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)

DISTRI-BUTION	CY	REVISIONS		
		LTR	DATE	BY
CUSTOMER	1			
SALES	1			
OMA	1			

DATE OF ISSUE July 25, 1994

PREPARED BY : A. Nakata

CHECKED BY :

APPROVED BY : I. 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 Dissipation *1	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

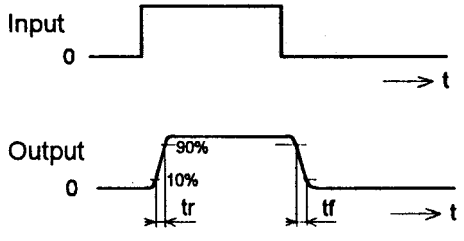
*1. Continuous Forward Current (IF) and Collector Power Dissipation (PC) must be derated complying with Figure 3 and Figure 4, respectively.

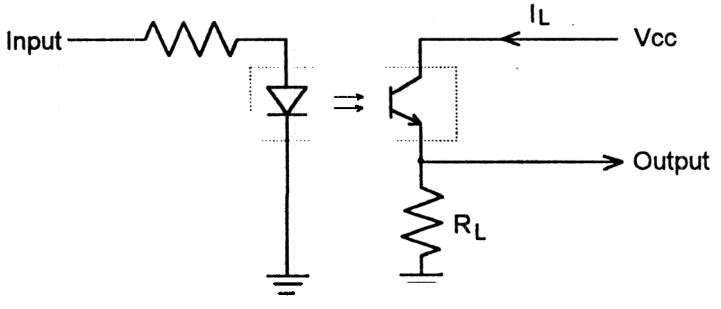
*2. The product must be used in applications where neither freezing nor condensation takes place.

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

ITEM		SYMBOL	LIMITS			UNIT	TEST CONDITIONS
			MIN.	TYP.	MAX.		
Emitter	Forward Voltage	VF	-	1.2	1.5	V	IF= 30 mA
	Reverse Current	IR	-	0.01	10	μA	VR= 4 V
	Peak Emission Wavelength	λp(L)	-	940	-	nm	IF= 20 mA
Detector	Light Current	IL	0.5	-	14	mA	IF= 20 mA VCE= 10 V
	Dark Current	ID	-	2	200	nA	VCE= 10 V, 0 Lx
	Leakage Current	ILEAK	-	-	-	μA	----------
	Collector-Emitter Saturation Voltage	VCE(sat)	-	0.1	0.4	V	IF= 20 mA IL= 0.1 mA
	Peak Spectral Wavelength	λp(P)	-	850	-	nm	VCE= 10 V
Rise Time *		tr	-	4	-	μs	VCC= 5 V, IL= 5 mA RL= 100 Ω
Fall Time *		tf	-	4	-	μs	VCC= 5 V, IL= 5mA RL= 100 Ω

* Refer to the following timing diagram for tr and tf.





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.

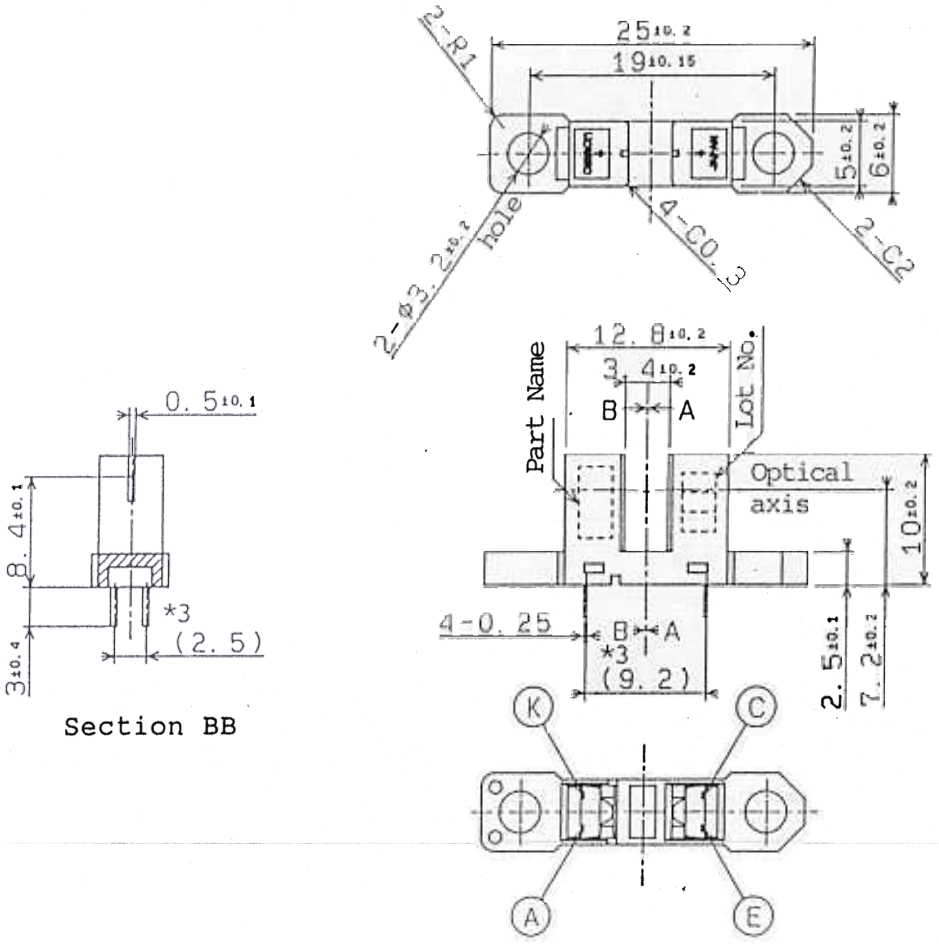
9. PERIOD AND SCOPE OF WARRANTY

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.



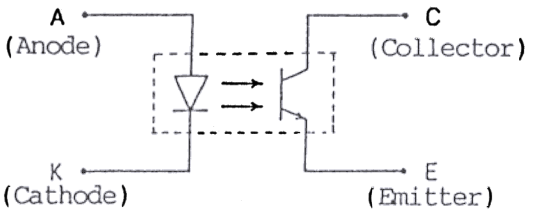


Figure 2. PIN ASSIGNMENT

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.

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

Figure 1. OUTLINE DIMENSIONS(EE-SX1088)

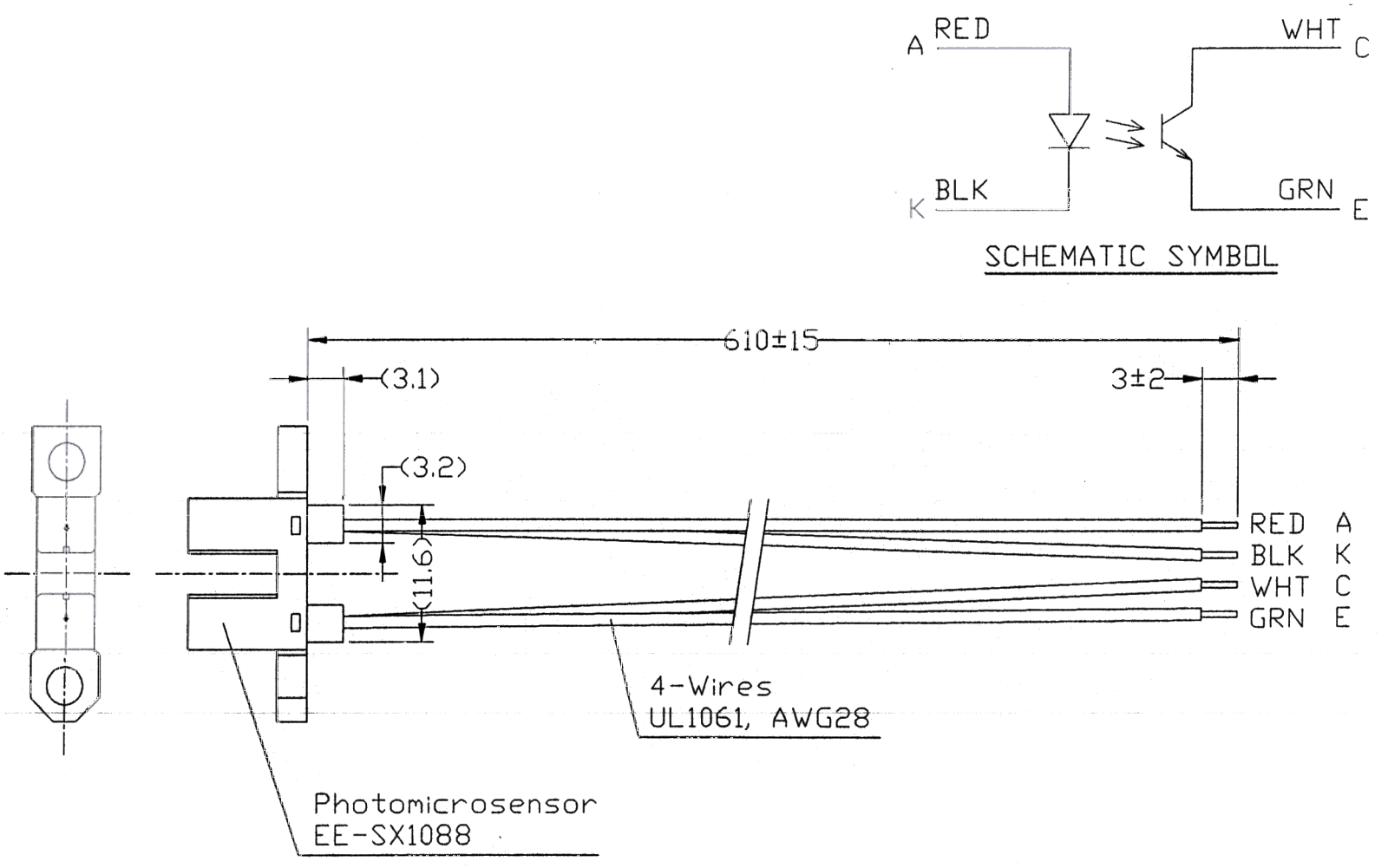


Figure 2. OUTLINE DIMENSIONS

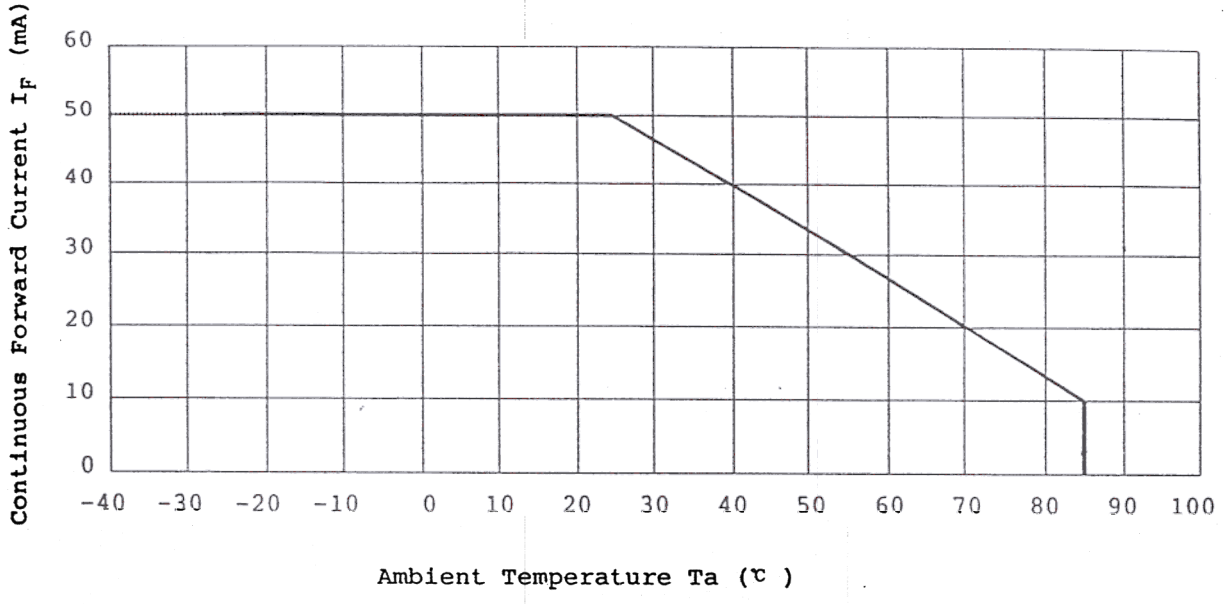


Figure 3. Continuous forward current derating for temperature

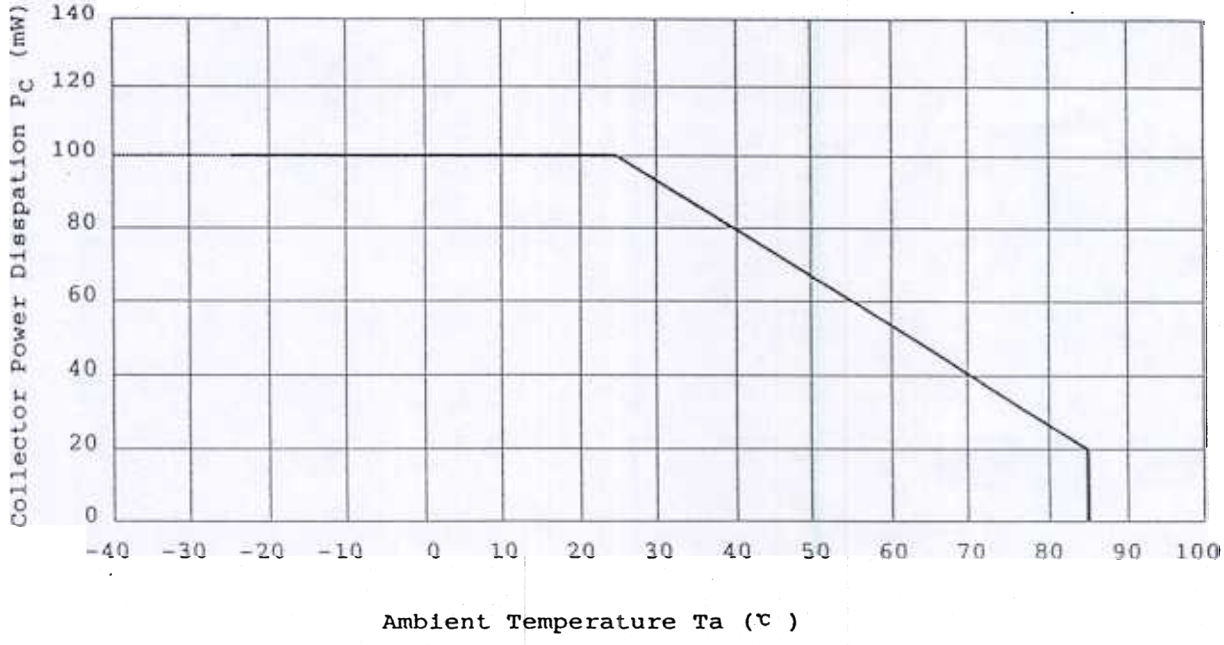


Figure 4. Collector power dissipation derating for temperature