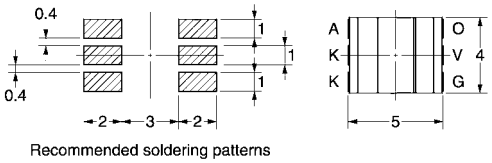
Photomicrosensor (Transmissive)
EE-SX4134

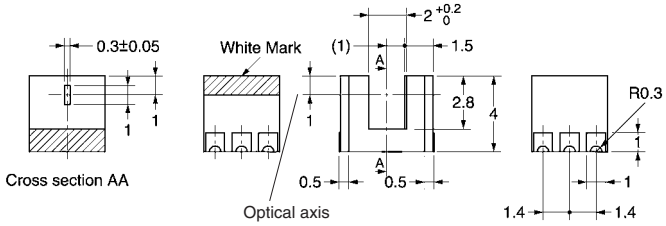
⚠ **Be sure to read *Precautions* on page 25.**

■ Dimensions

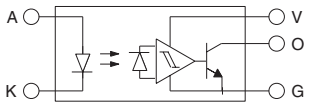
Note: All units are in millimeters unless otherwise indicated.



Recommended soldering patterns



Internal Circuit



Unless otherwise specified, the tolerances are ±0.15 mm.

Terminal No.	Name
A	Anode
K	Cathode
V	Supply voltage (Vcc)
O	Output (OUT)
G	Ground (GND)

■ Features

- Ultra-compact model.
- Photo IC output model.
- Operates at a V_{CC} of 2.2 to 7 V.
- PCB surface mounting type.

■ Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Rated value
Emitter	**Forward current**	I_F	25 mA (see note 1)
	Reverse voltage	V_R	5 V
Detector	**Supply voltage**	V_{CC}	9 V
	Output voltage	V_{OUT}	17 V
	Output current	I_{OUT}	8 mA
	Permissible output dissipation	P_{OUT}	80 mW (see note 1)
Ambient temperature	**Operating**	Topr	–25°C to 85°C
	Storage	Tstg	–40°C to 90°C
	Reflow soldering	Tsol	255°C (see note 2)
	Manual soldering	Tsol	350°C (see note 2)

Note: 1. Refer to the temperature rating chart if the ambient temperature exceeds 25°C.

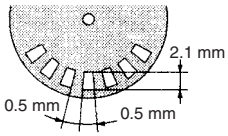
2. Complete soldering within 10 seconds for reflow soldering and within 3 seconds for manual soldering.

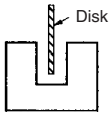
■ Electrical and Optical Characteristics (Ta = 25°C)

Item		Symbol	Value	Condition
Emitter	**Forward voltage**	V_F	1.2 V typ., 1.4 V max.	I_F = 20 mA
	Reverse current	I_R	0.01 μA typ., 10 μA max.	V_R = 5 V
	Peak emission wavelength	λ_P	940 nm typ.	I_F = 20 mA
Detector	**Power supply voltage**	V_{CC}	2.2 V min., 7 V max.	---
	Low-level output voltage	V_{OL}	0.12 V typ., 0.4 V max.	Vcc = 2.2 to 7 V, I_{OL} = 8 mA, I_F = 7 mA
	High-level output current	I_{OH}	10 μA max.	Vcc = 2.2 to 7 V, I_F = 0 mA, V_{OUT} = 17 V
	Current consumption	I_{CC}	2.8 mA typ., 4 mA max.	Vcc = 7 V
	Peak spectral sensitivity wavelength	λ_P	870 mm typ.	Vcc = 2.2 to 7 V
LED current when output is ON		I_{FT}	2.0 mA typ., 3.5 mA max.	V_{CC} = 2.2 to 7 V
Hysteresis		ΔH	21% typ.	V_{CC} = 2.2 to 7 V (see note 1)
Response frequency		f	3 kHz min.	V_{CC} = 2.2 to 7 V, I_F = 5 mA, I_{OL} = 8 mA (see note 2)
Response delay time		t_{PHL}	7 μs typ.	V_{CC} = 2.2 to 7 V, I_F = 5 mA, I_{OL} = 8 mA (see note 3)
Response delay time		t_{PLH}	18 μs typ.	V_{CC} = 2.2 to 7 V, I_F = 5 mA, I_{OL} = 8 mA (see note 3)

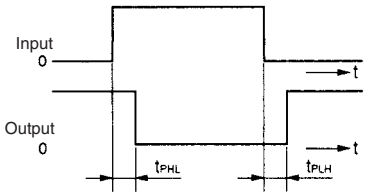
Note: 1. Hysteresis denotes the difference in forward LED current value, expressed in percentage, calculated from the respective forward LED currents when the photo IC in turned from ON to OFF and when the photo IC in turned from OFF to ON.

2. The value of the response frequency is measured by rotating the disk as shown below.



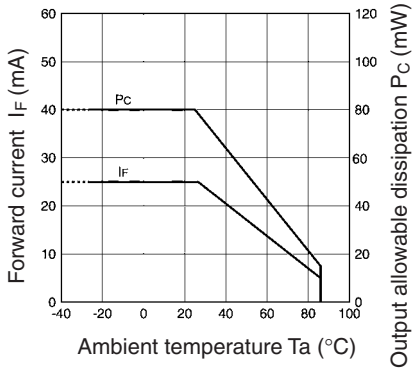


3. The following illustrations show the definition of response delay time.

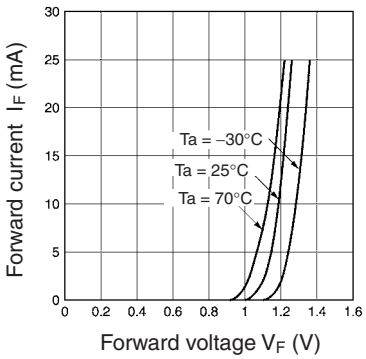


■ Engineering Data

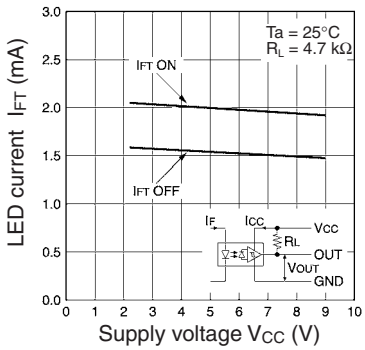
Forward Current vs. Collector Dissipation Temperature Rating



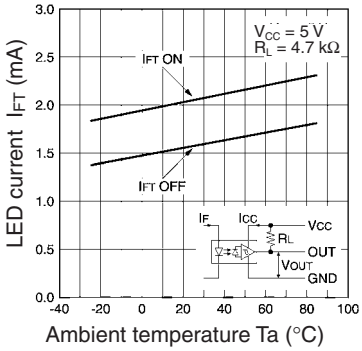
Forward Current vs. Forward Voltage Characteristics (Typical)



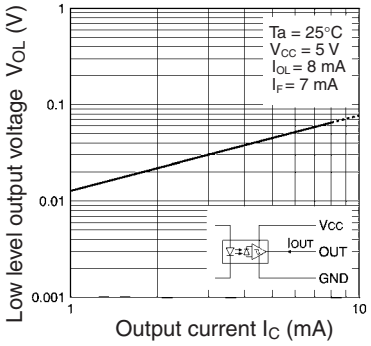
LED Current vs. Supply Voltage (Typical)



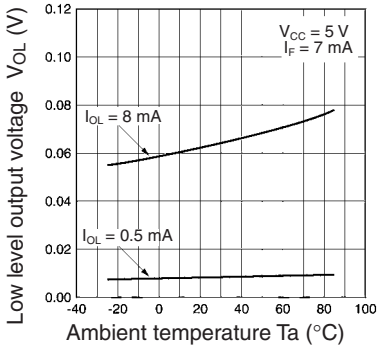
LED Current vs. Ambient Temperature Characteristics (Typical)



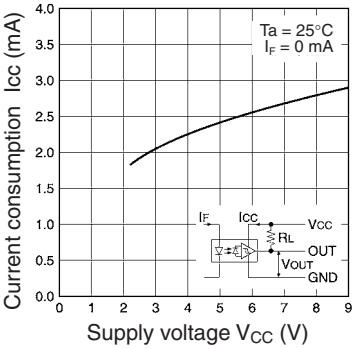
Low-level Output Voltage vs. Output Current (Typical)



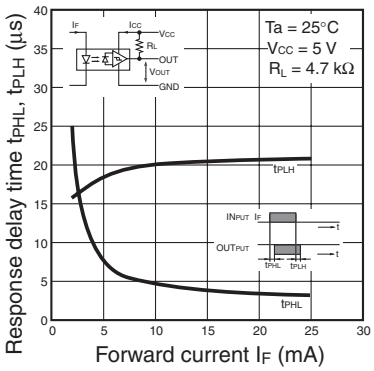
Low-level Output Voltage vs. Ambient Temperature Characteristics (Typical)



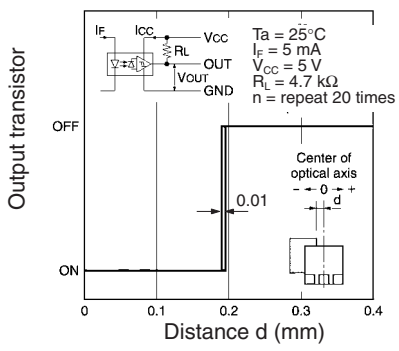
Current Consumption vs. Supply Voltage (Typical)



Response Delay Time vs. Forward Current (Typical)



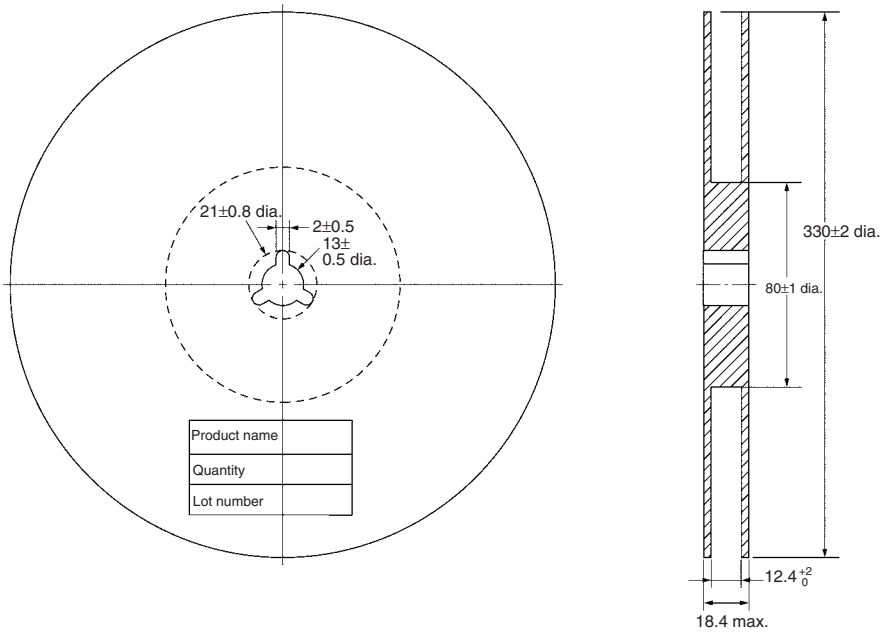
Repeat Sensing Position Characteristics (Typical)



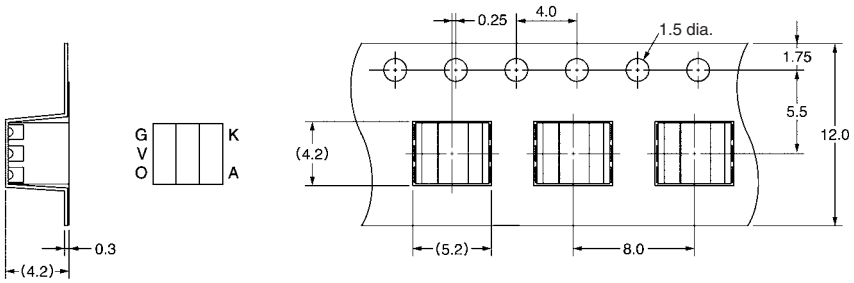
Unit: mm (inch)

■ Tape and Reel

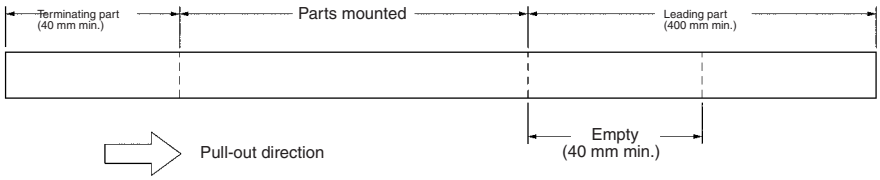
Reel



Tape



Tape configuration



Tape quantity

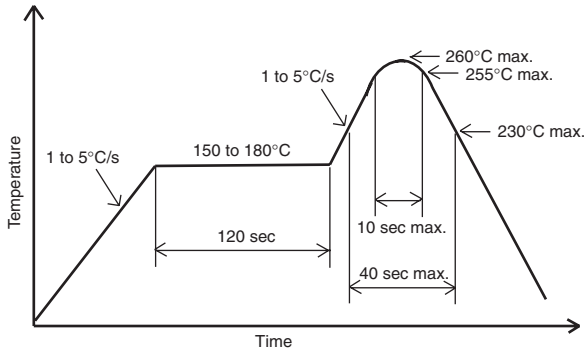
2,000 pcs./reel

Precautions

■ Soldering Information

Reflow soldering

- The following soldering paste is recommended:
  Melting temperature: 216 to 220°C
  Composition: Sn 3.5 Ag 0.75 Cu
- The recommended thickness of the metal mask for screen printing is between 0.2 and 0.25 mm.
- Set the reflow oven so that the temperature profile shown in the following chart is obtained for the upper surface of the product being soldered.



Manual soldering

- Use"Sn 60" (60% tin and 40% lead) or solder with silver content.
- Use a soldering iron of less than 25 W, and keep the temperature of the iron tip at 300°C or below.
- Solder each point for a maximum of three seconds.
- After soldering, allow the product to return to room temperature before handling it.

Storage

To protect the product from the effects of humidity until the package is opened, dry-box storage is recommended. If this is not possible, store the product under the following conditions:

Temperature: 10 to 30°C
Humidity: 60% max.

The product is packed in a humidity-proof envelope. Reflow soldering must be done within 48 hours after opening the envelope, during which time the product must be stored under 30°C at 80% maximum humidity.

If it is necessary to store the product after opening the envelope, use dry-box storage or reseal the envelope.

Baking

If a product has remained packed in a humidity-proof envelope for six months or more, or if more than 48 hours have lapsed since the envelope was opened, bake the product under the following conditions before use:

Reel: 60°C for 24 hours or more
Bulk: 80°C for 4 hours or more

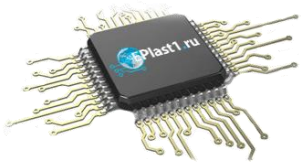
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- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits,General Dynamics и др.);

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- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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