

EE-SX1330

Ultra-Compact Slot / SMD Type (Slot width: 3 mm)

- PCB surface mounting type.
- High resolution with a 0.3-mm-wide aperture.



Be sure to read *Safety Precautions* on page 3.

Ordering Information

Photomicrosensor

Appearance	Sensing method	Connecting method	Sensing distance	Aperture size (H × W) (mm)	Output type	Model
	Transmissive (slot type)	SMT	3 mm (slot width)	Emitter 1.4 × 1.4 Detector 1 × 0.3	Phototransistor	EE-SX1330

Ratings, Characteristics and Exterior Specifications

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rated value	Unit
Emitter			
Forward current	I_F	25 *1	mA
Pulse forward current	I_{FP}	100 *2	mA
Reverse voltage	V_R	5	V
Detector			
Collector-Emitter voltage	V_{CEO}	12	V
Emitter-Collector voltage	V_{ECO}	5	V
Collector current	I_C	20	mA
Collector dissipation	P_C	75 *1	mW
Operating temperature	T_{opr}	-30 to +85 *1	°C
Storage temperature	T_{stg}	-40 to +90 *1	°C
Reflow soldering temperature	T_{sol}	255 *3	°C

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

*2. Duty ratio: 1%, Pulse width: 0.1 ms

*3. Complete soldering within 10 seconds for reflow soldering.

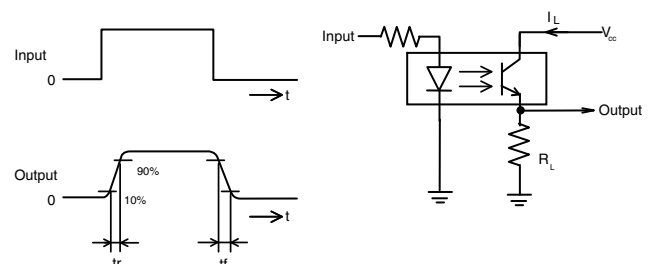
Exterior Specifications

Connecting method	Weight (g)	Material
		Case
SMT	0.2	PPS

Electrical and Optical Characteristics (Ta = 25°C)

Item	Symbol	Value			Unit	Condition
		MIN.	TYP.	MAX.		
Emitter						
Forward voltage	V_F	---	1.1	1.3	V	$I_F = 5 \text{ mA}$
Reverse current	I_R	---	---	10	μA	$V_R = 5 \text{ V}$
Peak emission wavelength	λ_P	---	940	---	nm	$I_F = 20 \text{ mA}$
Detector						
Light current	I_L	100	---	1,000	μA	$I_F = 5 \text{ mA}$, $V_{CE} = 5 \text{ V}$
Dark current	I_D	---	10	100	nA	$V_{CE} = 10 \text{ V}$, $I_L = 0$
Collector-Emitter saturated voltage	$V_{CE}(\text{sat})$	---	0.1	0.4	V	$I_F = 20 \text{ mA}$, $I_L = 100 \mu\text{A}$
Peak spectral sensitivity wavelength	λ_P	---	900	---	nm	$V_{CE} = 5 \text{ V}$
Rising time	t_r	---	19	---	μs	$V_{CC} = 5 \text{ V}$, $R_L = 100 \Omega$, $I_L = 500 \mu\text{A}$
Falling time	t_f	---	26	---	μs	$V_{CC} = 5 \text{ V}$, $R_L = 100 \Omega$, $I_L = 500 \mu\text{A}$

Note: Refer to the following timing diagram for t_r and t_f .



Engineering Data (Reference value)

Fig 1. Forward Current vs. Collector Dissipation Temperature Rating

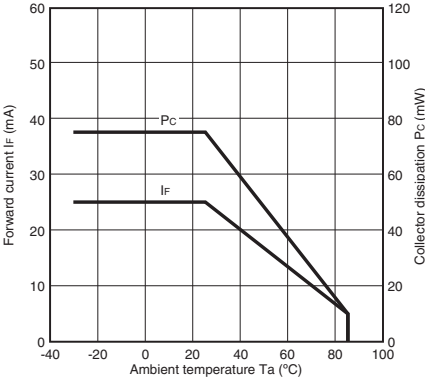


Fig 2. Forward Current vs. Forward Voltage Characteristics (Typical)

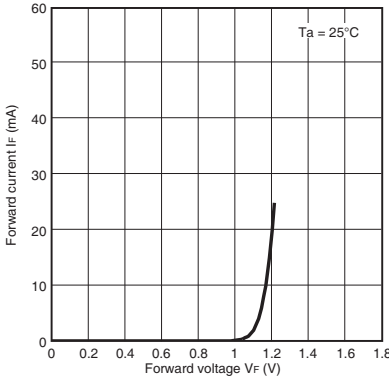


Fig 3. Light Current vs. Forward Current Characteristics (Typical)

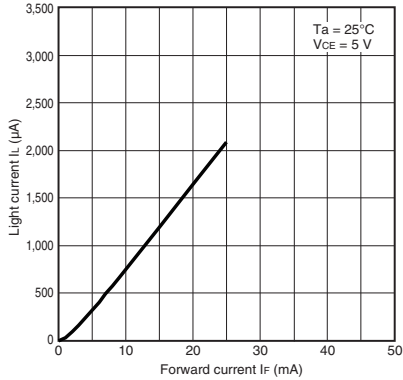


Fig 4. Light Current vs. Collector-Emitter Voltage Characteristics (Typical)

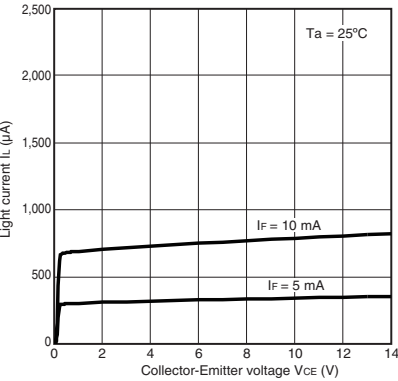


Fig 5. Relative Light Current vs. Ambient Temperature Characteristics (Typical)

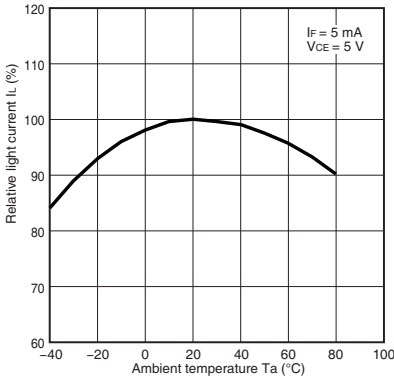


Fig 6. Dark Current vs. Ambient Temperature Characteristics (Typical)

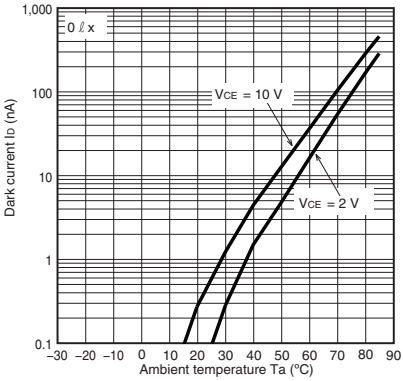


Fig 7. Response Time vs. Load Resistance Characteristics (Typical)

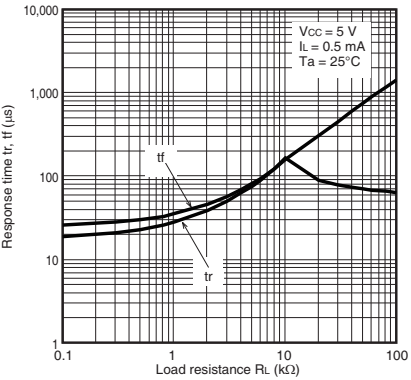


Fig 8. Sensing Position Characteristics (Typical)

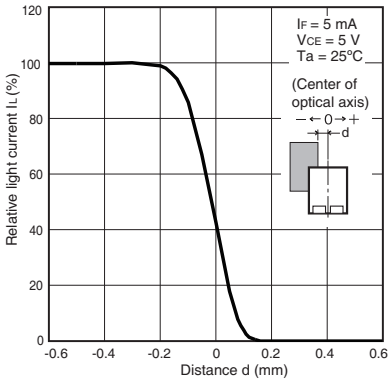


Fig 9. Sensing Position Characteristics (Typical)

