

OMRON.

SENSOR GROUP

TECHNICAL CENTER

OMRON ELECTRONICS INCORPORATION

TO: _____

PRODUCT SPECIFICATIONPRODUCT NAME: PHOTOMICROSENSORPART 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)

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DATE OF

ISSUE

July 25, 1994

PREPARED

BY :

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 μ s |
| | 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 |

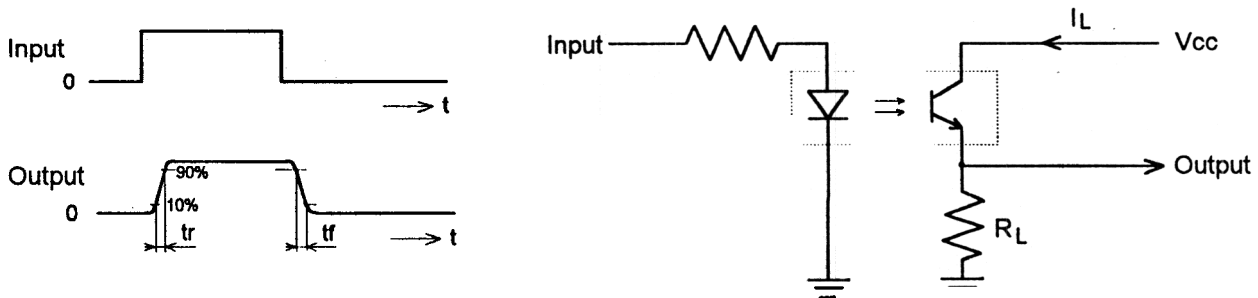
*1. Continuous Forward Current (IF) and Collector Power Dissipation (PC) must be derated complying with Figure 3 and Figure 4, respectively.

*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.

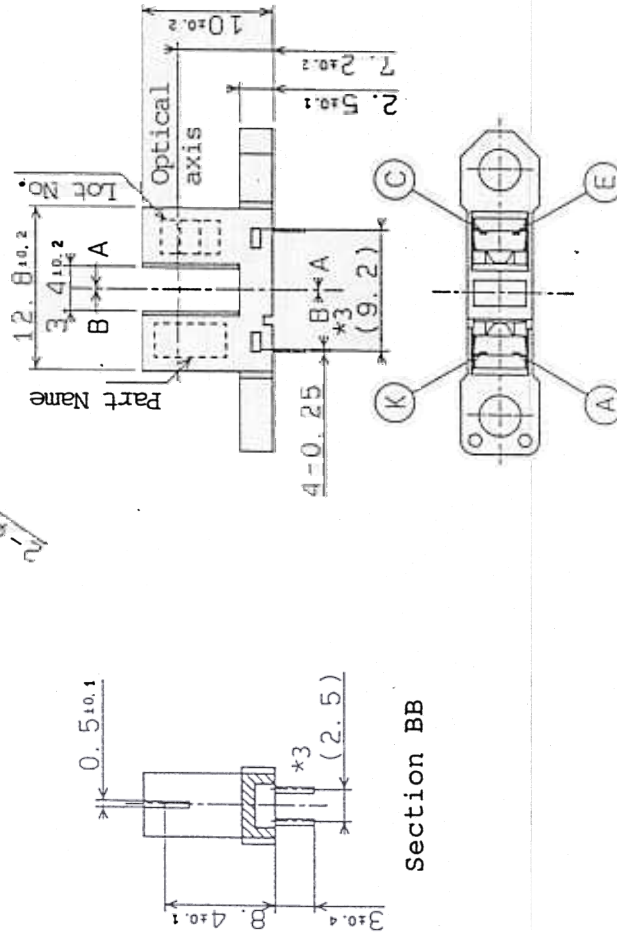
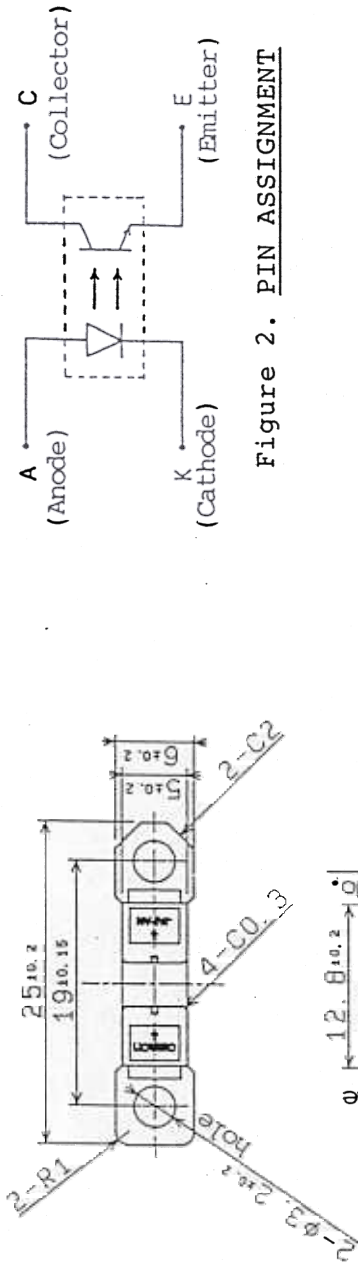
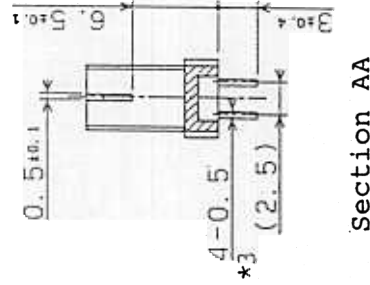
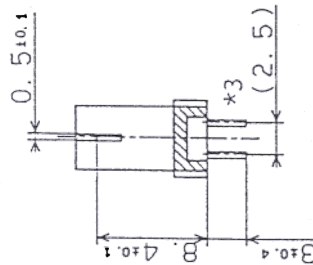


Figure 2. PIN ASSIGNMENT



Section AA



Section BB

| Range | 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)

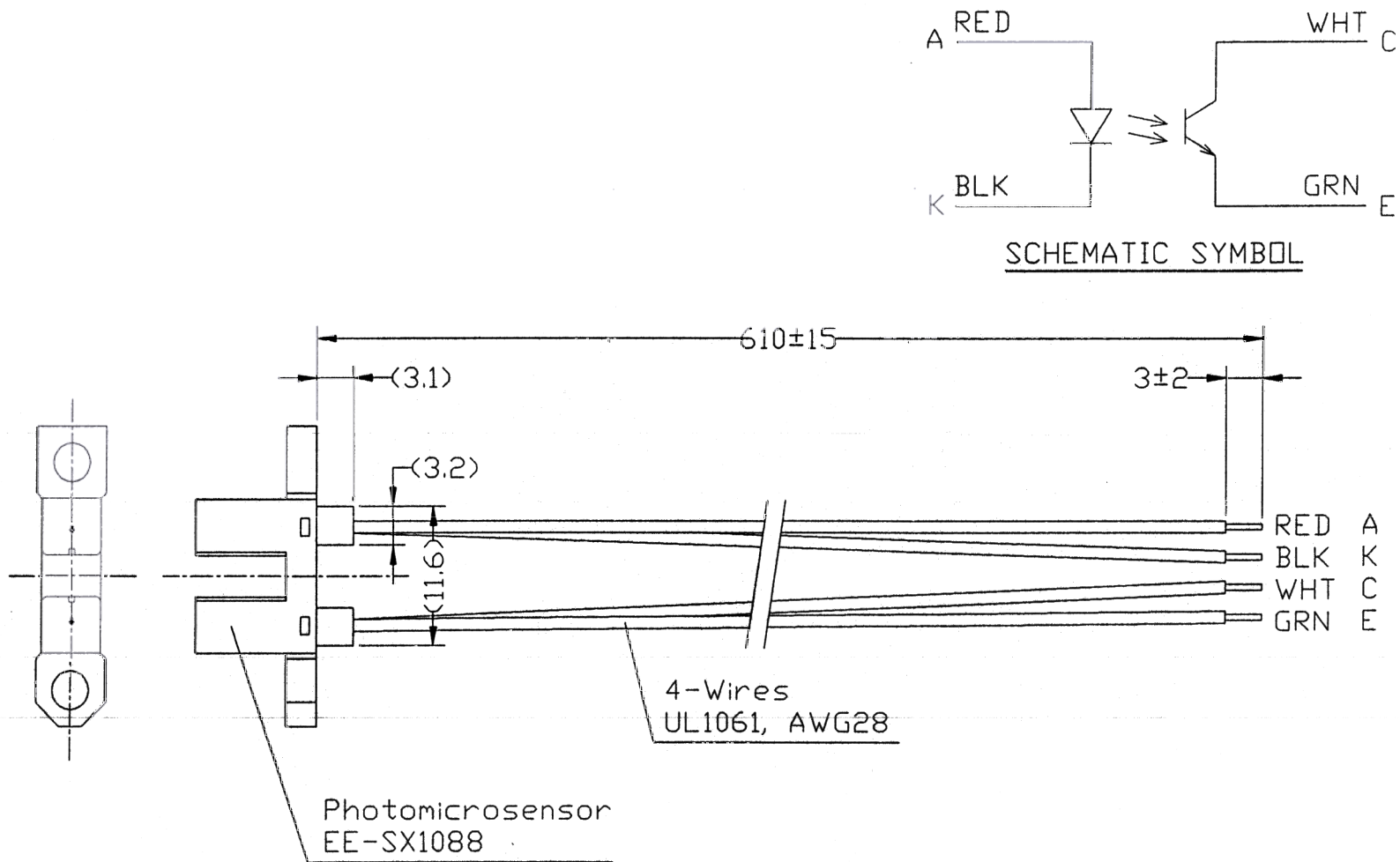


Figure 2. OUTLINE DIMENSIONS

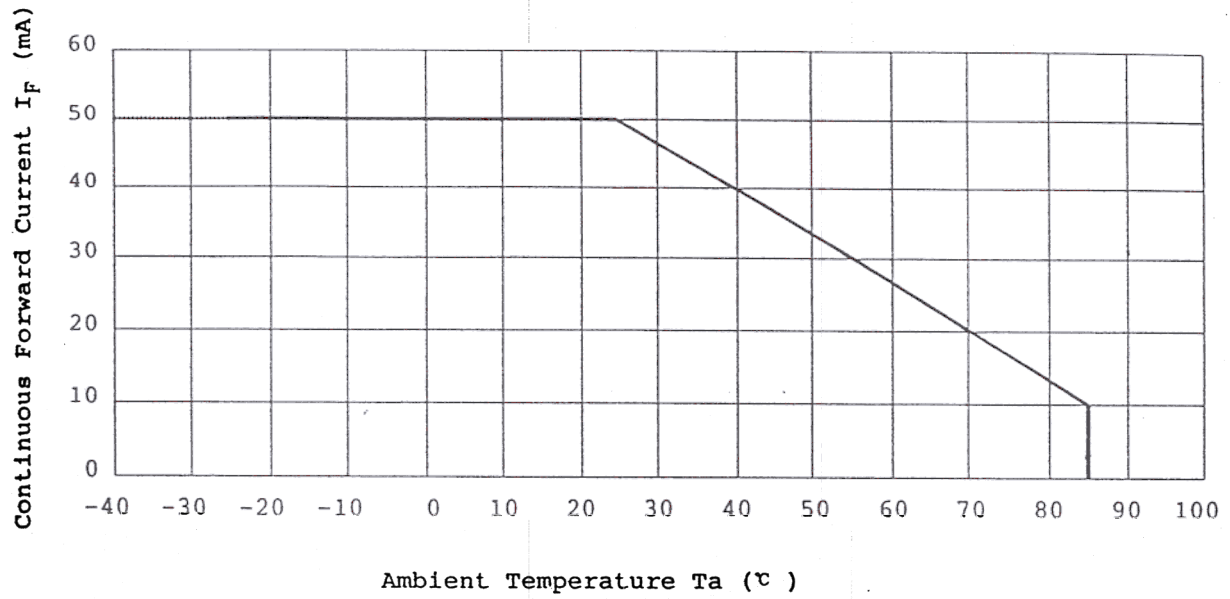


Figure 3. Continuous forward current derating for temperature

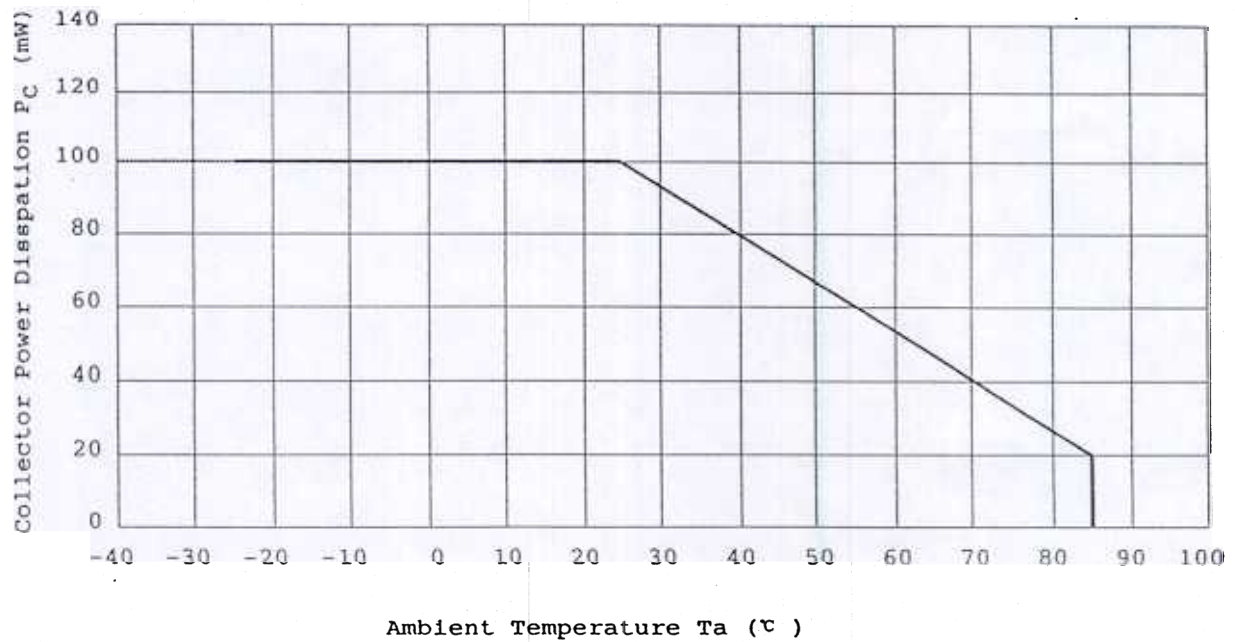


Figure 4. Collector power dissipation derating for temperature

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