

EE-SY124/125

Ultra-Compact Reflective Sensor
(4 L x 3 W x 1.7 H mm)

- Phototransistor output ideal for paper detection
- Models available with through-hole and surface-mount terminals
- Miniature size is ideal for office automation and computer peripheral products



Ordering Information

Appearance	Sensing method	Sensing distance	Sensing object	Output configuration	Weight	Part number
PCB terminals 	Reflective	1 mm	Object with aluminum deposited surface	Phototransistor	Approx. 0.4 g	EE-SY124
Surface mount 						EE-SY125

Specifications

■ ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ (77°F))

Item		Symbol	Rated value
Input	Forward current	I_F	50 mA*
	Pulse forward current	I_{FP}	1 A**
	Reverse voltage	V_R	4 V
Output	Collector-emitter voltage	V_{CEO}	30 V
	Emitter-collector voltage	V_{ECO}	5 V
	Collector current	I_C	20 mA
	Collector dissipation	P_C	75 mW
Ambient temperature	Operating	T_{opr}	-25°C to 85°C (-13°F to 185°F)
	Storage	T_{stg}	-40°C to 100°C (-40°F to 212°F)

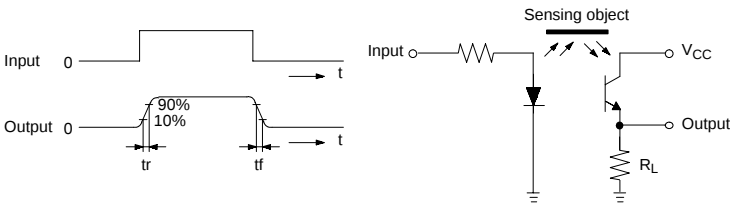
*Refer to Engineering Data if the ambient temperature is not within the normal room temperature range.

**This value was measured with a pulse width of 10 μs and a repeating frequency of 100 Hz.

CHARACTERISTICS (T_A = 25°C (77°F))

Item		Symbol	Value	Condition
Input	Forward voltage	V _F	1.2 V typical	I _F = 20 mA
	Reverse current	I _R	10 μA max.	V _R = 4 V
	Peak emission wavelength	λ _p (L)	950 nm typ.	I _F = 4 mA
Output	Dark current	I _D	200 nA max.	V _{CE} = 10 V, 0 lx
	Peak spectral sensitivity wavelength	λ _p (P)	850 nm typ.	V _{CE} = 10 V
Combination	Light current	I _L	50 to 300 μA	I _F = 4 mA, V _{CE} = 2 V, d=1 mm
	Leakage current	I _{LEAK}	200 nA	I _F = 4 mA, V _{CE} = 2 V, 0 lx
	Rising time*	t _r	35 μs typ.	V _{CC} = 2 V, R _L = 1 kΩ
	Falling time*	t _f	25 μs typ.	I _L = 0.1 mA

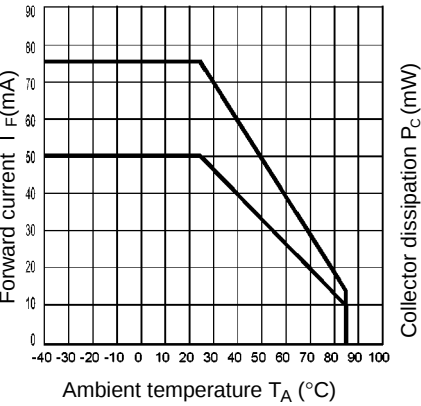
*The following illustrations show the rising time, t_r, and the falling time, t_f.



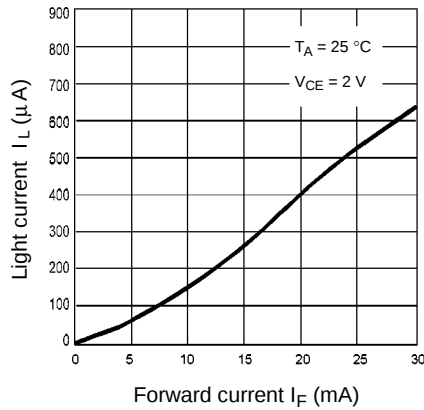
Engineering Data

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

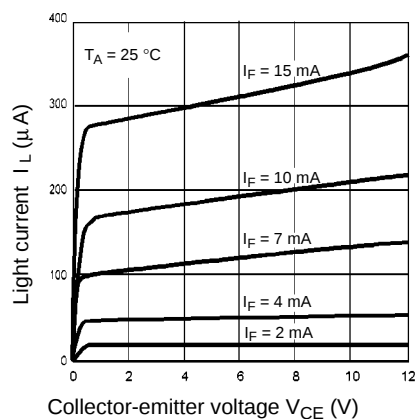
TEMPERATURE CHARACTERISTICS



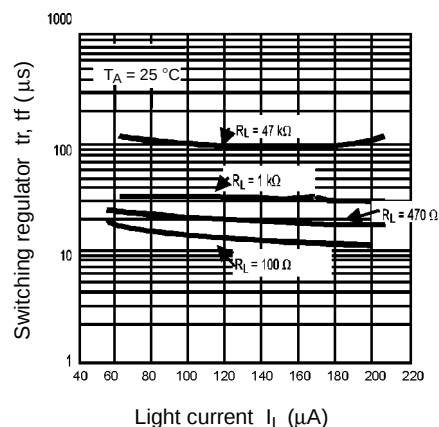
INPUT/OUTPUT CHARACTERISTICS



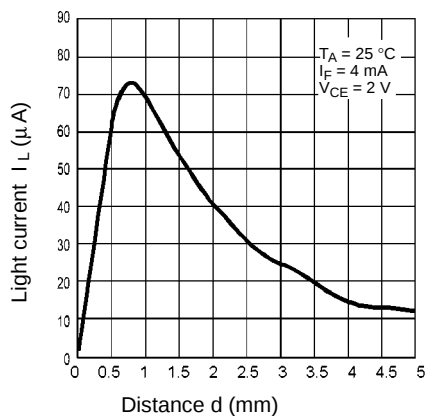
OUTPUT CHARACTERISTICS (TYPICAL)



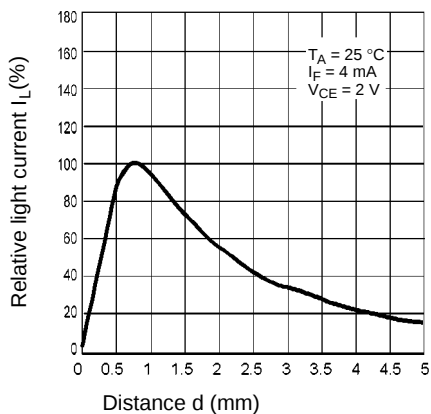
SWITCHING CHARACTERISTICS (TYPICAL) RISE TIME



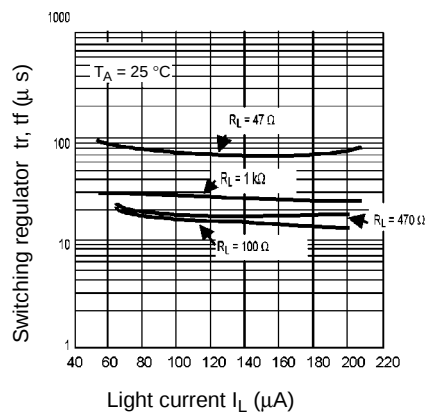
SENSING DISTANCE CHARACTERISTICS (TYPICAL 1)



SENSING DISTANCE CHARACTERISTICS (TYPICAL 2)

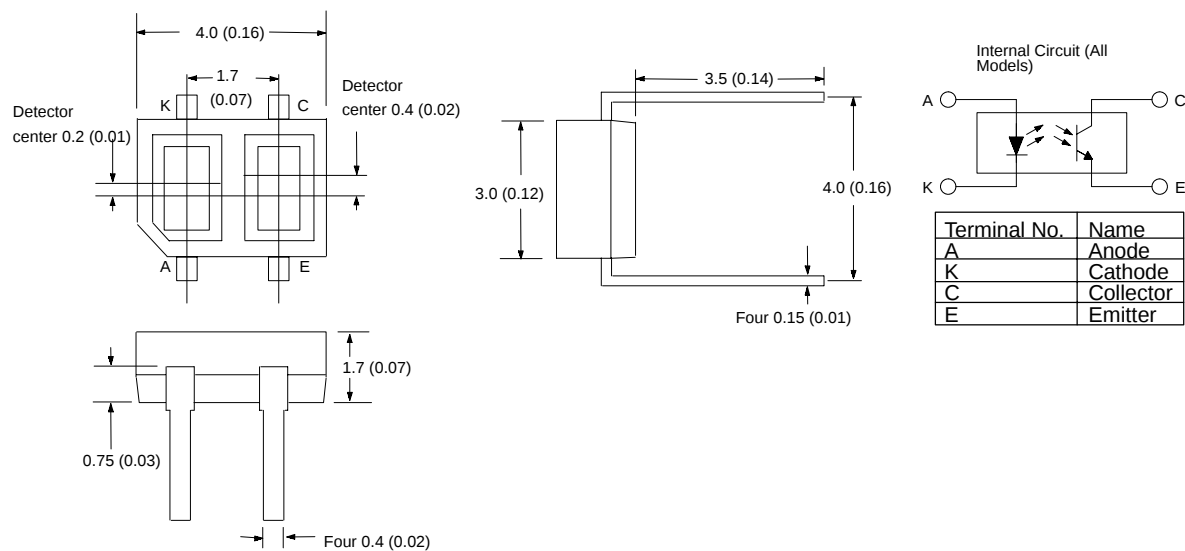


SWITCHING CHARACTERISTICS (TYPICAL) FALL TIME

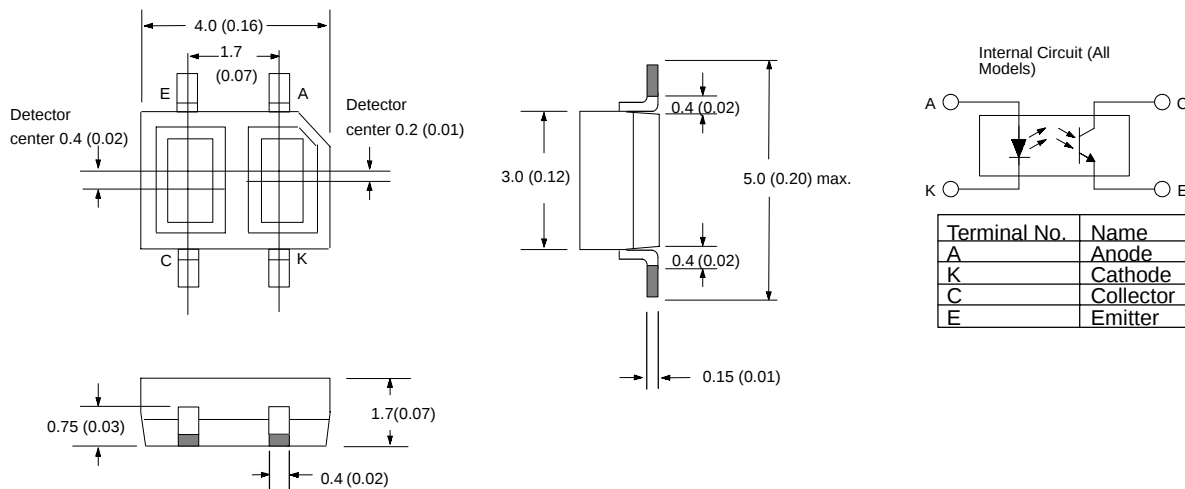


Unit: mm (inch)

■ EE-SY124



■ EE-SY125



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.



OMRON ELECTRONICS, INC.
One East Commerce Drive
Schaumburg, IL 60173
1-800-55-OMRON

OMRON CANADA, INC.
885 Milner Avenue
Scarborough, Ontario M1B 5V8
416-286-6465