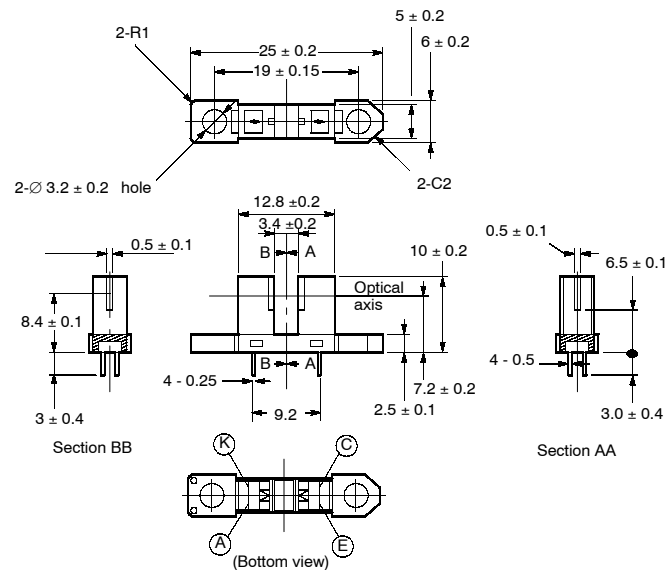


OMRON EE-SX2088

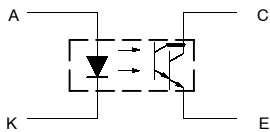
Photomicrosensor (Transmissive)

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



Internal Circuit



Unless otherwise specified, the tolerances are ± 0.2 mm.

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

■ Features

- 0.5-mA output min. with only 1-mA forward LED current.
- Mounting tabs to secure EE-SX2088 to PCB.
- Best suited to drive CMOS IC.

■ Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

| 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} | 35 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 |

- 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.

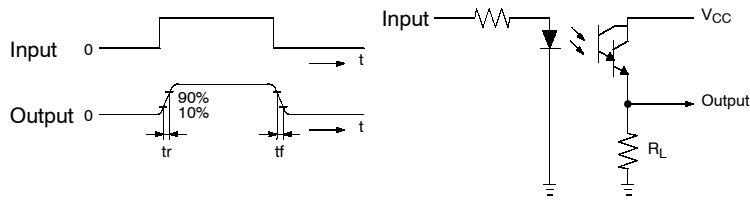
■ Ordering Information

| Description | Part number |
|---------------------------------|-------------|
| Photomicrosensor (Transmissive) | EE-SX2088 |

■ Electrical and Optical Characteristics ($T_a = 25^\circ\text{C}$)

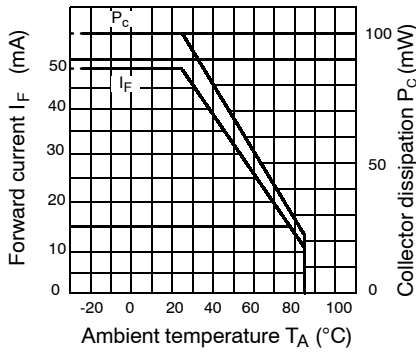
| Item | | Symbol | Value | Condition |
|-------------|--------------------------------------|----------------------|--|--|
| Emitter | Forward voltage | V_F | 1.2 V typ.; 1.4 V max. | $I_F = 20\text{mA}$ |
| | Reverse current | I_R | 0.01 μA typ.; 10 μA max. | $V_R = 4\text{V}$ |
| | Peak emission wavelength | $\lambda_p(L)$ | 940 nm typ. | $I_F = 20\text{mA}$ |
| Detector | Dark current | I_D | 2 nA typ.; 1000 nA max. | $V_{CE} = 10\text{V } 0\text{/x}$ |
| | Peak spectral sensitivity wavelength | $\lambda_p(P)$ | 850 nm typ. | $V_{CE} = 5\text{V}$ |
| Combination | Light current (collector current) | I_L | 0.5 to 20 mA | $I_F = 1\text{mA}$ $V_{CE} = 2\text{V}$ |
| | Collector-emitter saturated voltage | $V_{CE}(\text{sat})$ | 0.75 V typ.; 1 V max. | $I_F = 2\text{mA}$ $I_L = 0.5\text{mA}$ |
| | Rising time* | t_r | 70 μs typ. | $V_{CC} = 2\text{V}$ $I_L = 2\text{mA}$ |
| | Falling time* | t_f | 70 μs typ. | $R_L = 100\ \Omega$ |

*The illustrations on the following page show the rising time, t_r , and the falling time, t_f .

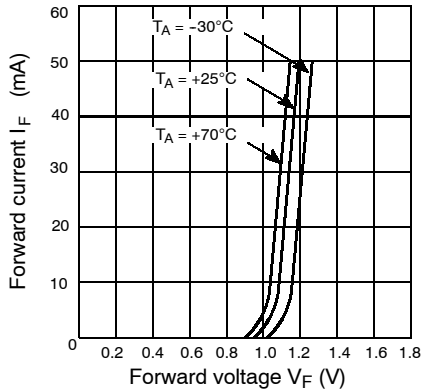


Engineering Data

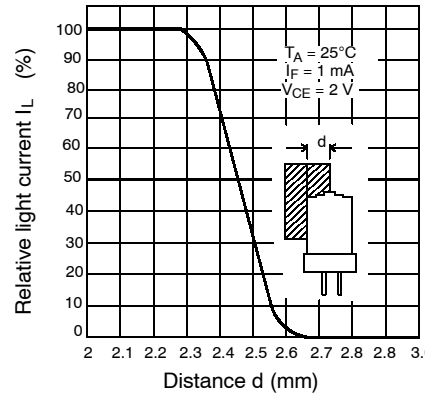
Temperature Characteristics



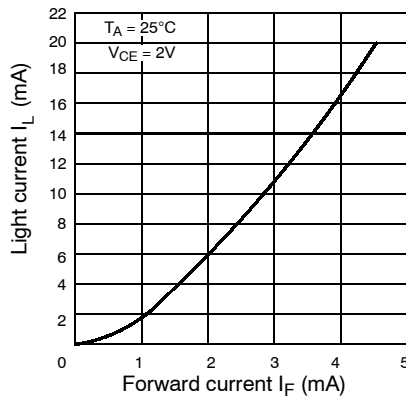
Input Characteristics (Typical)



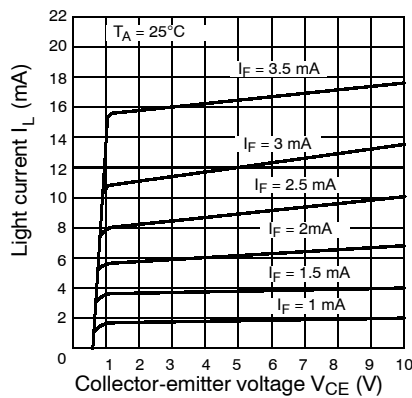
Sensing Position Characteristics (Typical)



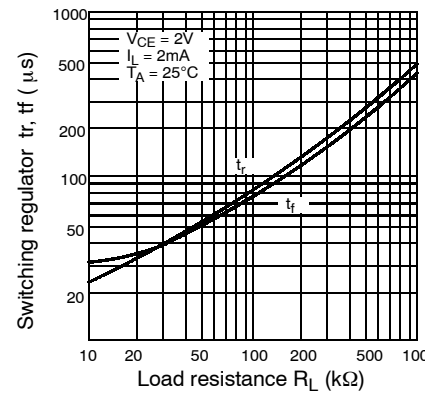
Input/output Characteristics (Typical)



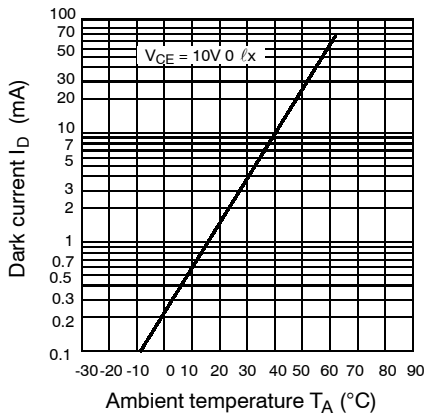
Output Characteristics (Typical)



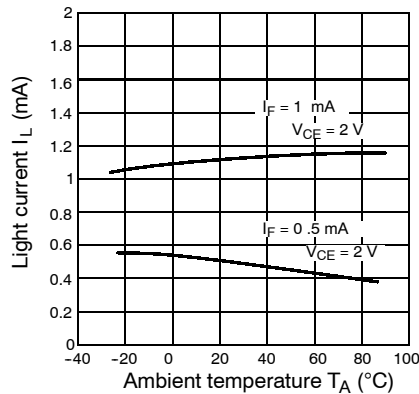
Response Time vs Load Resistance Characteristics (Typical)



Dark Current Temperature Dependency (Typical)



Light Current Temperature Dependency (Typical)



NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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