

OMRON.
 SENSOR GROUP
 TECHNICAL CENTER
 OMRON ELECTRONICS INCORPORATION

TO: _____

PRODUCT SPECIFICATION

PRODUCT NAME: PHOTOMICROSENSOR

PART NUMBER: EE-SX1088-W1

If all the items stipulated in this specification satisfy requirements, please sign and return two (2) copies of the specification by _____ in proof of your approval.

Should any item(s) of the specification be unsatisfactory, please return all copies of the specification with your comments or other requirements indicated in the pertinent sections on one copy of the specification.

APPROVAL OF SPECIFICATION	
	DATE: _____
	APPROVED BY: _____ (SIGNATURE)

DISTRIBUTION	CY	REVISIONS		
		LTR	DATE	BY
CUSTOMER	1			
SALES	1			
OMA	1			

DATE OF ISSUE July 25, 1994

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CHECKED BY :

APPROVED BY : *J. Hagiwara*

1. CONSTRUCTION AND DIMENSIONS

Emitter	GaAs infrared light-emitting diode
Detector	Si. phototransistor
Sensing Method	Transmissive type
Slot Width	3.4 mm
Output Configuration	Phototransistor
Number of Wires	4
Wire Length	610 mm
Wire Type	UL1061, AWG28; 80 °C, 300V
Photomicrosensor Outline Dimensions	See Figure 1.
Wire harness Assembly Outline Dimensions	See Figure 2.

2. ABSOLUTE MAXIMUM RATINGS (Ta=25 degC)

ITEM		SYMBOL	VALUE	UNIT	REMARKS
Emitter	Continuous Forward *1 Current	IF	50	mA	See Figure 3.
	Pulse Forward Current	IFP	1	A	Frequency: 100 Hz Pulse width: 10 μs
	Reverse Voltage	VR	4	V	-----
Detector	Collector-Emitter Voltage	VCEO	30	V	-----
	Emitter-Collector Voltage	VECO	-	V	-----
	Collector Current	IC	20	mA	
	Collector Power *1 Dissipation	PC	100	mW	See Figure 4.
Operating Temperature *2	TOPR	-25 to +85	deg C	Without wire harness	
Storage Temperature	TSTG	-30 to +100	deg C	Without wire harness	

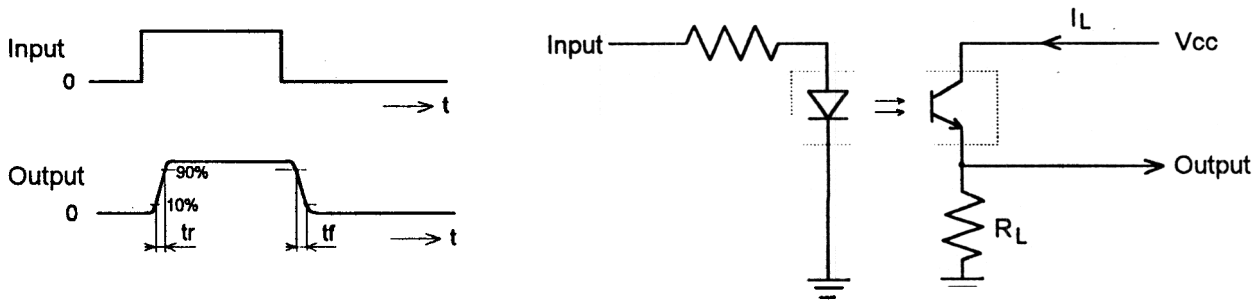
*1. Continuous Forward Current (IF) and Collector Power Dissipation (PC) must be derated complying with Figure 3 and Figure 4, respectively.

*2. The product must be used in applications where neither freezing nor condensation takes place.

3. ELECTRICAL AND OPTICAL CHARACTERISTICS (Ta=25 deg C)

ITEM	SYMBOL	LIMITS			UNIT	TEST CONDITIONS	
		MIN.	TYP.	MAX.			
Emitter	Forward Voltage	V _F	-	1.2	1.5	V	I _F = 30 mA
	Reverse Current	I _R	-	0.01	10	μA	V _R = 4 V
	Peak Emission Wavelength	λ _{p(L)}	-	940	-	nm	I _F = 20 mA
Detector	Light Current	I _L	0.5	-	14	mA	I _F = 20 mA V _{CE} = 10 V
	Dark Current	I _D	-	2	200	nA	V _{CE} = 10 V, 0 L _x
	Leakage Current	I _{LEAK}	-	-	-	μA	-----
	Collector-Emitter Saturation Voltage	V _{CE(sat)}	-	0.1	0.4	V	I _F = 20 mA I _L = 0.1 mA
	Peak Spectral Wavelength	λ _{p(P)}	-	850	-	nm	V _{CE} = 10 V
Rise Time	*	t _r	-	4	-	μs	V _{CC} = 5 V, I _L = 5 mA R _L = 100 Ω
Fall Time	*	t _f	-	4	-	μs	V _{CC} = 5 V, I _L = 5mA R _L = 100 Ω

* Refer to the following timing diagram for t_r and t_f.



4. STANDARD TESTING CONDITIONS

Unless otherwise specified, the values in this specification are tested complying with the conditions below.

- 4.1 Temperature 25 deg C
- 4.2 Humidity 65 %RH
- 4.3 Others based on EIAJ EDX-8121 [General Rules for Photointerrupters with a Phototransistor]

5. MOUNTING

The product shall be secured to a flat mounting surface with a pair of M3 mounting screw and a spring washer tightened to a maximum torque of 6.0 kgf-cm {0.59 N-m}.

6. STORAGE AND OPERATING CONDITIONS

The product shall be stored and operated in the following location:

- (1) Location free from corrosive gas such as hydrogen sulfide or sea breezes.
- (2) Location free from visible light.
- (3) Location free from direct sunlight.

In no case shall the product be subjected to any load which may lead to deformation or deterioration of the product.

7. MODIFICATION TO SPECIFICATIONS

All the specifications described herein except absolute maximum ratings, electrical characteristics, and outline dimensions will be subject to change by OMRON (hereinafter referred to as the Supplier) without prior notice.

8. VALIDITY OF SPECIFICATIONS

The Supplier shall have a right to void this specification, provided that neither approval nor order is received from the Client within a period of one(1) year from the date of issue of the said specification.

9. PERIOD AND SCOPE OF WARRANTY

9.1 Warranty Period

The product will be warranted against faulty workmanship or material by the Supplier, under the conditions prescribed in paragraph 9.2 below, for a period of one (1) year from the date of delivery of the product to the site specified by the Client.

9.2 Scope of Warranty

Should any unit of the product delivered or parts thereof be found defective or failed during the said warranty period, the Supplier will replace or repair the said defective or failed unit or parts thereof, provided that the Supplier recognize the responsibility for the said defect or failure. The warranty stipulated herein shall not apply to the secondary failure or consequential damage resulting the said unit delivered.

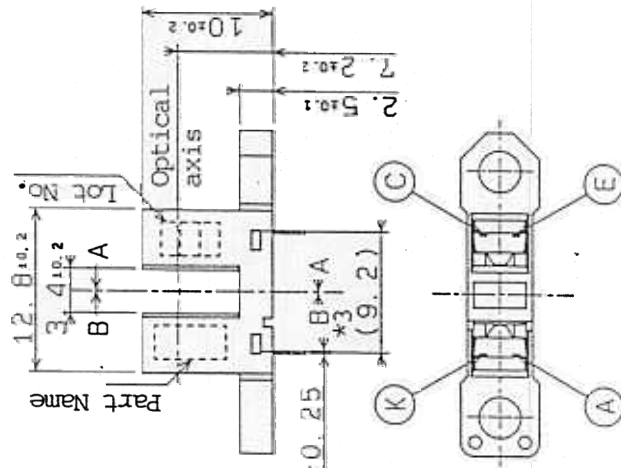
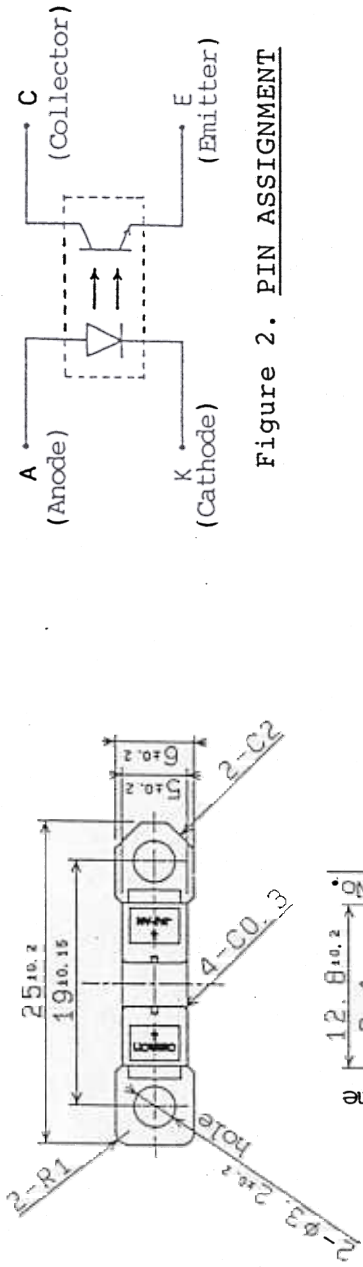
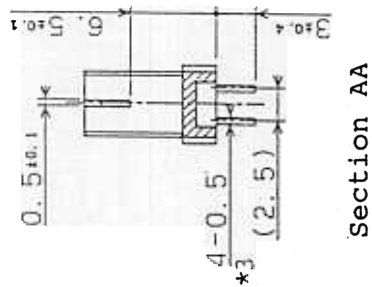
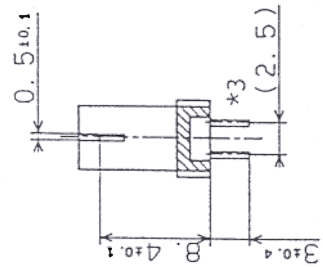


Figure 2. PIN ASSIGNMENT



Section AA

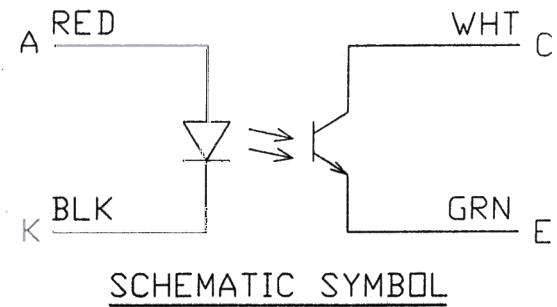


Section BB

RANGE (mm)	Tolerance (mm)
X≤3	±0.300
3<X≤6	±0.375
6<X≤10	±0.450
10<X≤18	±0.550
18<X≤30	±0.650
30<X≤50	±0.800
50<X≤80	±0.950
80<X≤120	±1.100

NOTE: *1 All dimensions are in millimeters.
 *2 Unless otherwise specified, tolerances are shown on the right table.
 *3 The value in parentheses are reference dimensions.

Figure 1. OUTLINE DIMENSIONS (EE-SX1088)



SCHEMATIC SYMBOL

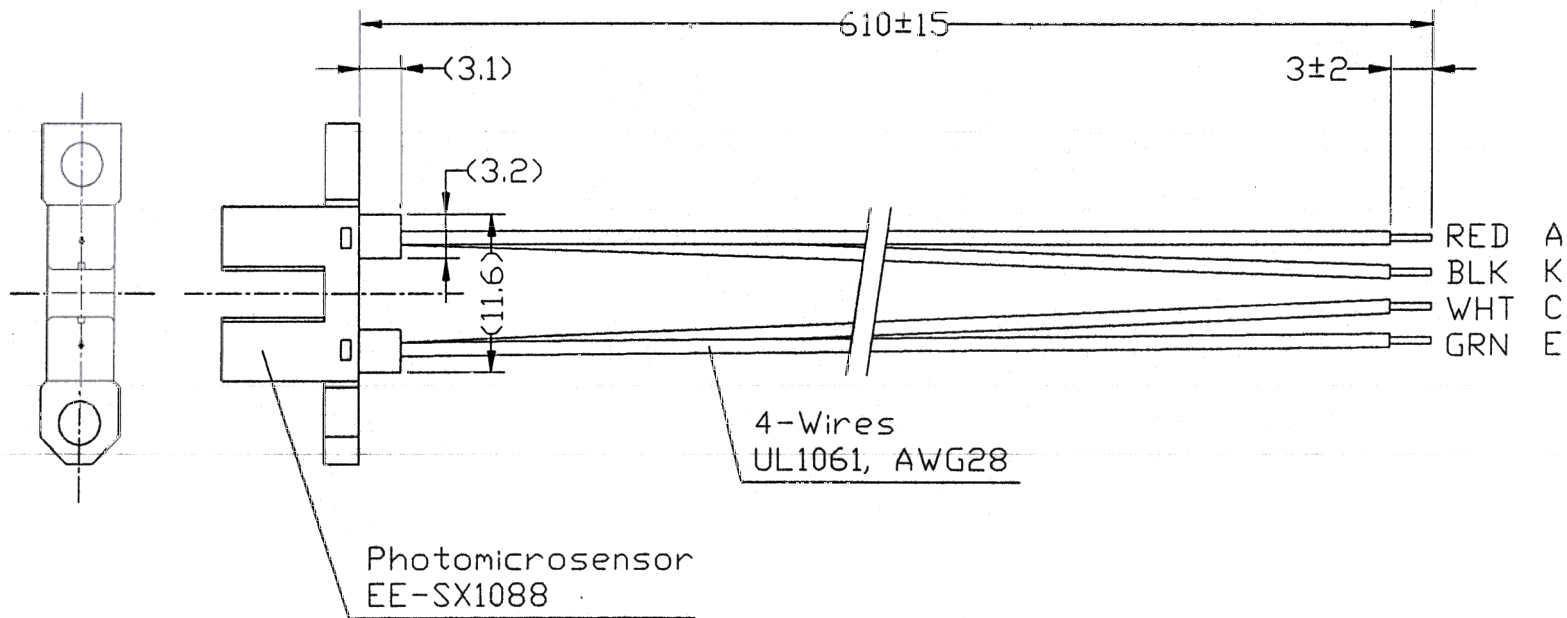


Figure 2. OUTLINE DIMENSIONS

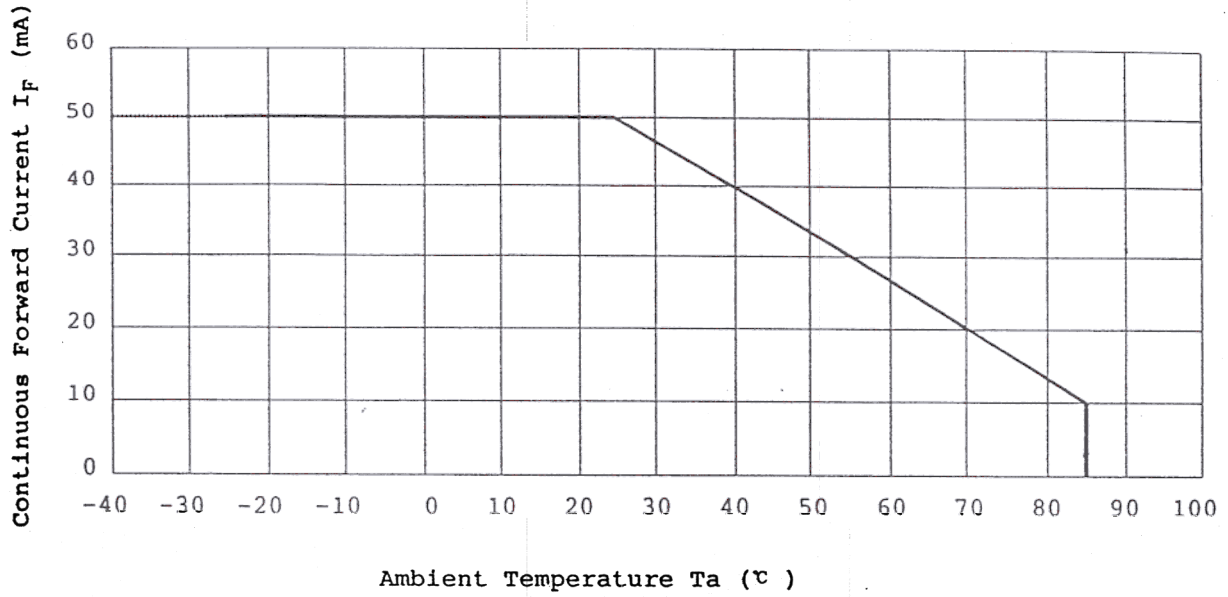


Figure 3. Continuous forward current derating for temperature

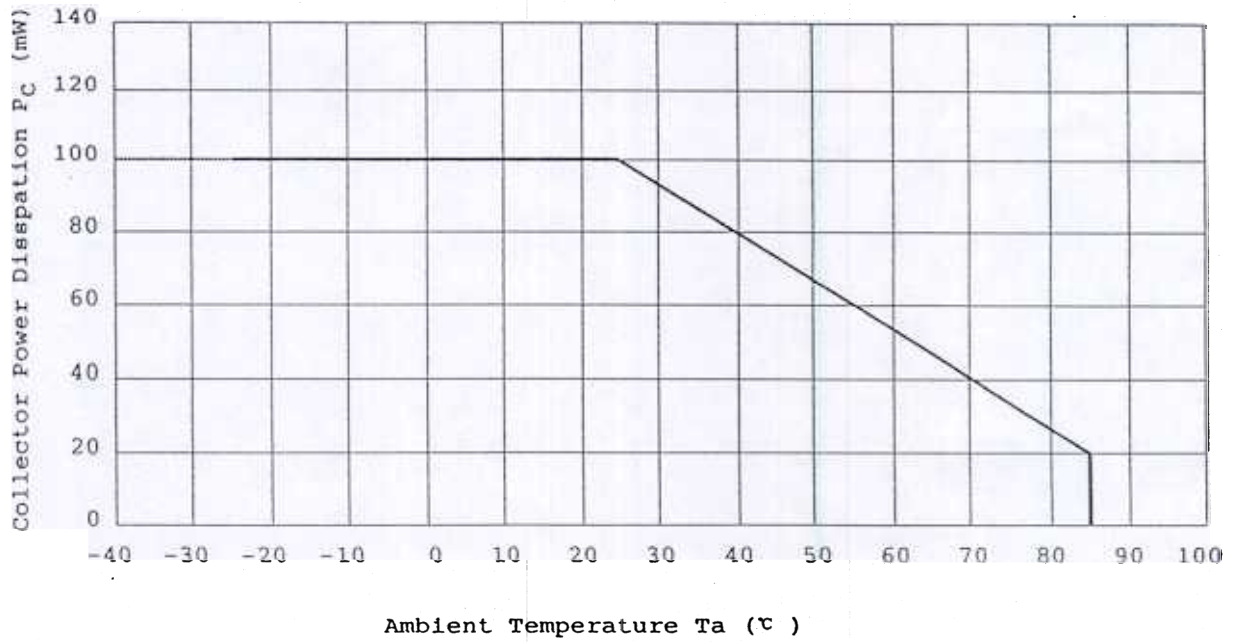


Figure 4. Collector power dissipation derating for temperature