

## Excellent Integrated System Limited

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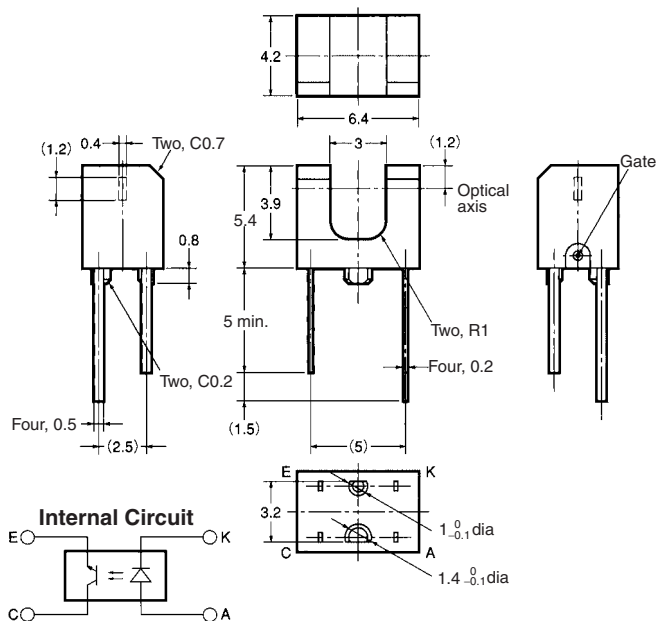
[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

# Photomicrosensor (Transmissive) EE-SX1106

**⚠ Be sure to read Precautions on page 25.**

## ■ Dimensions

**Note:** All units are in millimeters unless otherwise indicated.



## ■ Features

- Ultra-compact with a slot width of 3 mm.
- PCB mounting type.
- High resolution with a 0.4-mm-wide aperture.

## ■ Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rated value
Emitter	Forward current	$I_F$ 50 mA (see note 1)
	Pulse forward current	$I_{FP}$ ---
	Reverse voltage	$V_R$ 5 V
Detector	Collector–Emitter voltage	$V_{CEO}$ 30 V
	Emitter–Collector voltage	$V_{ECO}$ 4.5 V
	Collector current	$I_C$ 30 mA
	Collector dissipation	$P_C$ 80 mW (see note 1)
Ambient temperature	Operating	$T_{opr}$ -25°C to 85°C
	Storage	$T_{stg}$ -30°C to 85°C
Soldering temperature		$T_{sol}$ 260°C (see note 2)

- Note:** 1. Refer to the temperature rating chart if the ambient temperature exceeds 25°C.  
 2. Complete soldering within 3 seconds.

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

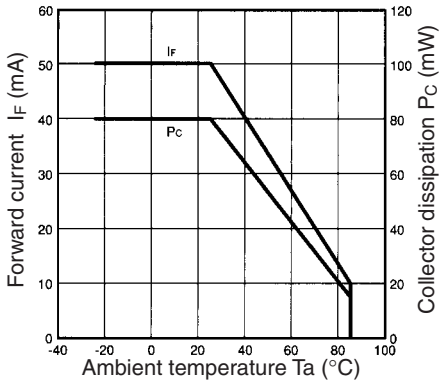
Unless otherwise specified, the tolerances are  $\pm 0.2$  mm.

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

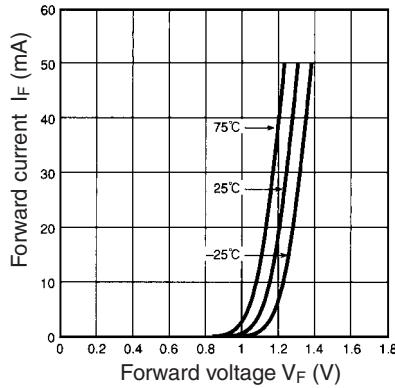
Item	Symbol	Value	Condition
Emitter	Forward voltage	$V_F$ 1.3 V typ., 1.6 V max.	$I_F = 50$ mA
	Reverse current	$I_R$ 10 $\mu$ A max.	$V_R = 5$ V
	Peak emission wavelength	$\lambda_p$ 950 nm typ.	$I_F = 50$ mA
Detector	Light current	$I_L$ 0.2 mA min.	$I_F = 20$ mA, $V_{CE} = 5$ V
	Dark current	$I_D$ 500 nA max.	$V_{CE} = 10$ V, 0 lx
	Leakage current	$I_{LEAK}$ ---	---
	Collector–Emitter saturated voltage	$V_{CE(sat)}$ 0.4 V max.	$I_F = 20$ mA, $I_L = 0.1$ mA
	Peak spectral sensitivity wavelength	$\lambda_p$ 800 nm typ.	$V_{CE} = 5$ V
Rising time	$t_r$ 10 $\mu$ s typ.	$V_{CC} = 5$ V, $R_L = 100$ $\Omega$ , $I_F = 20$ mA	
Falling time	$t_f$ 10 $\mu$ s typ.	$V_{CC} = 5$ V, $R_L = 100$ $\Omega$ , $I_F = 20$ mA	

**Engineering Data**

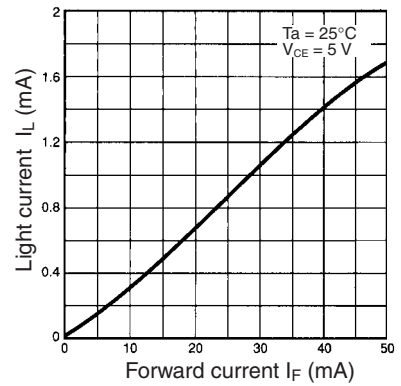
**Forward Current vs. Collector Dissipation Temperature Rating**



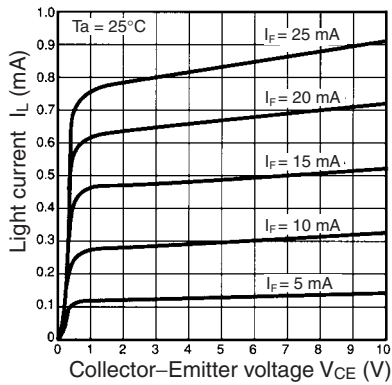
**Forward Current vs. Forward Voltage Characteristics (Typical)**



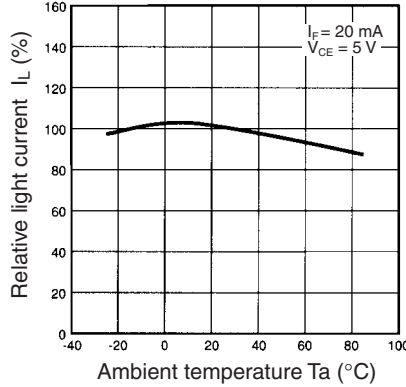
**Light Current vs. Forward Current Characteristics (Typical)**



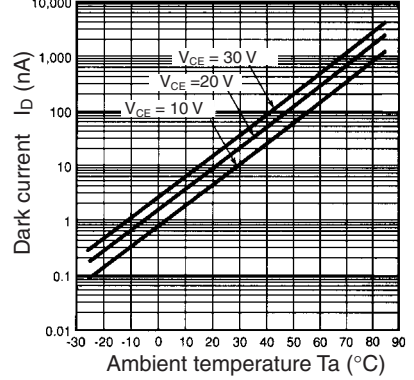
**Light Current vs. Collector-Emitter Voltage Characteristics (Typical)**



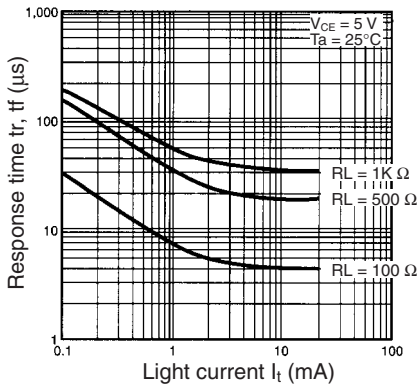
**Relative Light Current vs. Ambient Temperature Characteristics (Typical)**



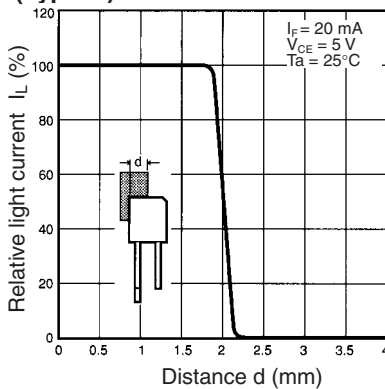
**Dark Current vs. Ambient Temperature Characteristics (Typical)**



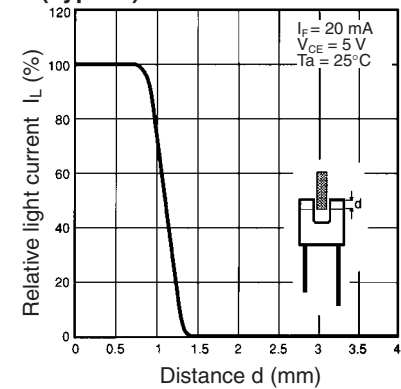
**Response Time vs. Light Current Characteristics (Typical)**



**Sensing Position Characteristics (Typical)**



**Sensing Position Characteristics (Typical)**



**Response Time Measurement Circuit**

