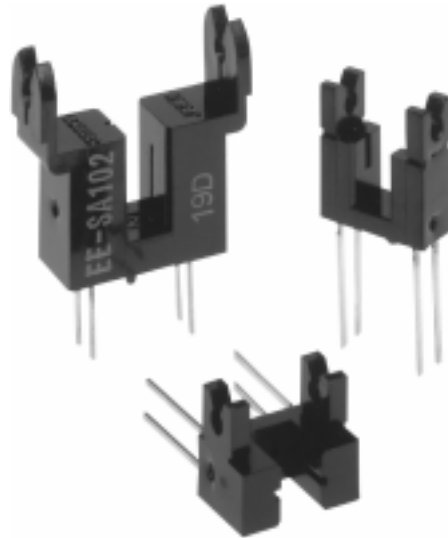


EE-SA102/103/104

Actuator-Adaptable Housing Ideal for Paper Path Sensing

- Phototransistor output
- Actuator can be attached in two directions
- Non-contact detection eliminates circuit noise
- Low-cost, PCB-mount ideal for office automation and computer peripheral equipment



Ordering Information

Appearance	Sensing method	Slot width	Slot depth (from pivot point)	Output configuration	Weight	Part number
	Transmissive, actuator*	3 mm	11 mm	Phototransistor	Approx. 0.7 g	EE-SA102
			4.5 mm		Approx. 0.3 g	EE-SA103
			6.5 mm		Approx. 0.3 g	EE-SA104

*Attach appropriate actuator for the application.

Specifications

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

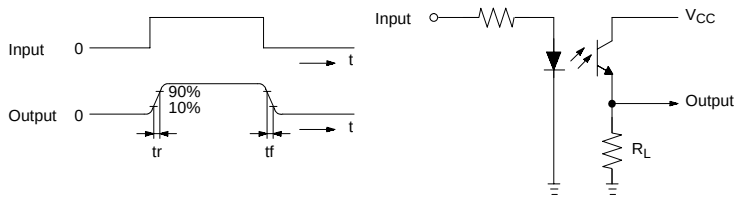
Item		Symbol	Rated value
Emitter	Forward current	I _F	50 mA*
	Reverse voltage	V _R	4 V
Detector	Collector-emitter voltage	V _{CEO}	30 V
	Collector current	I _C	20 mA
	Collector dissipation	P _C	100 mW*
Ambient temperature	Operating	T _{opr}	-25°C to 85°C (-13°F to 185°F)
	Storage	T _{stg}	-30°C to 100°C (-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 = 30 mA
	Reverse current	I _R	0.01 μA typ. 10 μA max.	V _R = 4 V
	Peak emission wavelength	λ _p (L)	940 nm typ.	I _F = 20 mA
Detector	Dark current	I _D	2 nA typ.; 200 nA max.	V _{CE} = 10 V 0/x
	Peak spectral sensitivity wavelength	λ _p (P)	850 nm typ.	V _{CE} = 10 V
Combination	Light current (collector current)	I _L	0.5 mA min. 14 mA max.	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*	t _r	4 μs typ.	V _{CC} = 5 V R _L = 100 Ω
	Falling time*	t _f	4 μs typ.	I _L = 5 mA

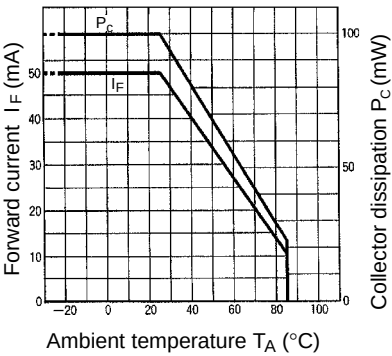
*The following illustrations show the rising time, t_r, and the falling time, t_f.



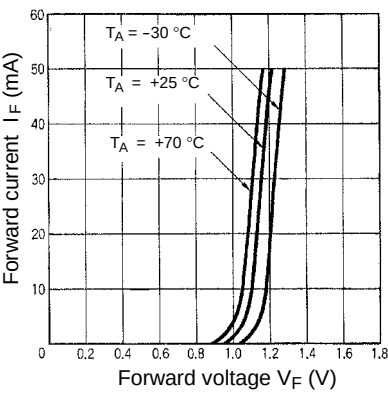
Engineering Data

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

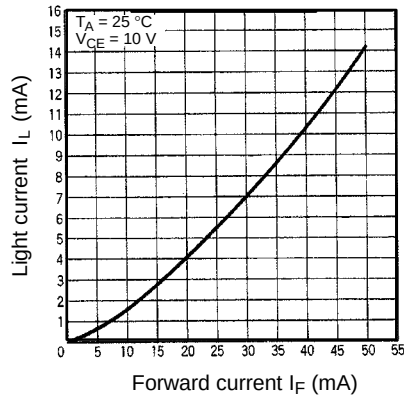
TEMPERATURE CHARACTERISTICS



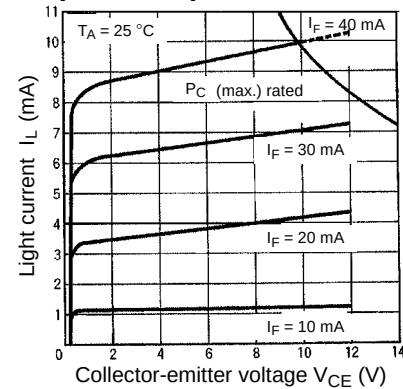
INPUT CHARACTERISTICS (TYPICAL)



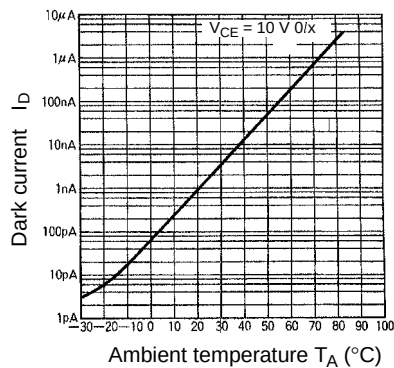
INPUT/OUTPUT CHARACTERISTICS (TYPICAL)



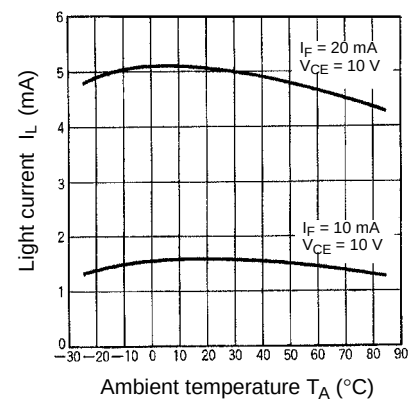
OUTPUT CHARACTERISTICS (TYPICAL)



DARK CURRENT TEMPERATURE DEPENDENCY (TYPICAL)

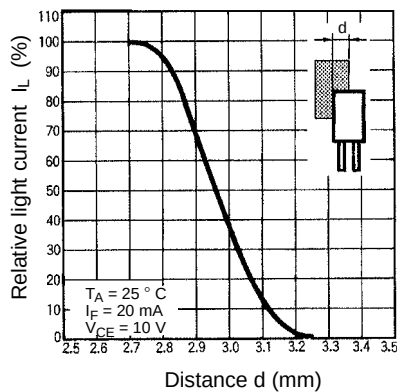


LIGHT CURRENT TEMPERATURE DEPENDENCY (TYPICAL)

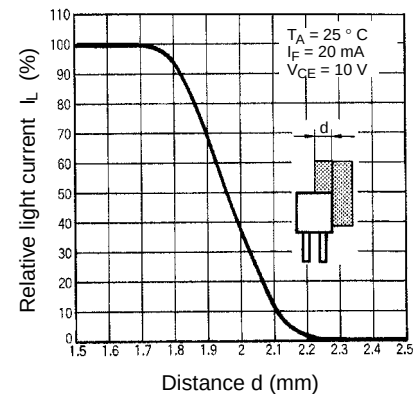


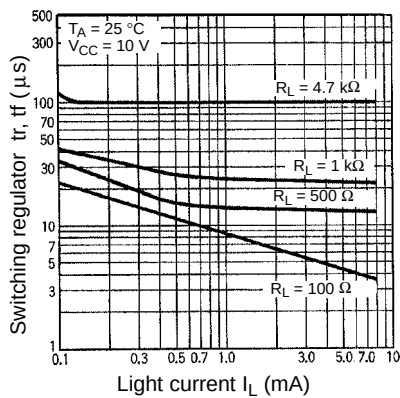
SENSING POSITION CHARACTERISTICS (TYPICAL)

EE-SA102



EE-SA103/SA104

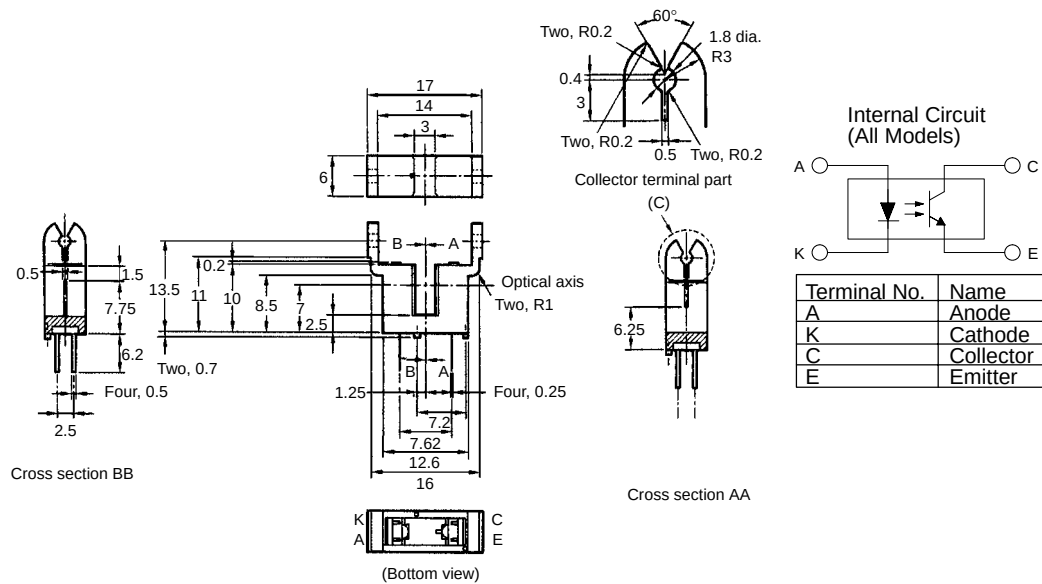
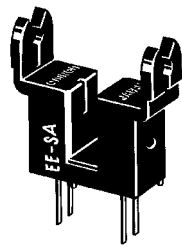




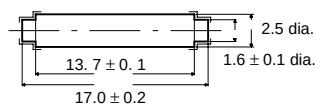
Dimensions

Unit: mm (inch)

■ **EE-SA102**

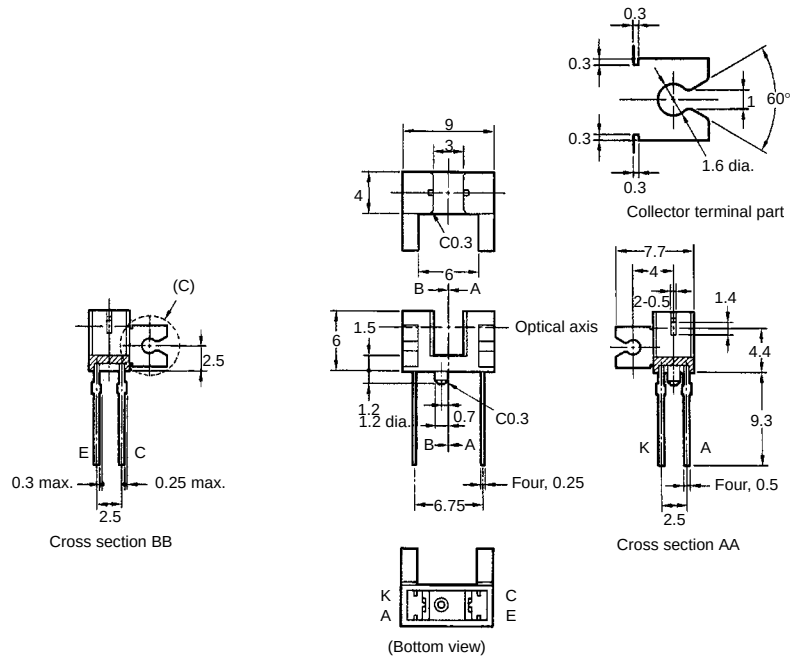
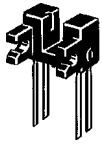


Recommended Actuator Design for EE-SA102

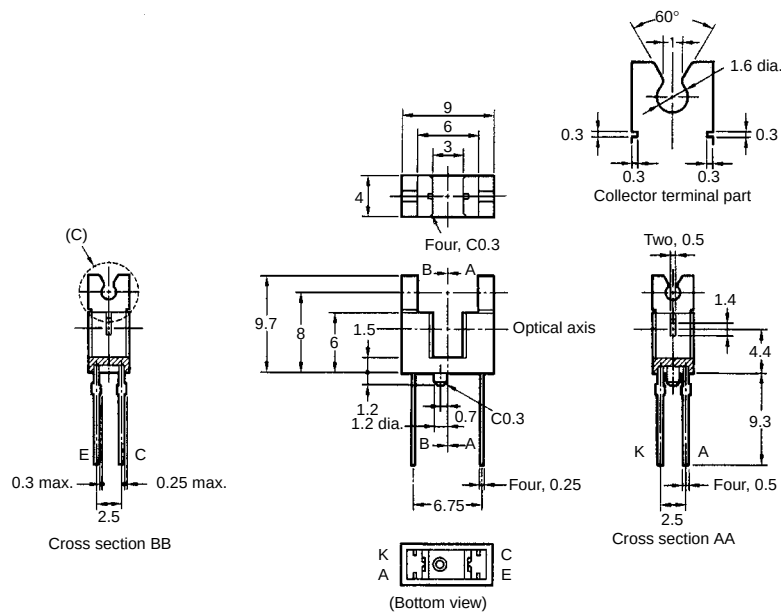
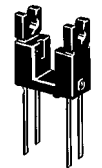


- Note: 1. No flash is located at the sections indicated by dotted lines.
2. Material must be opaque in infrared light range (900 to 950 nm).

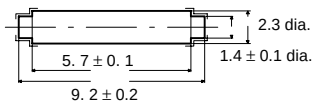
■ EE-SA103



■ EE-SA104



Recommended Actuator Design for EE-SA103, EE-SA104



- Note: 1. No flash is located at the sections indicated by dotted lines.
 2. Material must be opaque in infrared light range (900 to 950 nm).

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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