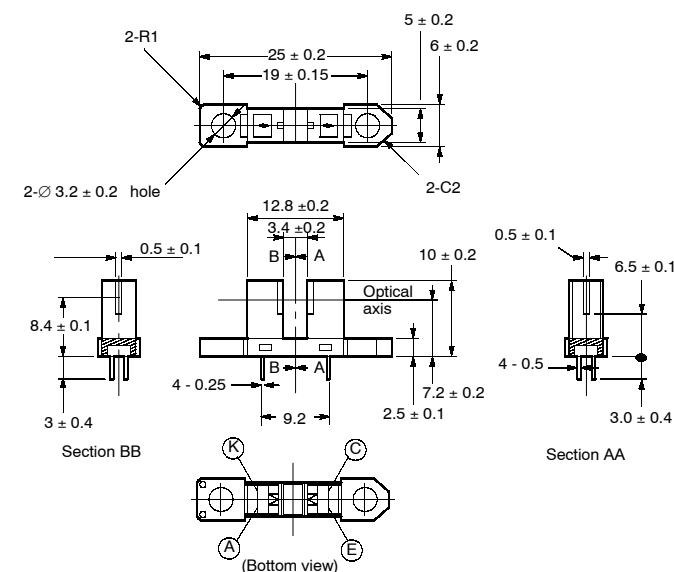


OMRON EE-SX2088

Photomicrosensor (Transmissive)

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



Internal Circuit

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

Unless otherwise specified,
the tolerances are ± 0.2 mm.

■ 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	T_{opr}	-25°C to 85°C
Ambient temperature	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.

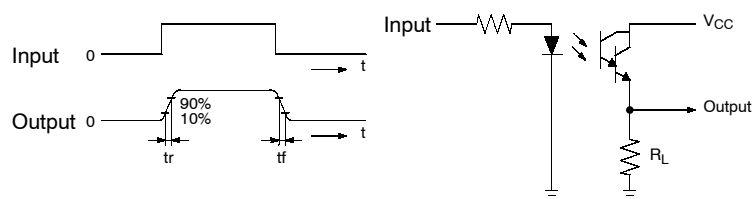
■ Ordering Information

Description	Part number
Photomicrosensor (Transmissive)	EE-SX2088

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

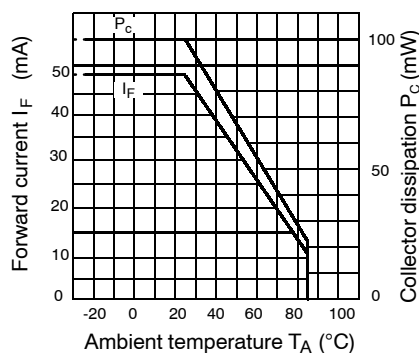
Item		Symbol	Value	Condition
Emitter	Forward voltage	V_F	1.2 V typ.; 1.4 V max.	$I_F = 20\text{ mA}$
	Reverse current	I_R	0.01 μA typ.; 10 μA max.	$V_R = 4\text{ V}$
	Peak emission wavelength	$\lambda_p(L)$	940 nm typ.	$I_F = 20\text{ mA}$
Detector	Dark current	I_D	2 nA typ.; 1000 nA max.	$V_{CE} = 10\text{ V } 0/x$
	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	$V_{CE(sat)}$	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 .

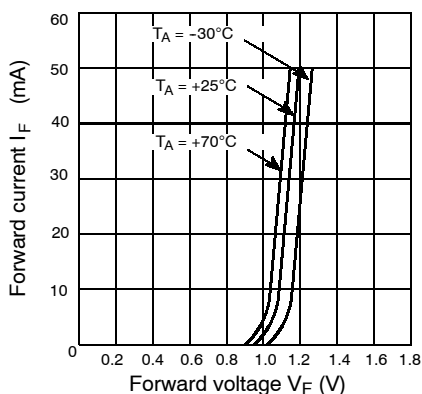


Engineering Data

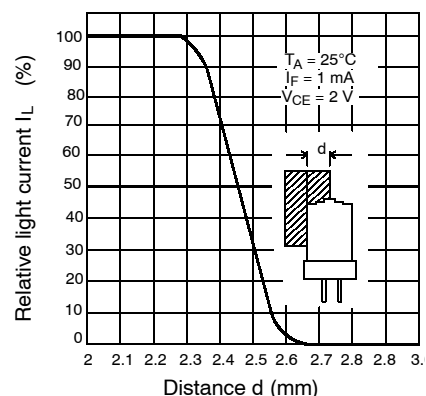
Temperature Characteristics



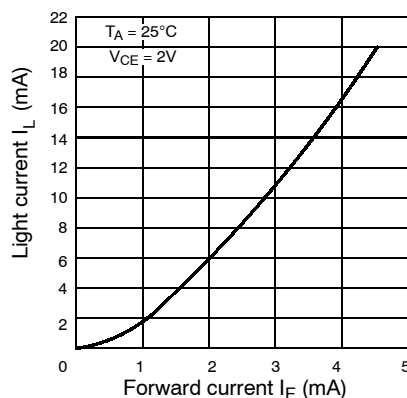
Input Characteristics (Typical)



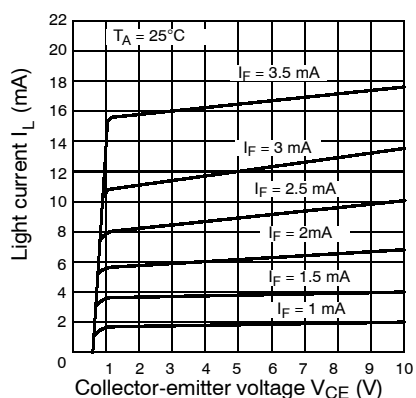
Sensing Position Characteristics (Typical)



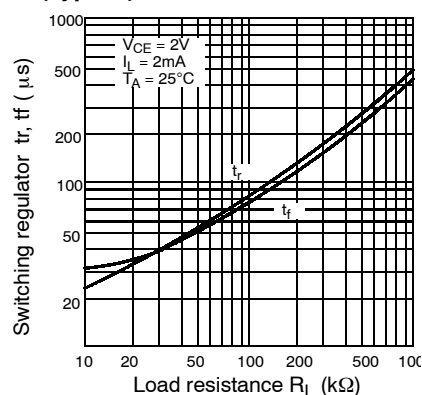
Input/output Characteristics (Typical)



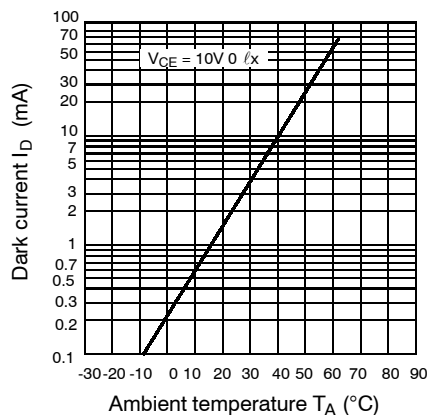
Output Characteristics (Typical)



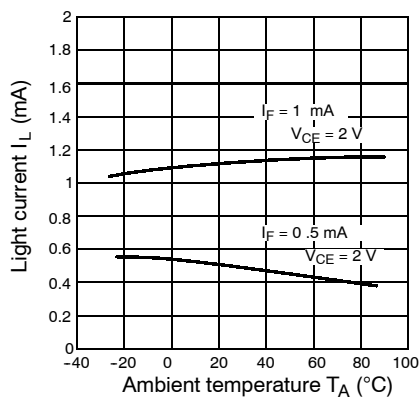
Response Time vs Load Resistance Characteristics (Typical)



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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