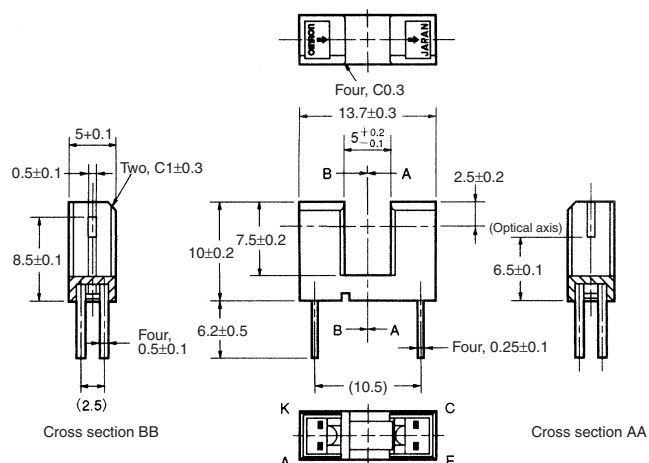


Photomicrosensor (Transmissive)

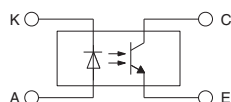
EE-SX1081

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



Internal Circuit



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

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

■ Features

- General-purpose model with a 5-mm-wide slot.
- PCB mounting type.
- High resolution with a 0.5-mm-wide aperture.
- RoHS Compliant.

■ 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	T_{opr} -25°C to 85°C
Storage	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.

■ Ordering Information

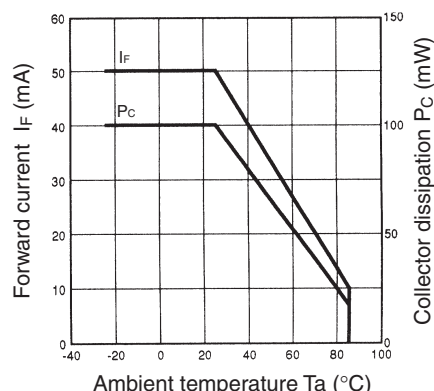
Description	Model
Photomicrosensor (transmissive)	EE-SX1081

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

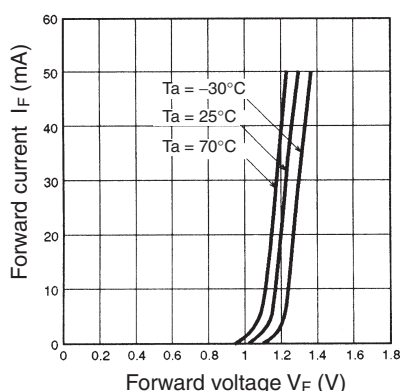
Item		Symbol	Value	Condition
Emitter	Forward voltage	V _F	1.2 V typ., 1.5 V max.	I _F = 30 mA
	Reverse current	I _R	0.01 μA typ., 10 μA max.	V _R = 4 V
	Peak emission wavelength	λ _p	940 nm typ.	I _F = 20 mA
Detector	Light current	I _L	0.5 mA min., 14 mA max.	I _F = 20 mA, V _{CE} = 10 V
	Dark current	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.	I _F = 20 mA, I _L = 0.1 mA
	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, I _L = 5 mA
Falling time		tf	4 μs typ.	V _{CC} = 5 V, R _L = 100 Ω, I _L = 5 mA

Engineering Data

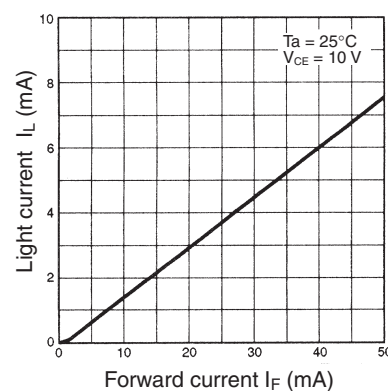
Forward Current vs. Collector Dissipation Temperature Rating



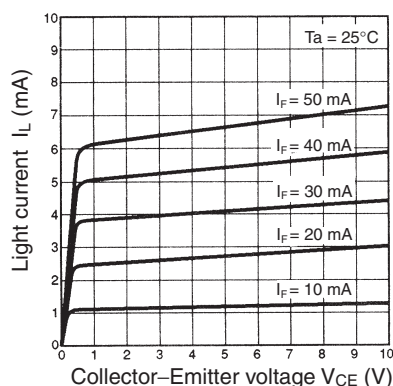
Forward Current vs. Forward Voltage Characteristics (Typical)



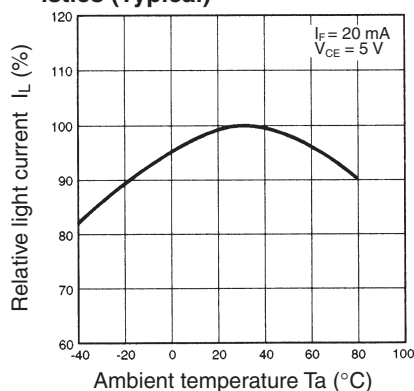
Light Current vs. Forward Current Characteristics (Typical)



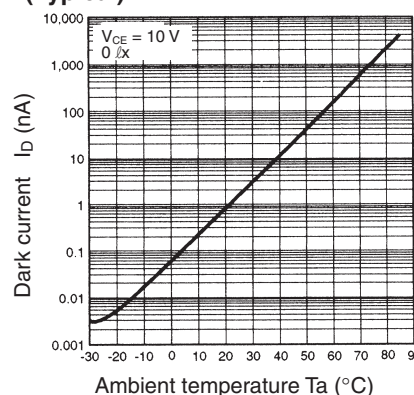
Light Current vs. Collector-Emitter Voltage Characteristics (Typical)



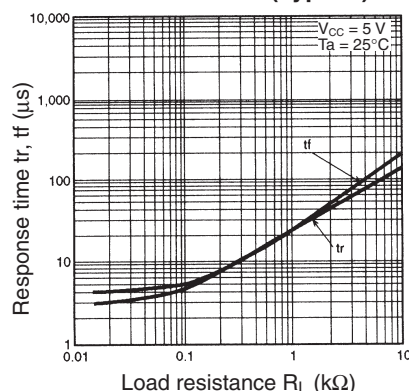
Relative Light Current vs. Ambient Temperature Characteristics (Typical)



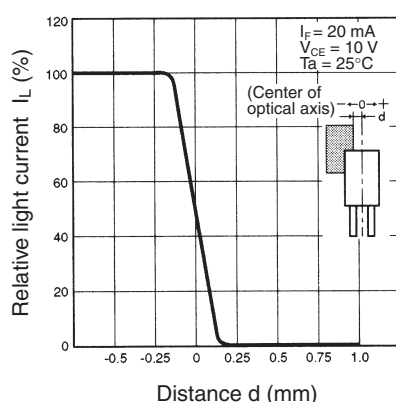
Dark Current vs. Ambient Temperature Characteristics (Typical)



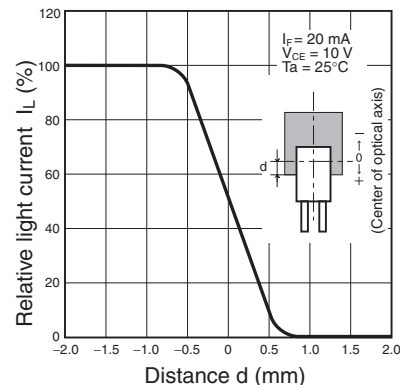
Response Time vs. Load Resistance Characteristics (Typical)



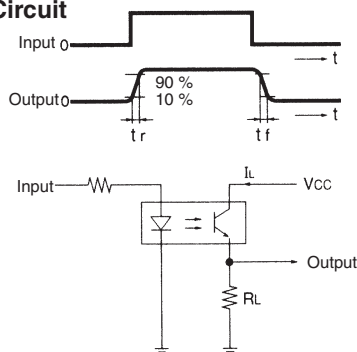
Sensing Position Characteristics (Typical)

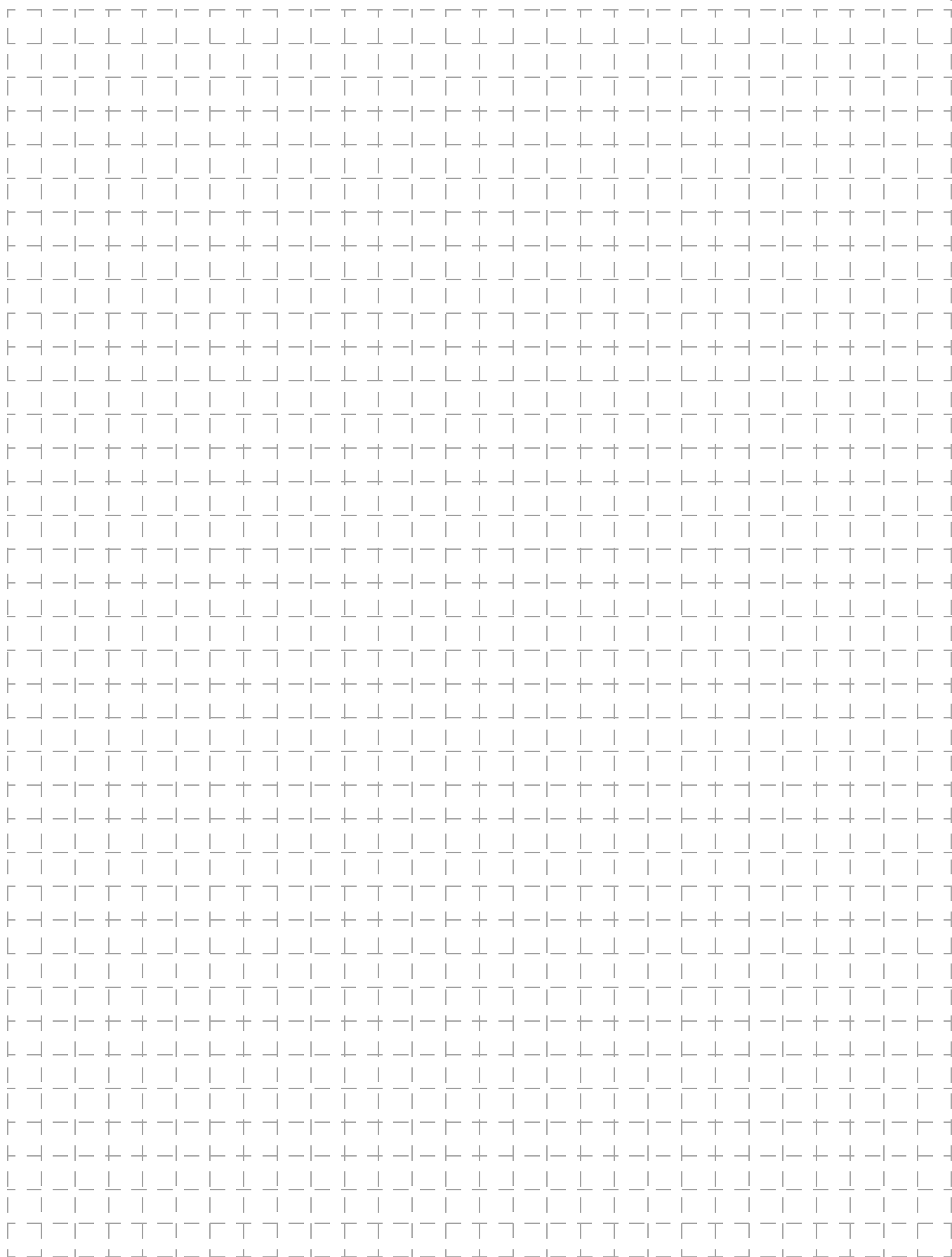


Sensing Position Characteristics (Typical)



Response Time Measurement Circuit





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COMPONENTS LLC**

55 E. Commerce Drive, Suite B
Schaumburg, IL 60173

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