OMRON.
SENSOR GROUP
TECHNICAL CENTER
OMRON ELECTRONICS INCORPORATION

TO: _____

PRODUCT SPECIFICATION

PRODUCT NAME: PHOTOMICROSENSOR

PART NUMBER: EE-SX3088-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 : H. Tadeta

CHECKED BY : _____

APPROVED BY : O. Hagiwara

1. CONSTRUCTION AND DIMENSIONS

Emitter	GaAs infrared light-emitting diode
Detector	Si. photo integrated circuit (one chip)
Sensing Method	Transmissive type
Slot Width	3.4 mm
Output Configuration	Light - OFF
Number of Wires	5
Wire Length	610 mm
Wire Type	UL1061, AWG28; 80 °C, 300V
Photomicrosensor Outline Dimensions	See Figure 2.
Wired Sensor Assembly Outline Dimensions	See Figure 3.

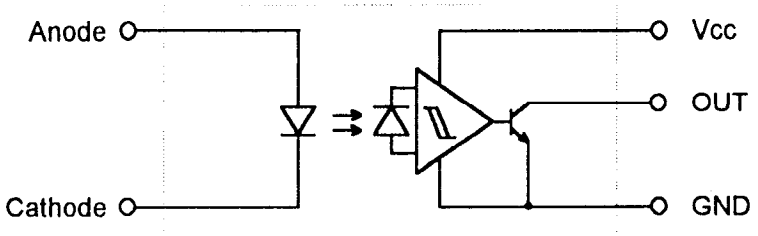


Figure 1. INTERNAL CONNECTIONS

2. ABSOLUTE MAXIMUM RATINGS (Ta=25 degC)

ITEM		SYMBOL	VALUE	UNIT	REMARKS
Emitter	Continuous Forward *1 Current	IF	50	mA	See Figure 4.
	Reverse Voltage	VR	4	V	----------
Detector	Supply voltage	VCC	16	V	----------
	Output Voltage	VOUT	28	V	----------
	Output Current	IOUT	16	mA	
	Output Power Dissipation *1	POUT	250	mW	See Figure 5.
Operating Temperature *2		TOPR	-40 to +75	deg C	Without wires
Storage Temperature		TSTG	-40 to +85	deg C	Without wires

*1. Continuous Forward Current (IF) and Collector Power Dissipation (POUT) must be derated complying with Figure 4 and Figure 5, respectively.

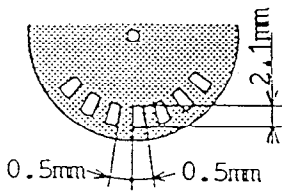
*2. The product must be used in applications where neither freezing nor condensation takes place.

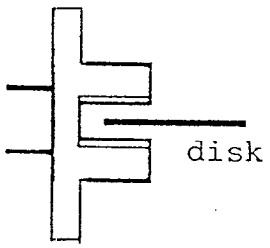
3. ELECTRICAL AND OPTICAL CHARACTERISTICS (Ta=25 deg C)

ITEM		SYMBOL	LIMITS			UNIT	TEST CONDITIONS
			MIN.	TYP.	MAX.		
Emitter	Forward Voltage	VF	-	1.2	1.5	V	IF= 20 mA
	Reverse Current	IR	-	0.01	10	μA	VR= 4 V
	Peak Emission Wavelength	λp(L)	-	940	-	nm	IF= 20 mA
Detecter	Low Level Output Voltage	VOL	-	0.12	0.4	V	VCC= 4.5 to 16 V IOL= 16 mA, IF= 0 mA
	High Level Output Voltage	VOH	15	-	-	V	VCC= 16 V, RL= 1 kΩ IF= 5 mA
	Consumption Current	ICC	-	3.2	10	mA	VCC= 16 V
LED Forward Current when Output is OFF		IFT	-	2	5	mA	VCC= 4.5 to 16 V
Hysteresis *1		H	-	15	-	%	VCC= 4.5 to 16 V
Response Frequency *2		f	3	-	-	kHz	VCC= 4.5 to 16 V IF= 15 mA IOL= 16 mA
Propagation Delay (Low to High) *3		tPLH	-	3	-	μs	
Propagation Delay (High to Low) *3		tPHL	-	20	-	μs	

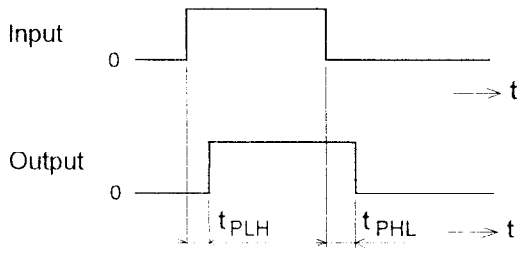
*1. Hysteresis denotes the difference, expressed in percentage, of the LED current under two inversed states of the output.

*2. The value indicated is that measured by rotating the disk as shown below.





*3. The definition of "Propagation Delay " is shown below.



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.

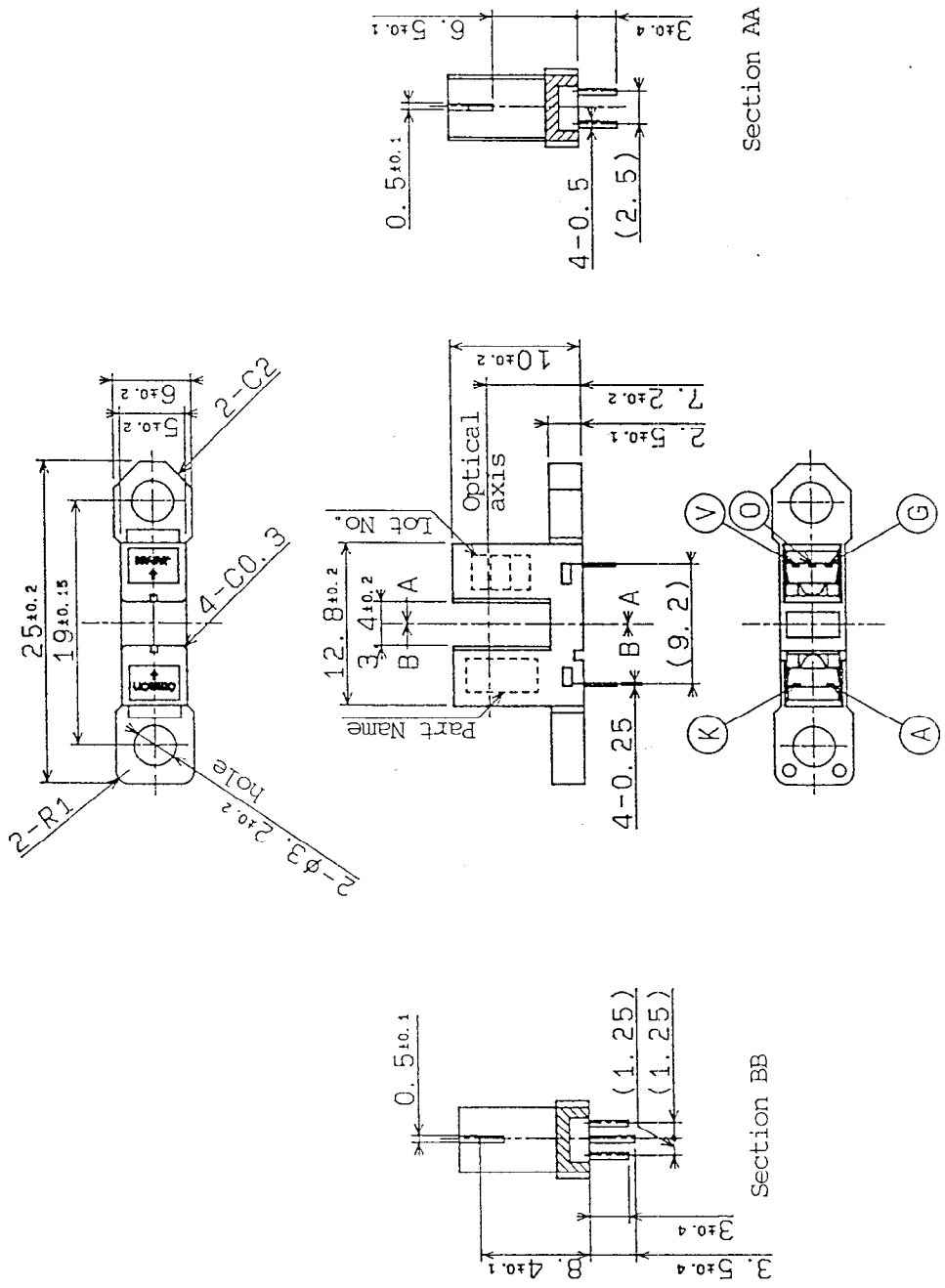
9. PERIOD AND SCOPE OF WARRANTY

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.



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 values in parentheses are reference dimensions.

Figure 2. OUTLINE DIMENSIONS(EE-SX3088)

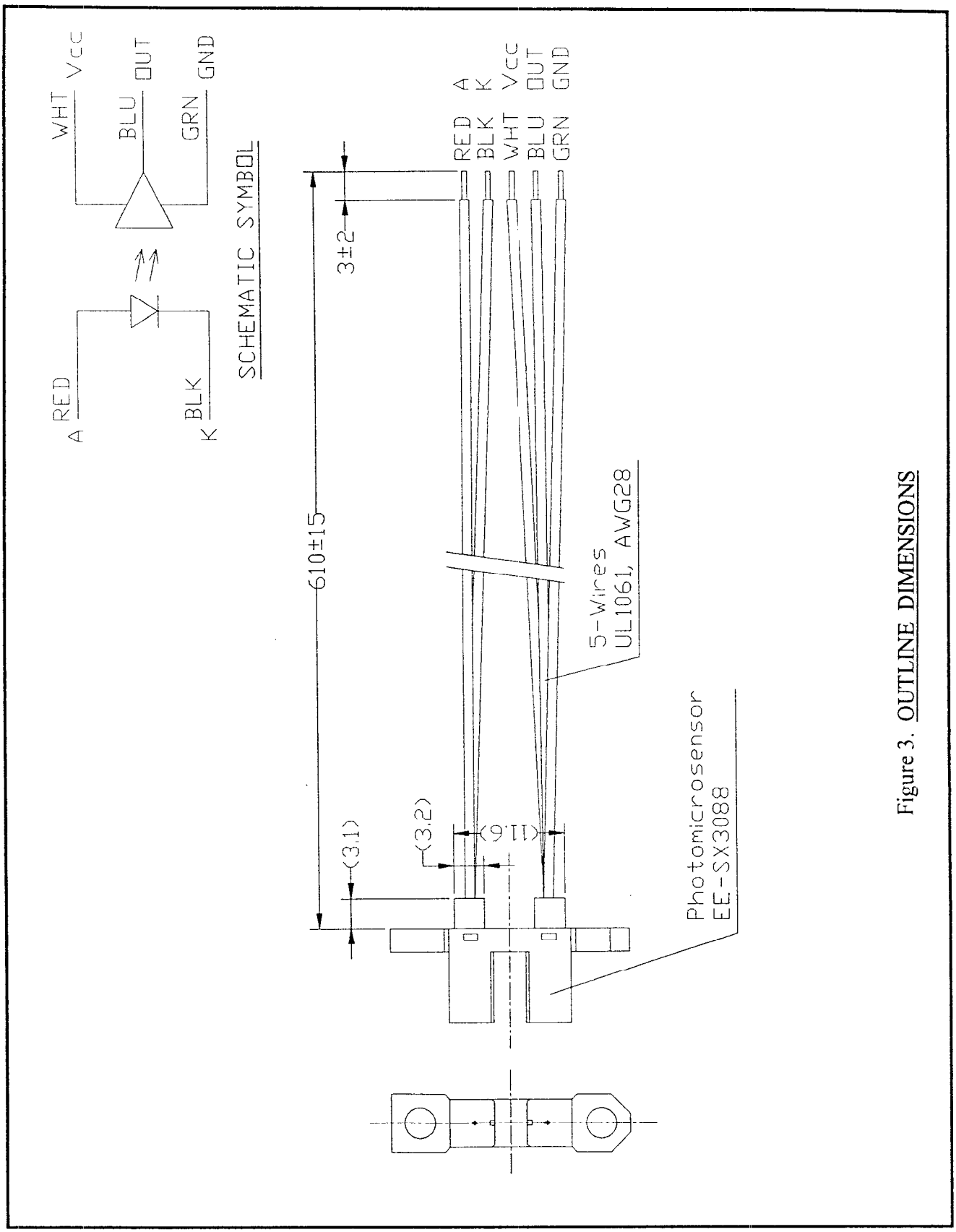


Figure 3. OUTLINE DIMENSIONS

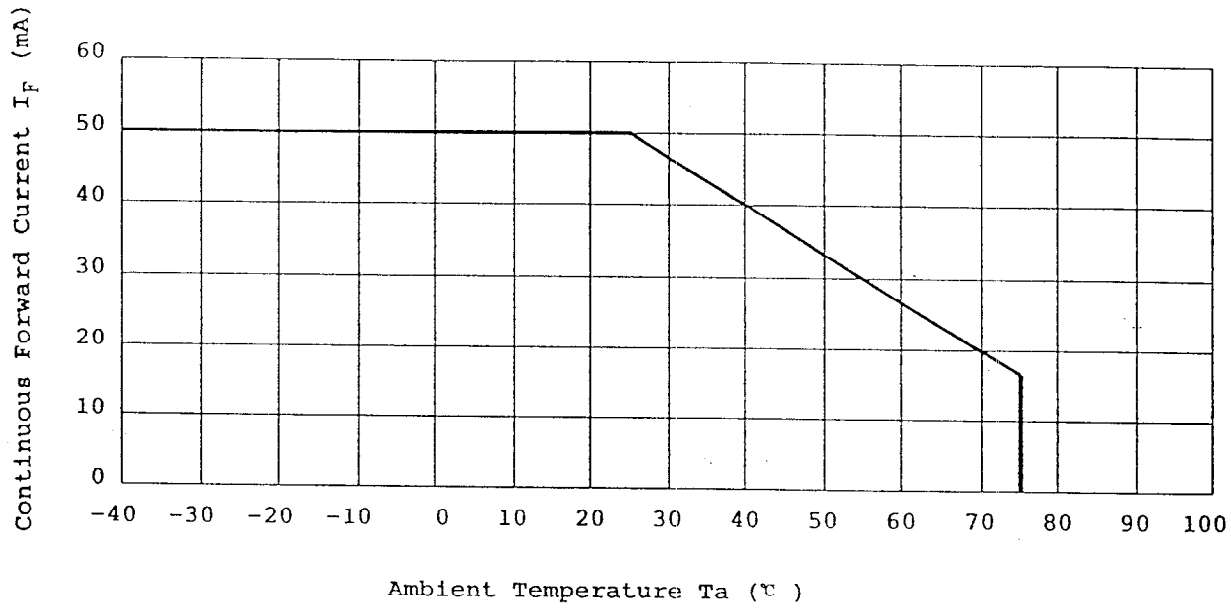


Figure 3. Continuous forward current derating for temperature

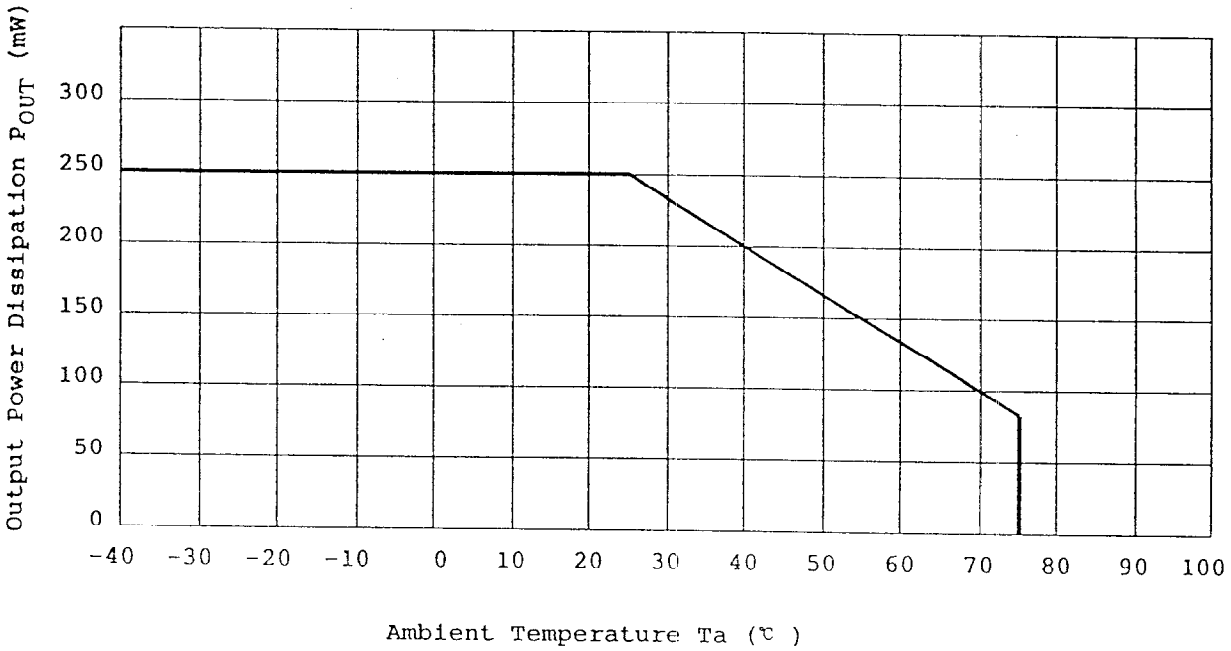


Figure 4. Output power dissipation derating for temperature