SH3-G(S)	0.5 x 2.1

Unless otherwise specified, the tolerances are as shown below.

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

Specifications

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rated value
Emitter	Forward current	I _F
	Pulse forward current	I _{FP}
	Reverse voltage	V _R
Detector	Collector-Emitter voltage	V _{CEO}
	Emitter-Collector voltage	V _{ECO}
	Collector current	I _C
	Collector dissipation	P _C
Ambient temperature	Operating	T _{opr}
	Storage	T _{stg}
	Soldering	T _{sol}

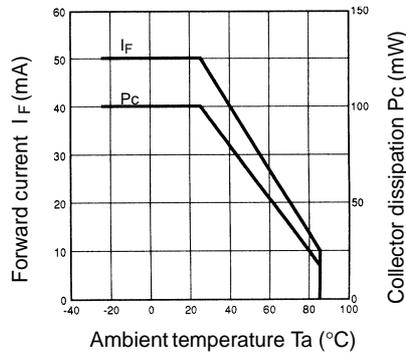
- Note:**
1. Refer to the temperature rating chart if the ambient temperature exceeds 25°C.
 2. The pulse width is 10 μs maximum with a frequency of 100 Hz.

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

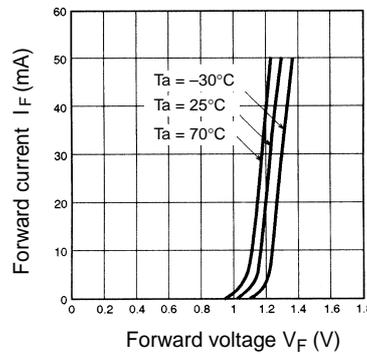
Item		Symbol	Value				Condition
			EE-SH3(-B)	EE-SH3-C(S)	EE-SH3-D(S)	EE-SH3-G(S)	
Emitter	Forward voltage	V_F	1.2 V typ., 1.5 V max.				$I_F = 30$ mA
	Reverse current	I_R	0.01 μ A typ., 10 μ A max.				$V_R = 4$ V
	Peak emission wavelength	λ_P	940 nm typ.				$I_F = 20$ mA
Detector	Light current	I_L	0.5 to 14 mA typ.	1 to 28 mA typ.	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 ℓ x
	Leakage current	I_{LEAK}	---				---
	Collector–Emitter saturated voltage	$V_{CE}(\text{sat})$	0.1 V typ., 0.4 V max.				$I_F = 20$ mA, $I_L = 0.1$ mA
Detector	Peak spectral sensitivity wavelength	λ_P	850 nm typ.				$V_{CE} = 10$ V
Rising time		t_r	4 μ s typ.				$V_{CC} = 5$ V, $R_L = 100$ Ω , $I_L = 5$ mA
Falling time		t_f	4 μ s typ.				

Engineering Data

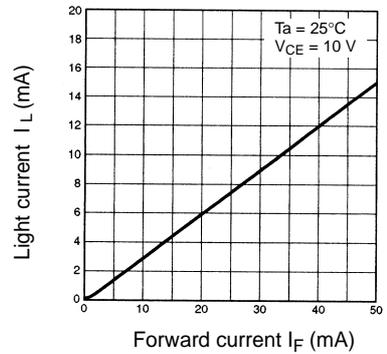
Forward Current vs. Collector Dissipation Temperature Rating



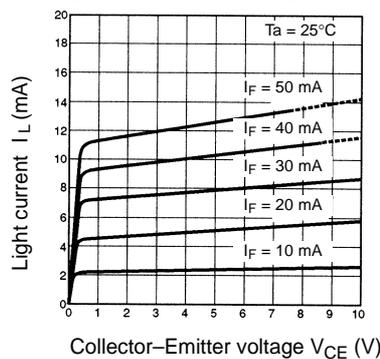
Forward Current vs. Forward Voltage Characteristics (Typical)



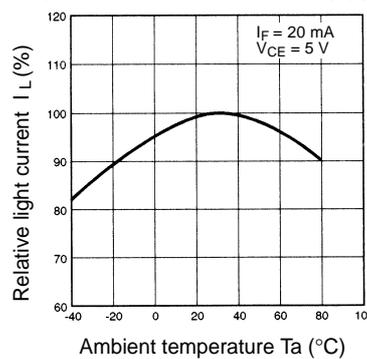
Light Current vs. Forward Current Characteristics (Typical)



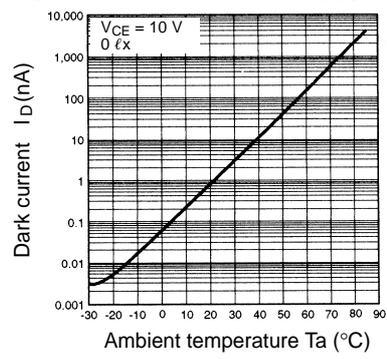
Light Current vs. Collector–Emitter Voltage Characteristics (EE-SH3(-B))



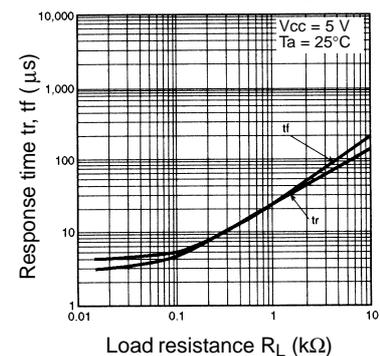
Relative Light Current vs. Ambient Temperature Characteristics (Typical)



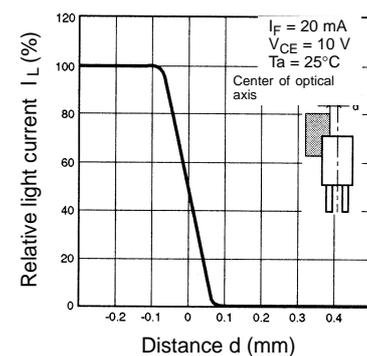
Dark Current vs. Ambient Temperature Characteristics (Typical)



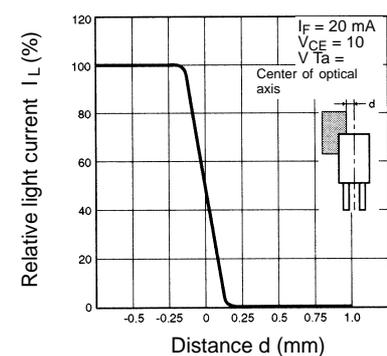
Response Time vs. Load Resistance Characteristics (Typical)



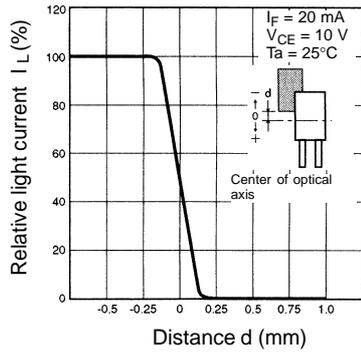
Sensing Position Characteristics (EE-SH3-D(S))



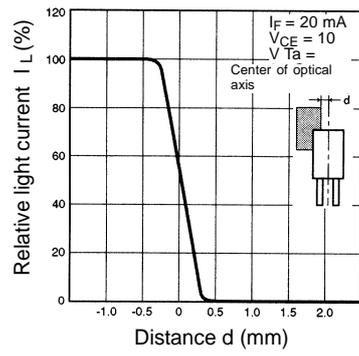
Sensing Position Characteristics (EE-SH3(-B))



Sensing Position Characteristics (EE-SH3-G(S))



Sensing Position Characteristics (EE-SH3-C(S))



Response Time Measurement Circuit

