

**Slot / PCB mounting Type**  
**(Slot width: 8 mm)**

- 18-mm-tall model with a deep slot.
- High resolution with a 0.5-mm-wide aperture.

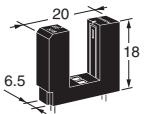

Be sure to read *Safety Precautions* on page 3.**Model Number Structure**

**EE-S J 8 - B**

(1) (2) (3) (4)

(1) Photomicrosensor (2) Transmissive (3) Distance between emitter and detector (4) PCB mounting

**Ordering Information****Photomicrosensor**

Appearance	Sensing method	Connecting method	Sensing distance	Aperture size (H × W) (mm)	Output type	Model	Minimum packing unit (Unit: pcs)
	Transmissive (slot type)	PCB mounting	 <b>8 mm</b> (slot width)	Both emitting side and detecting side 2.1 × 0.5	Phototransistor	<b>EE-SJ8-B</b>	1

**Note:** Order in multiples of minimum packing unit.**Ratings, Characteristics and Exterior Specifications****Absolute Maximum Ratings** (Ta = 25°C)

Item	Symbol	Rated value	Unit
<b>Emitter</b>			
Forward current	I <sub>F</sub>	50 *1	mA
Pulse forward current	I <sub>FP</sub>	1 *2	A
Reverse voltage	V <sub>R</sub>	4	V
<b>Detector</b>			
Collector-Emitter voltage	V <sub>CEO</sub>	30	V
Emitter-Collector voltage	V <sub>ECO</sub>	---	---
Collector current	I <sub>C</sub>	20	mA
Collector dissipation	P <sub>C</sub>	100 *1	mW
<b>Ambient temperature</b>			
Operating	T <sub>opr</sub>	-25 to 85	°C
Storage	T <sub>stg</sub>	-30 to 100	°C
Soldering temperature	T <sub>sol</sub>	260 *3	°C

\*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.

**Exterior Specifications**

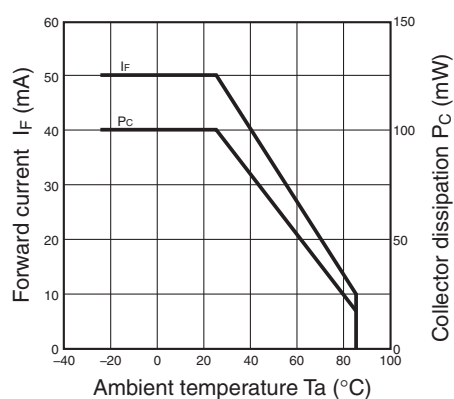
Connecting method	Weight (g)	Material
		Case
PCB mounting	1.62	Polycarbonate

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

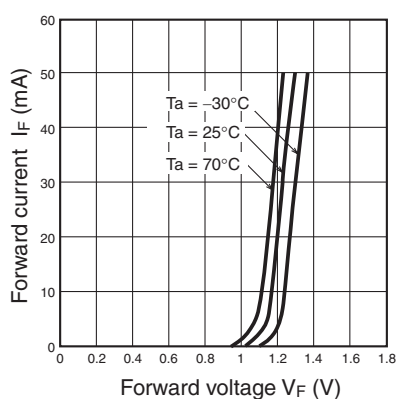
Item		Symbol	Value			Unit	Condition
			MIN.	TYP.	MAX.		
Emitter							
	Forward voltage	V <sub>F</sub>	---	1.2	1.5	V	I <sub>F</sub> = 30 mA
	Reverse current	I <sub>R</sub>	---	0.01	10	μA	V <sub>R</sub> = 4 V
	Peak emission wavelength	λ <sub>P</sub>	---	940	---	nm	I <sub>F</sub> = 20 mA
Detector							
	Light current	I <sub>L</sub>	0.05	---	5	mA	I <sub>F</sub> = 20 mA, V <sub>CE</sub> = 10 V
	Dark current	I <sub>D</sub>	---	2	200	nA	V <sub>CE</sub> = 10 V, 0 lx
	Leakage current	I <sub>LEAK</sub>	---	---	---	---	---
	Collector-Emitter saturated voltage	V <sub>CE</sub> (sat)	---	---	---	---	---
	Peak spectral sensitivity wavelength	λ <sub>P</sub>	---	850	---	nm	V <sub>CE</sub> = 10 V
Rising time		t <sub>r</sub>	---	4	---	μs	V <sub>CC</sub> = 5 V, R <sub>L</sub> = 100 Ω, I <sub>L</sub> = 5 mA
Falling time		t <sub>f</sub>	---	4	---	μs	V <sub>CC</sub> = 5 V, R <sub>L</sub> = 100 Ω, I <sub>L</sub> = 5 mA

## Engineering Data (Reference value)

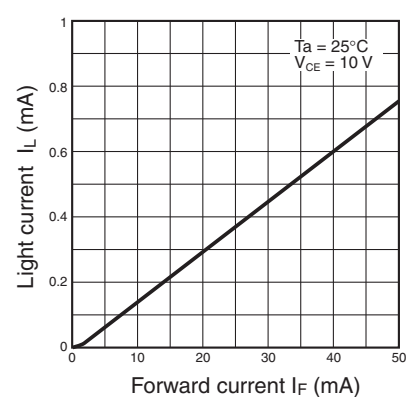
**Fig 1. Forward Current vs. Collector Dissipation Temperature Rating**



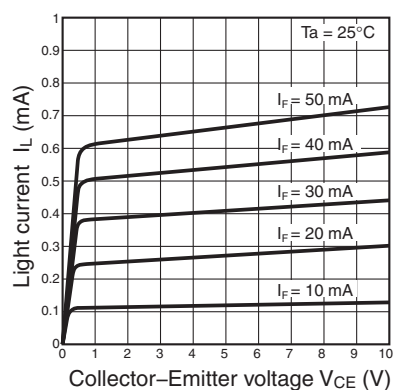
**Fig 2. Forward Current vs. Forward Voltage Characteristics (Typical)**



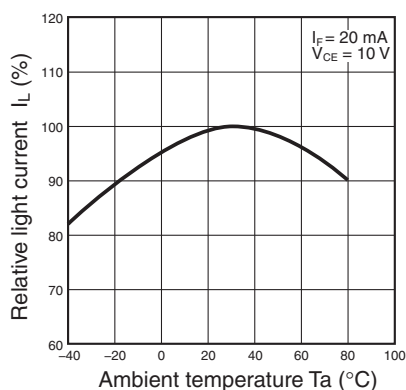
**Fig 3. Light Current vs. Forward Current Characteristics (Typical)**



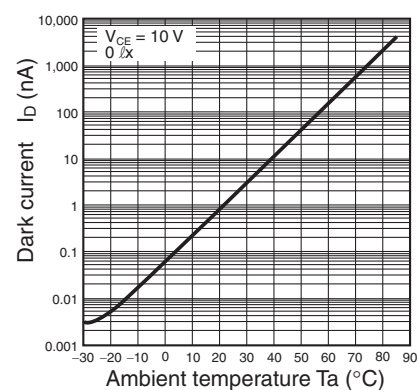
**Fig 4. Light Current vs. Collector-Emitter Voltage Characteristics (Typical)**



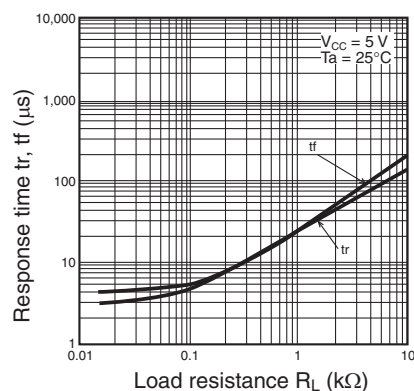
**Fig 5. Relative Light Current vs. Ambient Temperature Characteristics (Typical)**



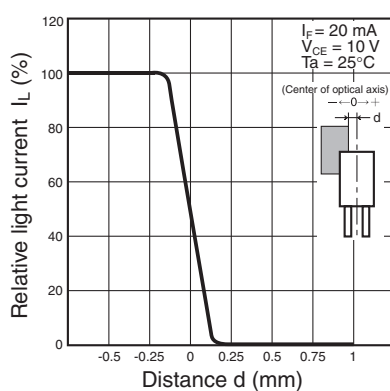
**Fig 6. Dark Current vs. Ambient Temperature Characteristics (Typical)**



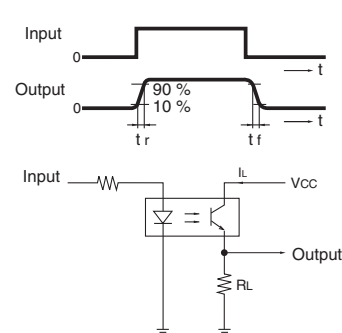
**Fig 7. Response Time vs. Load Resistance Characteristics (Typical)**



**Fig 8. Sensing Position Characteristics (Typical)**



**Fig 9. Response Time Measurement Circuit**



## Safety Precautions

To ensure safe operation, be sure to read and follow the Instruction Manual provided with the Sensor.

### CAUTION

This product is not designed or rated for ensuring safety of persons either directly or indirectly. Do not use it for such purposes.



### Precautions for Correct Use

Do not use the product in atmospheres or environments that exceed product ratings.

### Precautions for Safe Use

**Do not use the product with a voltage or current that exceeds the rated range.**

Applying a voltage or current that is higher than the rated range may result in explosion or fire.

**Do not miswire such as the polarity of the power supply voltage.**

Otherwise the product may be damaged or it may burn.

**This product does not resist water. Do not use the product in places where water or oil may be sprayed onto the product.**

## Dimensions and Internal Circuit

(Unit: mm)

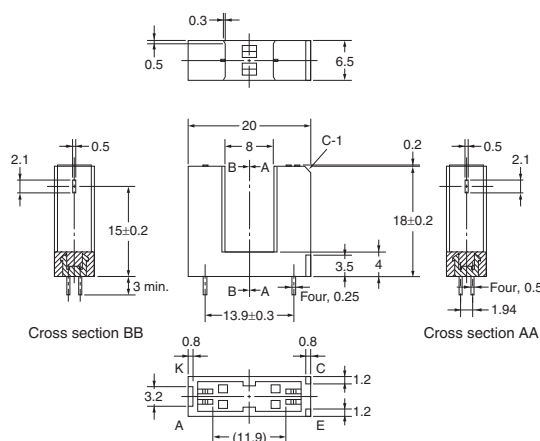
### Photomicrosensor

EE-SJ8-B



Aperture size (H×W)

Emitter	Detector
2.1 × 0.5	2.1 × 0.5



Internal circuit

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

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

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Device & Module Solutions Company

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