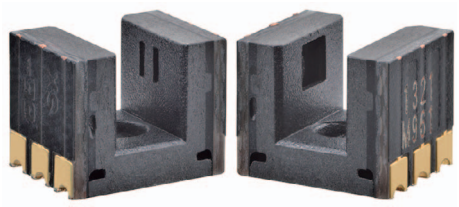
Photomicrosensor (Transmissive)
EE-SX1321

Ultra-Compact Slot / SMD Type (Slot width: 2 mm)

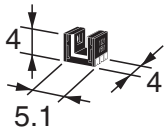


- PCB surface mounting type.
- High resolution with a 0.3-mm-wide aperture.
- Dual-channel output.

⚠ **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	**2 mm** (slot width)	Emitter 1.4 × 1.4 Detector 1 × 0.3 2ch	Phototransistor (Dual-channel output)	**EE-SX1321**

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.

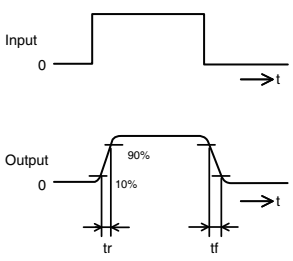
Exterior Specifications

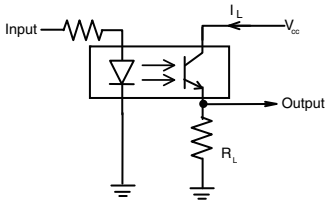
Connecting method	Weight (g)	Material
		Case
SMT	0.1	PPS

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 mA
	Reverse current	I_R	---	---	10	μA	V_R = 5 V
	Peak emission wavelength	λ_P	---	940	---	nm	I_F = 20 mA
Detector							
	Light current	I_{L1}	150	---	1500	μA	I_F = 5 mA, V_{CE} = 5 V
		I_{L2}	150	---	1500	μA	
	Dark current	I_D	---	10	100	nA	V_{CE} = 10 V, 0 lx
	Collector-Emitter saturated voltage	V_{CE} (sat)	---	0.1	0.4	V	I_F = 20 mA, I_L = 50 μA
	Peak spectral sensitivity wavelength	λ_P	---	900	---	nm	V_{CE} = 5 V
Rising time		tr	---	19	---	μs	V_{CC} = 5 V, R_L = 100 Ω, I_L = 500 μA
Falling time		tf	---	26	---	μs	V_{CC} = 5 V, R_L = 100 Ω, I_L = 500 μA

Note: Refer to the following timing diagram for tr and tf.





Engineering Data (Reference value)

Fig 1. Forward Current vs. Collector Dissipation Temperature Rating

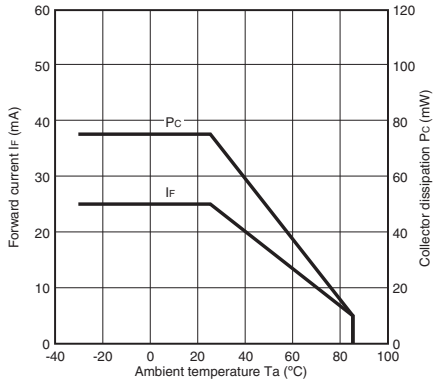


Fig 2. Forward Current vs. Forward Voltage Characteristics (Typical)

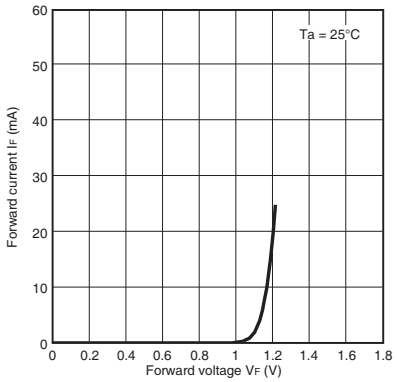


Fig 3. Light Current vs. Forward Current Characteristics (Typical)

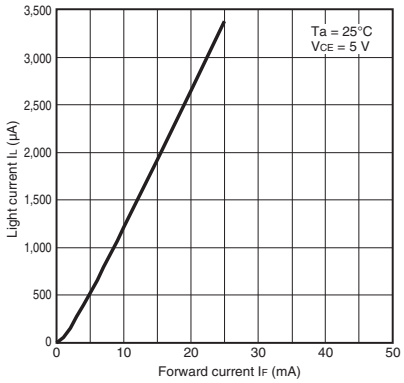


Fig 4. Light Current vs. Collector-Emitter Voltage Characteristics (Typical)

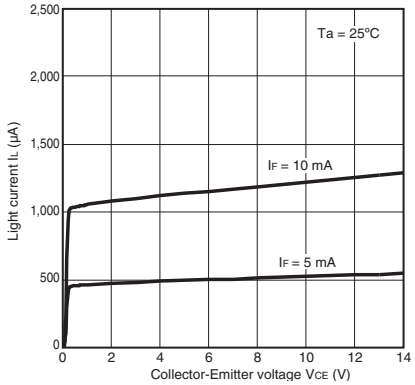


Fig 5. Relative Light Current vs. Ambient Temperature Characteristics (Typical)

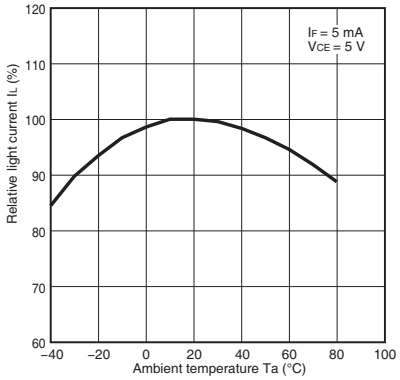


Fig 6. Dark Current vs. Ambient Temperature Characteristics (Typical)

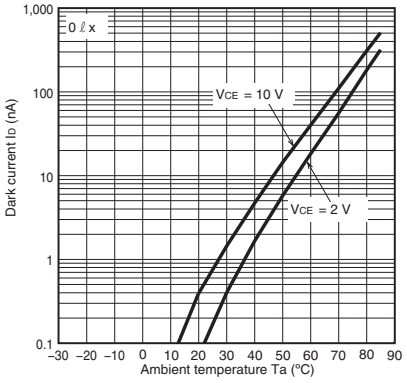


Fig 7. Response Time vs. Load Resistance Characteristics (Typical)

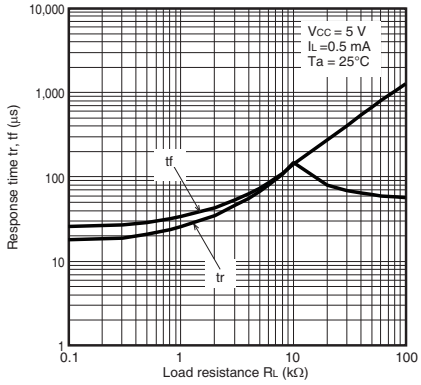


Fig 8. Sensing Position Characteristics (Typical)

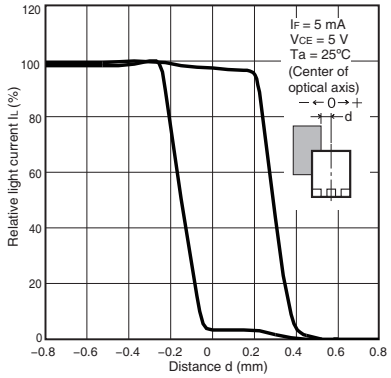


Fig 9. Sensing Position Characteristics (Typical)