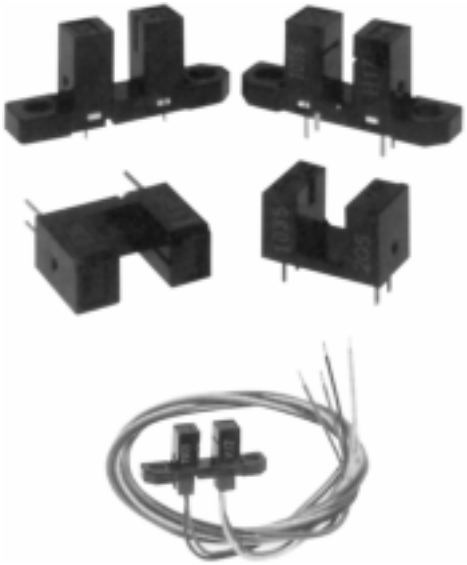
OMRON

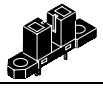
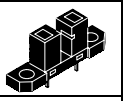
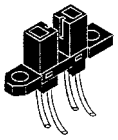
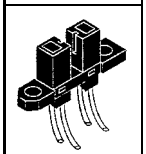
EE-SX1035/1081/1088(-W1)/1096(-W1)

Low-cost, PCB-mount with Phototransistor Output



- LED and phototransistor assure long life and high reliability
- Non-contact, noiseless sensing, ideal for office automation and computer peripheral equipment
- Models available with either horizontal (EE-SX1096) or vertical (EE-SX1081/1088) aperture
- EE-SX1088(-W1) and EE-SX1096(-W1) wire harness versions provide easy, reliable solder-free connection

Ordering Information

Appearance	Sensing method	Slot width	Slot depth	Sensing object	Output configuration	Weight	**Part number**
	Transmissive	5.2 mm	5.4 mm	Opaque, 1.0 x 1.0 mm min.	Phototransistor	Approx. 1.3 g	**EE-SX1035**
		5.0 mm	7.5 mm	Opaque, 0.5 x 2.1 mm min.		Approx. 0.5 g	**EE-SX1081**
		3.4 mm	7.5 mm	Opaque, 2.1 x 0.5 mm min.		Approx. 0.6 g	**EE-SX1088**
				Opaque, 0.5 x 2.1 mm min.		Approx. 0.6 g	**EE-SX1096**
				Opaque, 2.1 x 0.5 mm min.	Phototransistor with wire harness	Approx. 4.5 g	**EE-SX1088-W1**
				Opaque, 0.5 x 2.1 mm min.		Approx. 4.5 g	**EE-SX1096-W1**

Specifications

■ ABSOLUTE MAXIMUM RATINGS (T_A = 25°C (77°F))

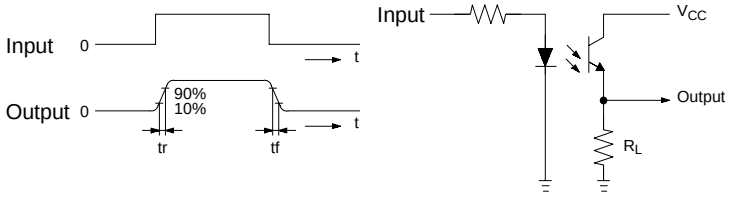
Item		Symbol	Rated value
Emitter	Forward current	I_F	50 mA*
	Reverse voltage	V_R	4 V
Detector	Collector-emitter voltage	V_{CEO}	30 V
	Collector current	I_C	20 mA
	Collector dissipation	P_C	100 mW*
Ambient temperature	Operating	Topr	-25°C to 85°C (-13°F to 185°F)
	Storage	Tstg	-30°C to 100°C (-22°F to 212°F)

*Refer to Engineering Data if the ambient temperature is not within the normal room temperature range.

■ CHARACTERISTICS (T_A = 25°C (77°F))

Item		Symbol	Value	Condition
Emitter	Forward voltage	V_F	1.2 V typ.; 1.5 V max.	I_F=30mA
	Reverse current	I_R	0.01 μA typ.; 10 μA max.	V_R=4 V
	Peak emission wavelength	λp(L)	940 nm	I_F=20 mA
Detector	Dark current	I_D	2 nA typ.; 200 nA max.	V_{CE}=10 V 0 *lx*
	Peak spectral sensitivity wavelength	λp(P)	850 nm typ.	V_{CE}=10 V
Combination	Light current (collector current)	I_L	0.5 to 14 mA	I_F=20 mA V_{CE}=10 V
	Collector-emitter saturated voltage	V_{CE} (sat)	0.1 V typ.; 0.4 V max.	I_F=20 mA I_L=0.1 mA
	Rising time*	tr	4 μs typ.	V_{CC}=5 V I_L=5 mA R_L=100 Ω
	Falling time*	tf	4 μs typ.	

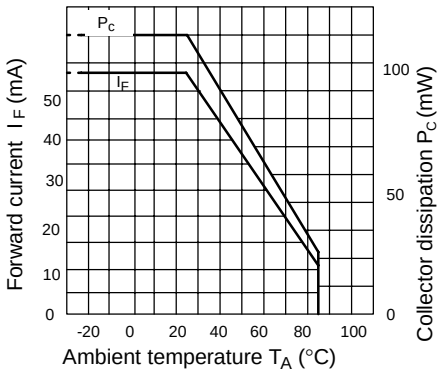
*The following illustrations show the rising time, tr, and the falling time, tf.



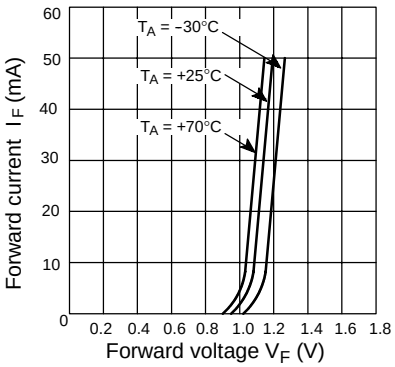
Engineering Data

Note: The operating conditions of the photomicrosensor must be within the absolute maximum rating ranges.

■ TEMPERATURE CHARACTERISTICS

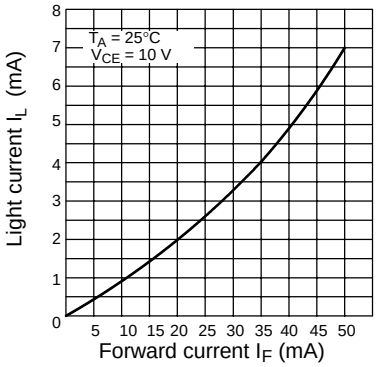


■ INPUT CHARACTERISTICS (TYPICAL)

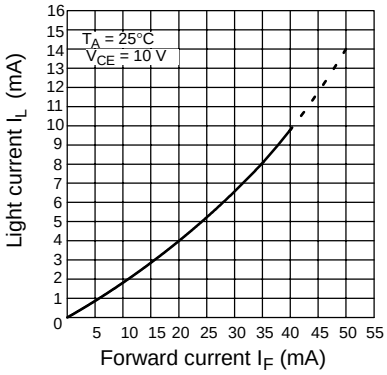


■ INPUT/OUTPUT CHARACTERISTICS (TYPICAL)

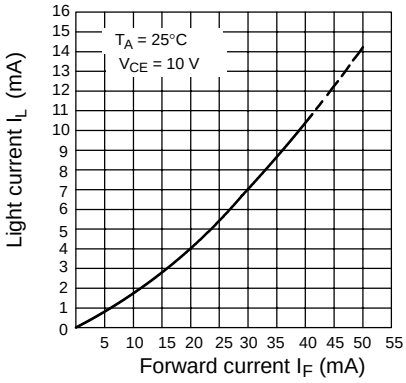
EE-SX1035



EE-SX1081

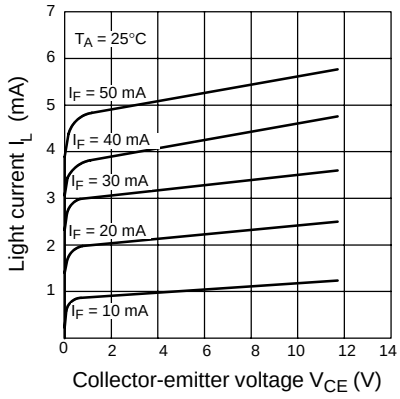


EE-SX1088/1096(-W1)

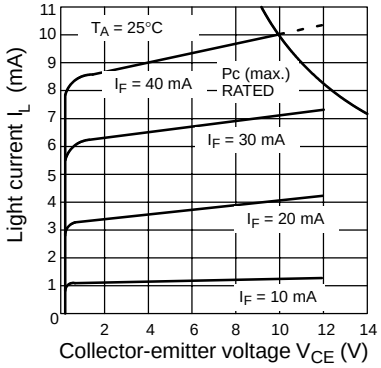


■ OUTPUT CHARACTERISTICS (TYPICAL)

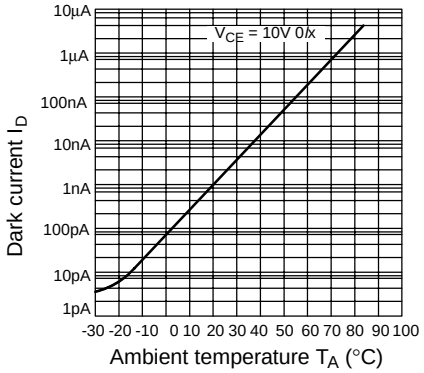
EE-SX1035



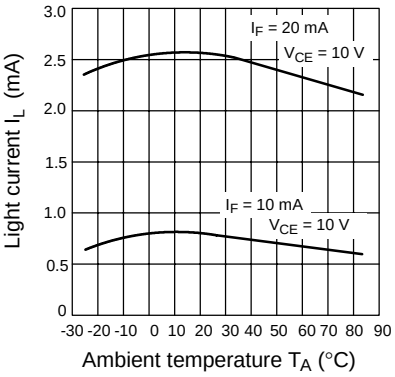
EE-SX1081/1088/1096(-W1)



DARK CURRENT TEMPERATURE DEPENDENCY (TYPICAL)

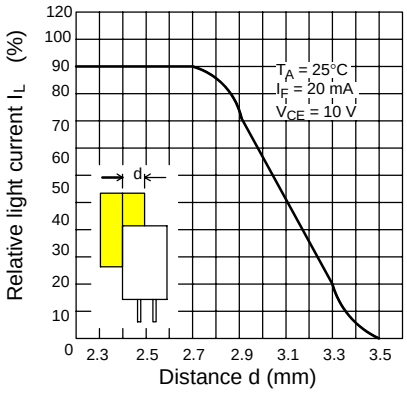


LIGHT CURRENT TEMPERATURE DEPENDENCY (TYPICAL)

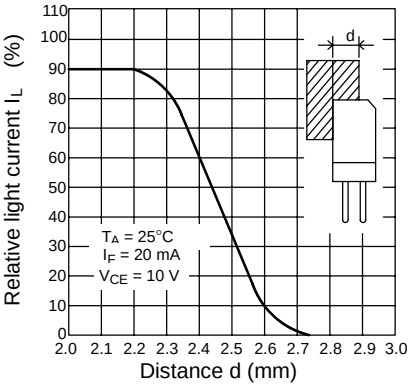


SENSING POSITION CHARACTERISTICS (TYPICAL)

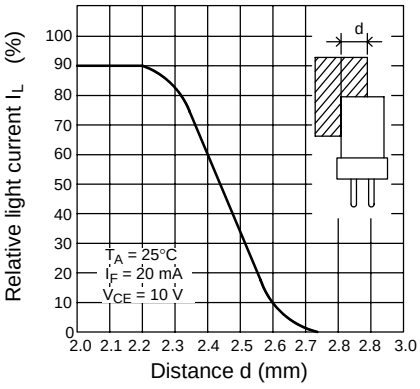
EE-SX1035



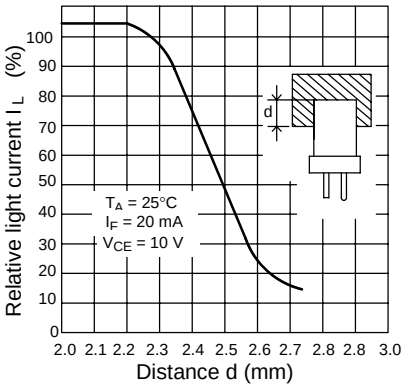
EE-SX1081



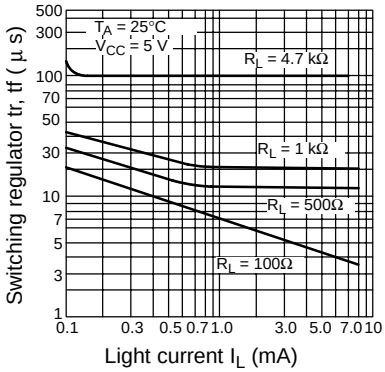
EE-SX1088(-W1)



EE-SX1096(-W1)



■ SWITCHING CHARACTERISTICS (TYPICAL)

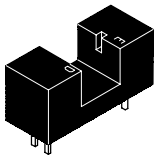


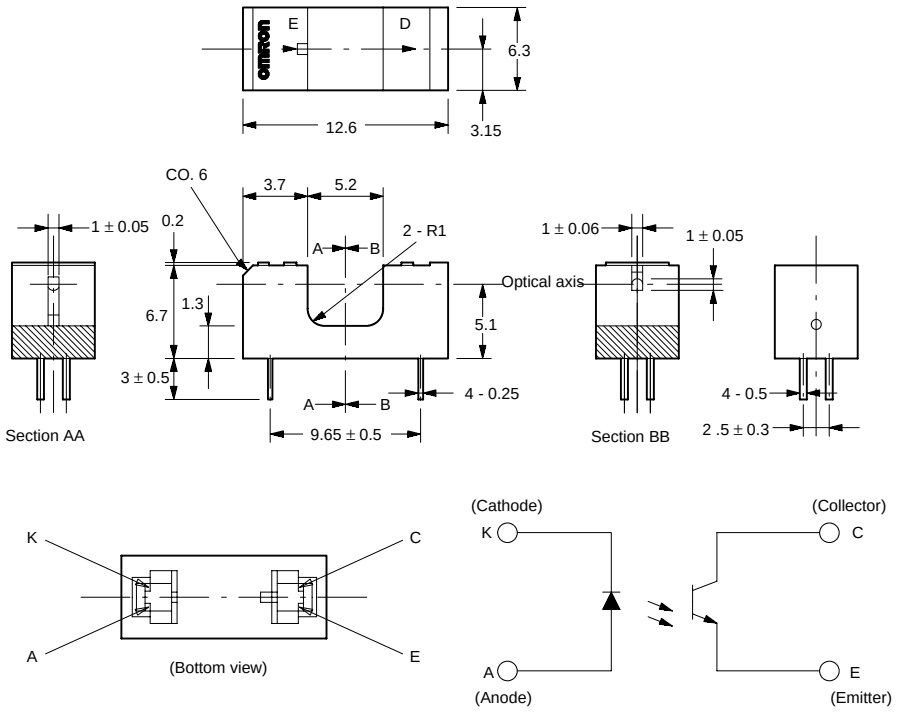
The tr and tf are almost the same in length.

Dimensions

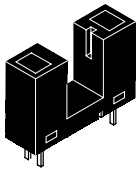
Unit: mm (inch)

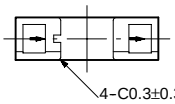
■ EE-SX1035

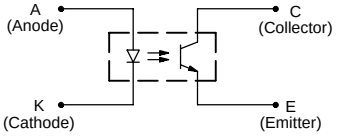


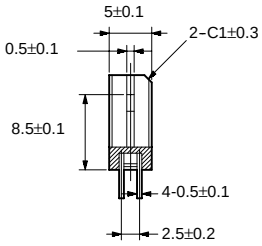


■ EE-SX1081

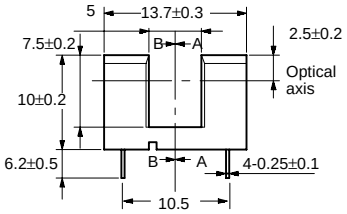


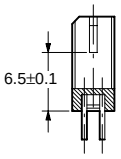






Section BB





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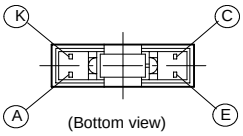
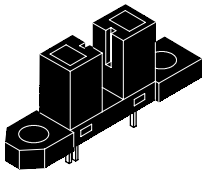
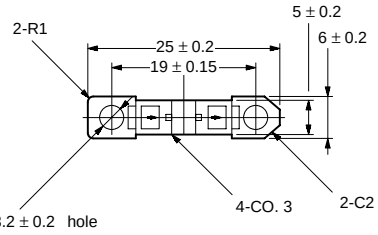
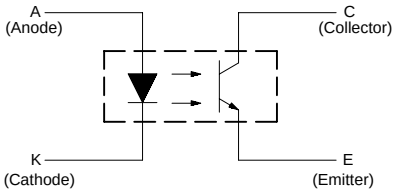
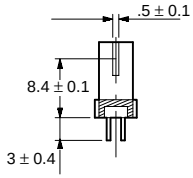


■ EE-SX1088









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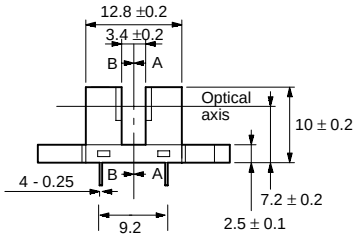

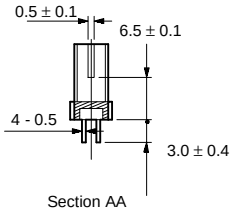

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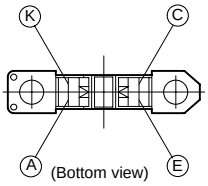
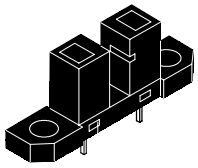
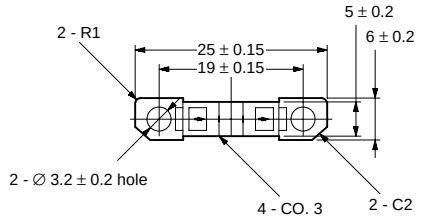
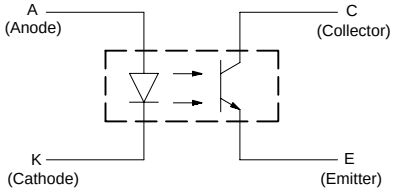
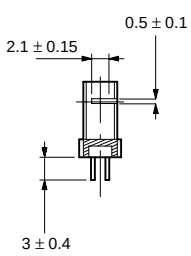


EE-SX1096









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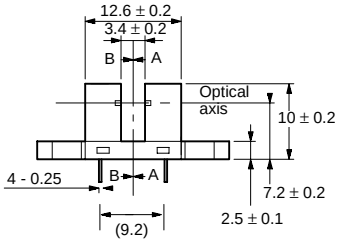

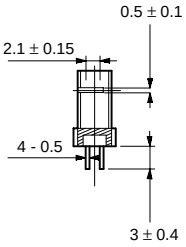

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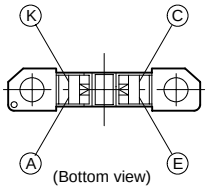
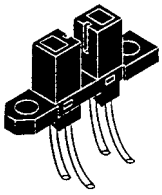
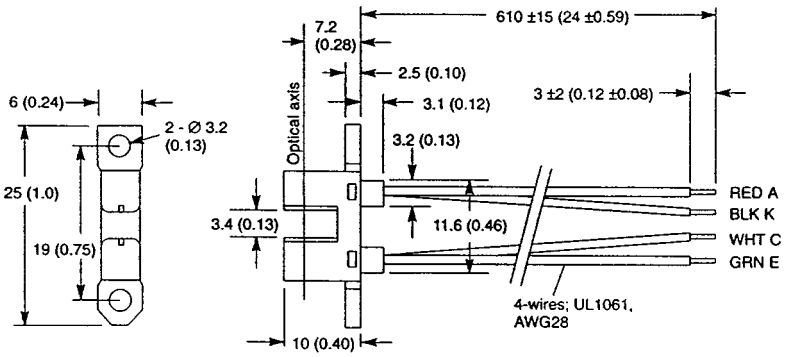
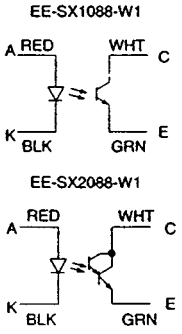


(Bottom view)

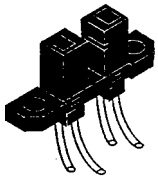
EE-SX1088-W1

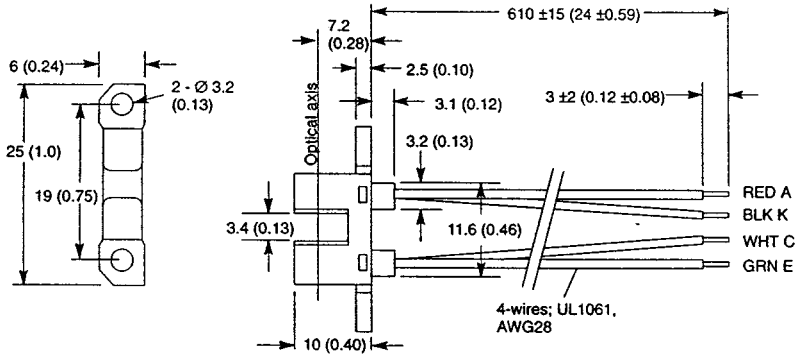


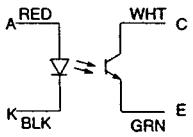




EE-SX1096-W1







Precautions

Refer to the Technical Information Section for general precautions.

NOTE: DIMENSIONS SHOWN ARE IN MILLIMETERS. To convert millimeters to inches divide by 25.4.

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