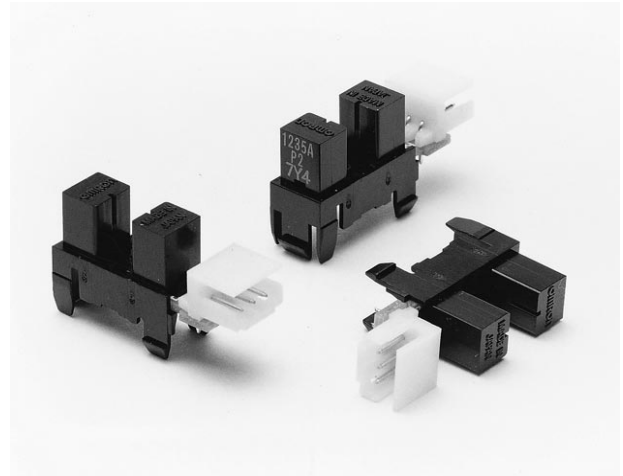


# Opto-Switch

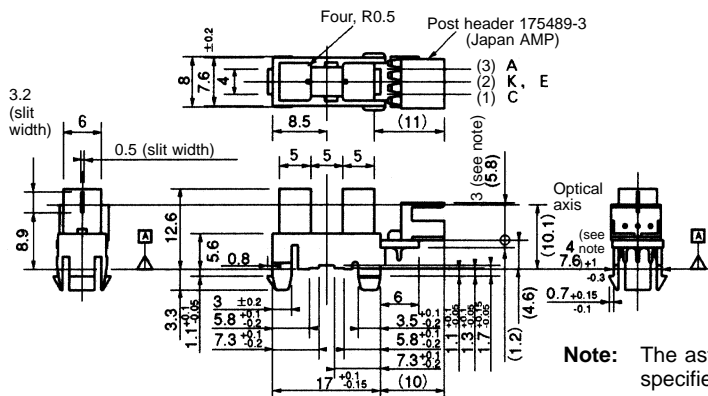
EE-SX1235A-P2

## Transmissive

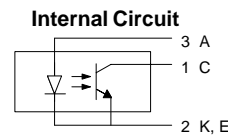
- Phototransistor output.
- Snap-in mounting mechanism for easy mounting and dismounting.
- Compatible with 1.0-, 1.2- and 1.6-mm-thick PCBs.
- High resolution with a 0.5-mm-wide aperture.
- 5-mm-wide slot.
- Connects to Japan AMP's CT-series connectors.



## Dimensions



**Note:** The asterisked dimension is specified by datum A only.



Terminal No.	Name
3 A	Anode
1 C	Collector
2 K, E	Cathode, Emitter

Unless otherwise specified, the tolerances are as shown below.

Dimensions	Tolerance
3 mm max.	±0.3
3 < mm ≤ 6	±0.375
6 < mm ≤ 10	±0.45
10 < mm ≤ 18	±0.55
18 < mm ≤ 30	±0.65

Recommended Connectors:  
 Japan AMP 173977-3 (insulation displacement-type connector)  
 175778-3 (crimp-type connector)  
 179228-3 (crimp-type connector)

For recommended mounting holes see EE-SX4235-P2 on page 402

## Specifications

### ■ Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rated value
Emitter	Forward current	I <sub>F</sub>
	Pulse forward current	I <sub>FP</sub>
	Reverse voltage	V <sub>R</sub>
Detector	Collector-Emitter voltage	V <sub>CEO</sub>
	Emitter-Collector voltage	V <sub>ECO</sub>
	Collector current	I <sub>C</sub>
	Collector dissipation	P <sub>C</sub>
	Operating	T <sub>opr</sub>
Ambient temperature	Storage	T <sub>stg</sub>
	Soldering	T <sub>sol</sub>
	Rated value	---

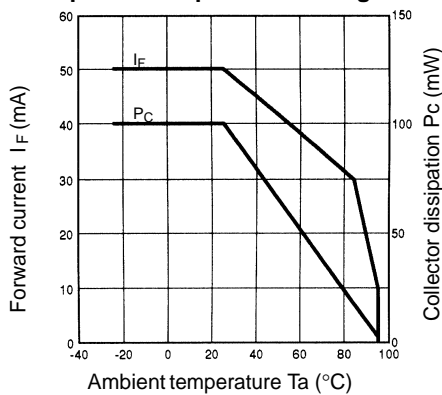
**Note:** Refer to the temperature rating chart if the ambient temperature exceeds 25°C.

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

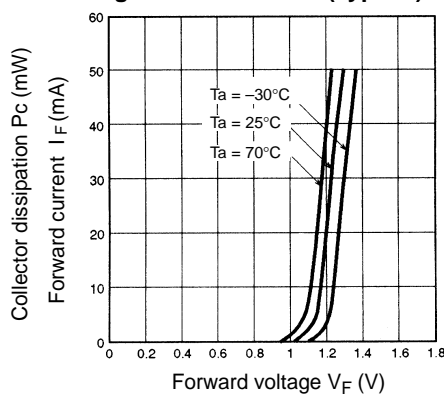
Item		Symbol	Value	Condition
Emitter	Forward voltage	$V_F$	1.2 V typ., 1.5 V max.	$I_F = 30$ mA
	Reverse current	$I_R$	0.01 $\mu$ A typ., 10 $\mu$ A max.	$V_R = 4$ V
	Peak emission wavelength	$\lambda_P$	940 nm typ.	$I_F = 30$ mA
Detector	Light current	$I_L$	0.6 mA min., 14 mA max.	$I_F = 20$ mA, $V_{CE} = 5$ V
	Dark current	$I_D$	200 nA max.	$V_{CE} = 10$ V, 0 lx
	Leakage current	$I_{LEAK}$	---	---
	Collector-Emitter saturated voltage	$V_{CE(sat)}$	0.1 V typ., 0.4 V max.	$I_F = 20$ mA, $I_L = 0.3$ mA
	Peak spectral sensitivity wavelength	$\lambda_P$	850 nm typ.	$V_{CE} = 5$ V
Rising time		$t_r$	8 $\mu$ s typ.	$V_{CC} = 5$ V, $R_L = 100 \Omega$ , $I_L = 1$ mA
Falling time		$t_f$	8 $\mu$ s typ.	$V_{CC} = 5$ V, $R_L = 100 \Omega$ , $I_L = 1$ mA

## Engineering Data

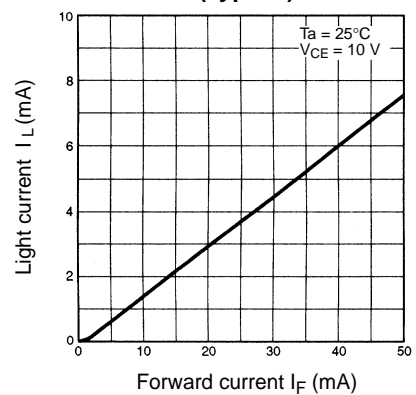
Forward Current vs. Collector Dissipation Temperature Rating



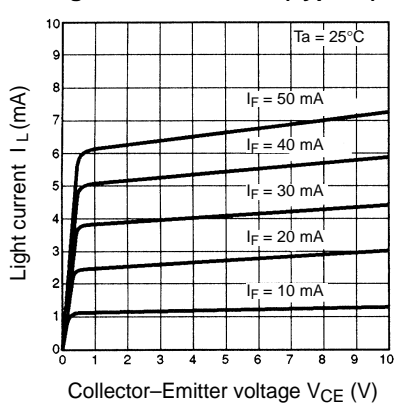
Forward Current vs. Forward Voltage Characteristics (Typical)



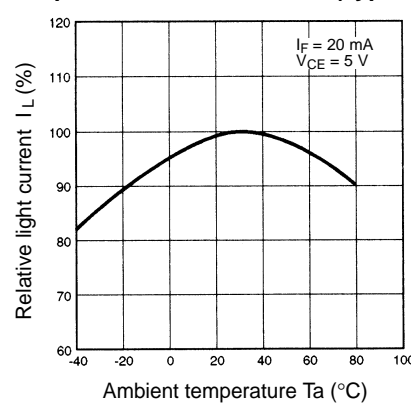
Light Current vs. Forward Current Characteristics (Typical)



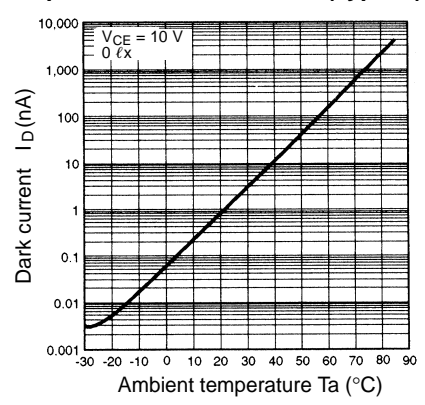
Light Current vs. Collector-Emitter Voltage Characteristics (Typical)



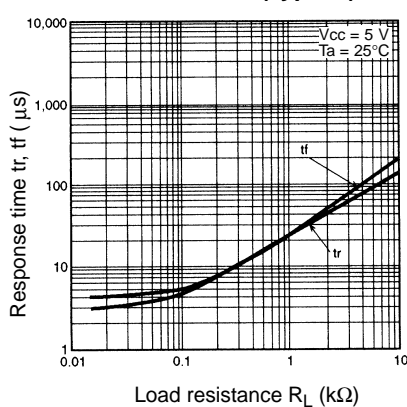
Relative Light Current vs. Ambient Temperature Characteristics (Typical)



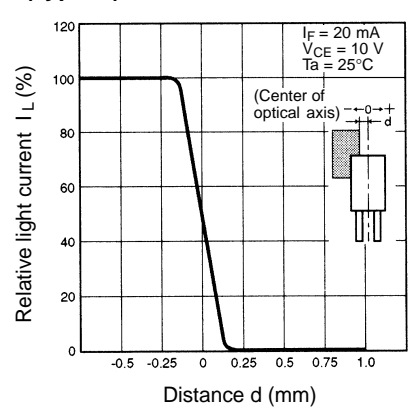
Dark Current vs. Ambient Temperature Characteristics (Typical)



Response Time vs. Load Resistance Characteristics (Typical)



Sensing Position Characteristics (Typical)



Response Time Measurement Circuit

