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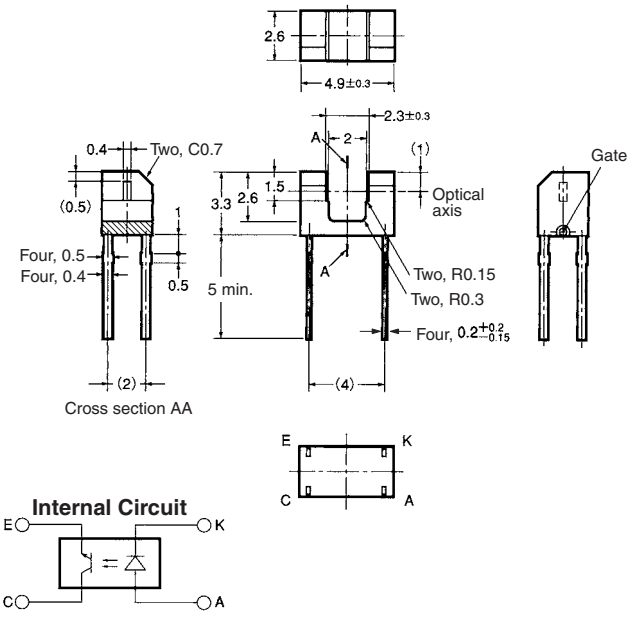
EE-SX1105

Photomicrosensor (Transmissive)
EE-SX1105

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

■ Dimensions

Note: All units are in millimeters unless otherwise indicated.



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

Unless otherwise specified, the tolerances are ±0.2 mm.

■ Features

- Ultra-compact with a sensor width of 4.9 mm and a slot width of 2 mm.
- Low-height of 3.3 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**	Topr	–25°C to 85°C
	Storage	Tstg	–30°C to 85°C
Soldering temperature		Tsol	260°C (see note 2)

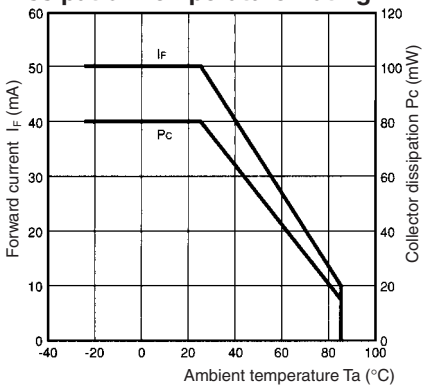
Note: **1.** Refer to the temperature rating chart if the ambient temperature exceeds 25°C.
2. Complete soldering within 3 seconds.

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

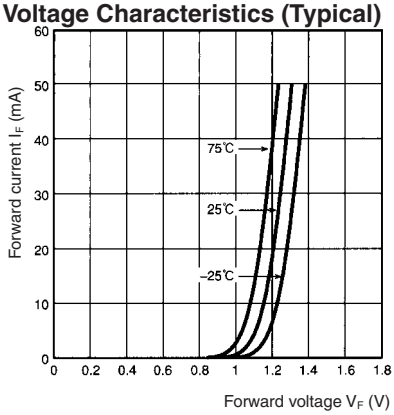
Item		Symbol	Value	Condition
Emitter	**Forward voltage**	V_F	1.3 V typ., 1.6 V max.	I_F = 50 mA
	Reverse current	I_R	10 μA max.	V_R = 5 V
	Peak emission wavelength	λ_P	950 nm typ.	I_F = 50 mA
Detector	**Light current**	I_L	0.2 mA min.	I_F = 20 mA, V_{CE} = 5 V
	Dark current	I_D	500 nA max.	V_{CE} = 10 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	λ_P	800 nm typ.	V_{CE} = 5 V
Rising time		tr	10 μs typ.	V_{CC} = 5 V, R_L = 100 Ω, I_F = 20 mA
Falling time		tf	10 μs typ.	V_{CC} = 5 V, R_L = 100 Ω, I_F = 20 mA

■ Engineering Data

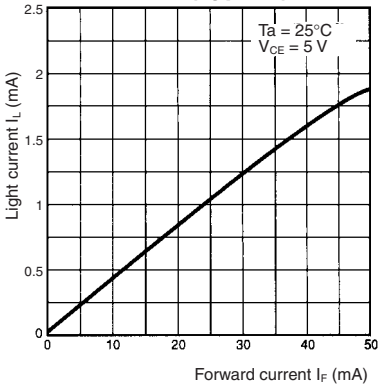
Forward Current vs. Collector Dissipation Temperature Rating



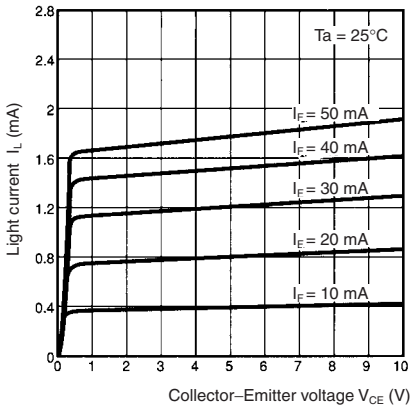
Forward Current vs. Forward Voltage Characteristics (Typical)



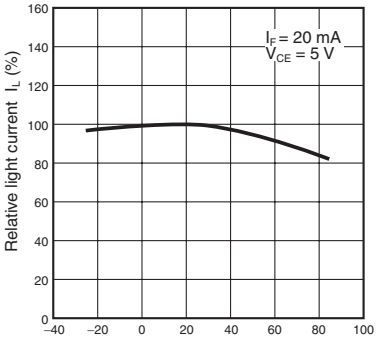
Light Current vs. Forward Current Characteristics (Typical)



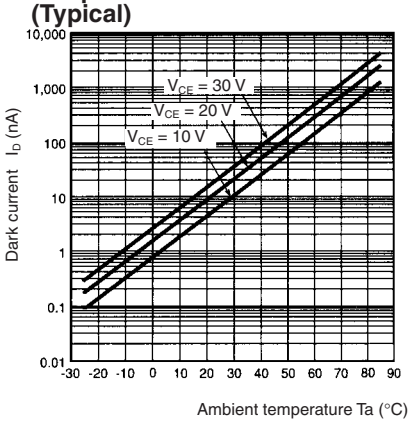
Light Current vs. Collector−Emitter Voltage Characteristics (Typical)



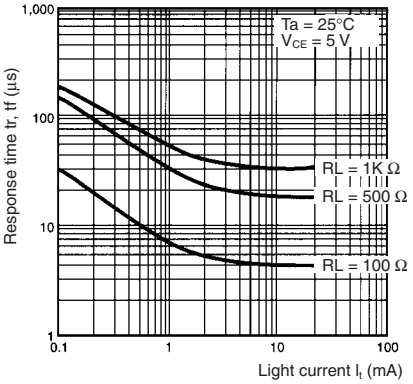
Relative Light Current vs. Ambient Temperature Characteristics (Typical)



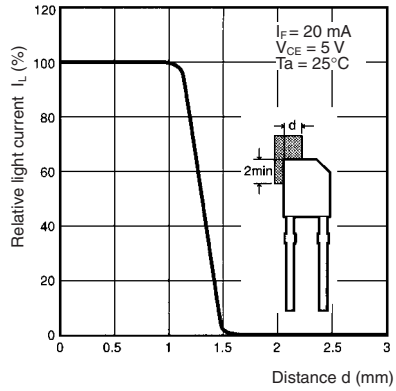
Dark Current vs. Ambient Temperature Characteristics (Typical)



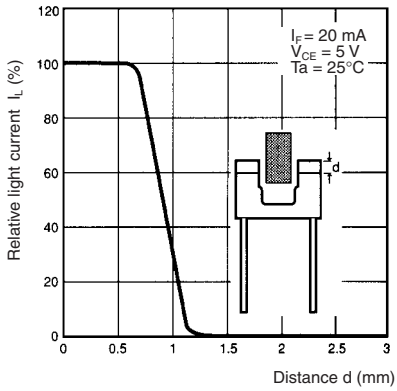
Response Time vs. Light Current Characteristics (Typical)



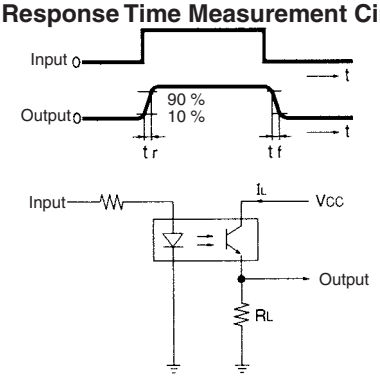
Sensing Position Characteristics (Typical)



Sensing Position Characteristics (Typical)



Response Time Measurement Circuit



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