

SPECIFICATION FOR APPROVAL

MODEL : S300-A-P

PYROELECTRIC INFRARED SENSOR

**CUSTOMER:
APPROVED BY:
DATE:**

TYPE: S300-A-P

PAGE: 1 /6

CHART:

EDITION: A

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TYPE OF SENSOR

GENERAL PURPOSE DUAL ELEMENTS

PHYSICAL CONFIGURATION

- (1) PACKAGE TO-5 METAL CAN
SEE FIGURE A
- (2) SENSITIVE AREA 2.0×1.0 mm
- (3) LEAD CONFIGURATION SEE FIGURE B,C

ELECTRICAL CHARACTERISTICS (AT 25±5°C)

- (1) CIRCUIT CONFIGURATION SEE FIGURE D
- (2) SUPPLY VOLTAGE 2.2~15 V DC (Drain-Ground)
(Rs: 47K Ω)
- (3) OFFSET VOLTAGE 0.4~1.1 V
TYP 0.7 V (VD=10V, Rs=47K Ω)
- (4) SIGNAL OUTPUT Min 2.5 Vp-p
TYP 3.9 Vp-p (Source-Ground)
(BLACK BODY 420K; CHOPPER
FREQUENCY 1Hz: MEASUREMENT
AMP. 0.3~3.0Hz、 72.5db(AT 1Hz))
SEE FIGURE F
- (5) SENSITIVITY 420K, 1Hz 3300 V/W
- (6) DETECTIVITY (420K,1Hz,1Hz) 1.5×10^8 cmHz^{1/2}/W
- (7) BALANCE OUTPUT Max 20% (Source-Ground)
(BLACK BODY 420K; CHOPPER
FREQUENCY 1Hz: MEASUREMENT
AMP. 0.3~3.0Hz、 72.5db(AT 1Hz))
SEE FIGURE G

TYPE: S300-A-P	PAGE: 2 / 6	CHART:	EDITION: A
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- (8) NOISE OUTPUT Max 200mV
 TYP 80 mV (Source-Ground)
 (MEASUREMENT AMP. 0.3~3.0Hz、
 72.5db(AT 1Hz))
 SEE FIGURE H
- (9) NEP (420K,1Hz,1Hz) 9.6×10^{-10} W

OPTICAL CHARACTERISTICS

- (1) FIELD OF VIEW 138° × 125°
 SEE FIGURE I
- (2) SPECTRAL RESPONSE Si Filter Cuton 5.0±0.5 μm
 Thickness 0.5mm
 Average T > 70%
 Pass Band 7.0 ~ 14 μ

ENVIRONMENTAL REQUIREMENTS

- (1) OPERATING TEMPERATURE - 30 ~ + 70 °C
 (2) STORAGE TEMPERATURE - 40 ~ + 80 °C

※ **NOTES**

1. DESIGN RESTRICTIONS/PRECAUTIONS

FOR OUTDOOR APPLICATIONS , BE SURE TO APPLY SUITABLE SUPPLEMENTARY OPTICAL FILTER AND DRIP-PROOF . ANTI-DEW CONSTRUCTION. THIS SENSOR IS DESIGNED FOR INDOOR USE. IN CASES WHERE SECONDRAY ACCIDENTS DEE TO OPERATION FAILURE OR MALFUNCTIONS CAN BE ANTICIPATED . ADD A FAIL SAFE FUNCTION TO THE DESIGN.

2. USAGE RESTRICTIONS/PRECAUTIONS

TO PREVENT SENSOR MALFUNCTIONS, OPERATIONAL, FAILURE OR ANY DETERIORATION OF ITS CHARACTERISTICS. DO NOT USE THIS SENSOR IN FOLLOWING, OR SIMILAR, CONDITIONS.

TYPE: S300-A-P	PAGE: 3 / 6	CHART:	EDITION: A
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- A. IN RAPID ENVIRONMENTAL TEMPERATURE CHANGES.
- B. IN STRONG SHOCK OR VIBRATION. CUSTOMERS TO USE FALL PROTECTION, CERAMIC CHIP FRAGILE.
- C. IN A PLACE WHERE THERE ARE OBSTRUCTING MATERIALS (GLASS.FOG.ETC) THROUGH WHICH INFRARED RAYS CANNOT PASS WITHIN DETECTION AREA.
- D. IN FLUID. CORROSIVE GASES AND SEA BREEZE.
- E. CONTINUAL USE IN HIGH HUMIDITY ATMOSPHERE.
- F. EXPOSED TO DIRECT SUN LIGHT OR HEADLIGHTS OF AUTOMOBILES.
- G. EXPOSED TO DIRECT WIND FROM A HEATER OR AIR CONDITIONS.
- H. PRODUCTION PROCESS, NOT THE ACCUMULATION OF STACKED PCB BOARD,THE FILTER IS EASILY DAMAGED.

3. ASSEMBLY RESTRICTIONS/PRECAUTIONS

SOLDERING-----

- A. USE SOLDERING IRONS WHEN SOLDERING.
- B. AVOID KEEPING PINS OF THIS HOT FOR A LONG TIME AS EXCESSIVE HEAT MAY CAUSE DETERIORATION OF ITS QUALITY.(E.G. WITHIN 5 SEC. AT 350°C)
- C. AVOID STATIC ELECTRICITYOR STRONG ELECTROMAGNETIC WAVES. RECOMMENDED TO WEAR A SHIELD RING.

WASHING-----

- A. BE SURE TO WASH OUT ALL FLUX AFTER SOLDERING AS RENAINDER MAY CAUSE MALFUNCTIONS.
- B. USE A BRUSH WHEN WASHING.WASHING WITH AN ULTRASONIC CLEANER MAY CAUSE OPERATIONAL FAILURE.

4.HANDLING AND STORAGE RESTRICTIONS/PRECAUTIONS

TO PREVENT SENSOR MALFUNCTIONS, OPERATIONAL FAILURE. APPEARANCE DAMAGE OR ANY DETERIORATION OF ITS CHARACTERISTICS. DO NOT EXPOSE THIS SENSOR TO THE FOLLOWING OR SIMILAR, HANDLING AND STORAGE CONDITIONS.

- A. VIBRATION FOR A LONG TIME.
- B. STRONG SHOCK.
- C. STATIC ELECTRICITYOR STRONG ELECTROMAGNETIC WAVES.
- D. HIGH TEMPERATURE AND HUMIDITY FOR A LONG TIME.
- E. CORROSIVE GASES OR SEA BREEZE.
- F. DIRTY AND DUSTY ENVIRONMENTS THAT MAY CONTAMINATE THE OPTICAL WINDOWS.

SENSOR TROUBLES RESULTING FROM MISUSE. INAPPROPRIATE HANDLING OR STORAGE ARE NOT THE MANUFACTURER ' S RESPONSIBILITY.

TYPE: S300-A-P

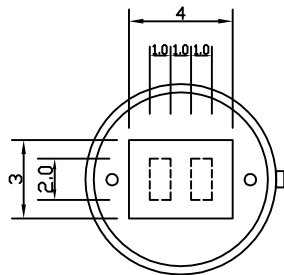
PAGE: 4 /6

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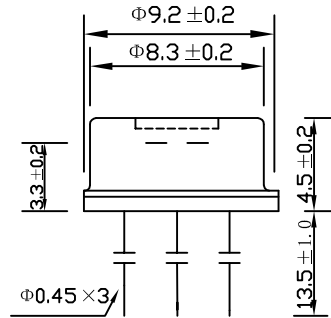
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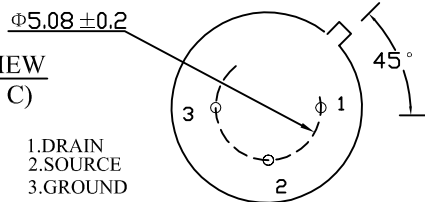
TOP VIEW
(FIGURE A)



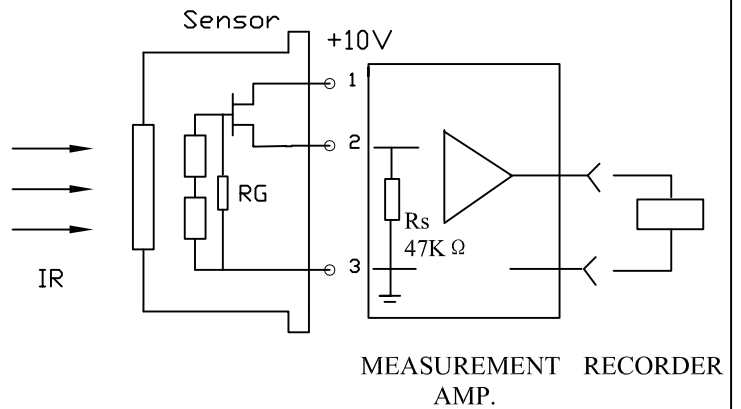
SIDE VIEW
(FIGURE B)



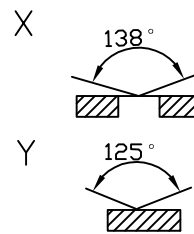
BASE VIEW
(FIGURE C)



CIRCUIT CONFIGURATION
(FIGURE D)



FIELD OF VIEW
(FIGURE I)



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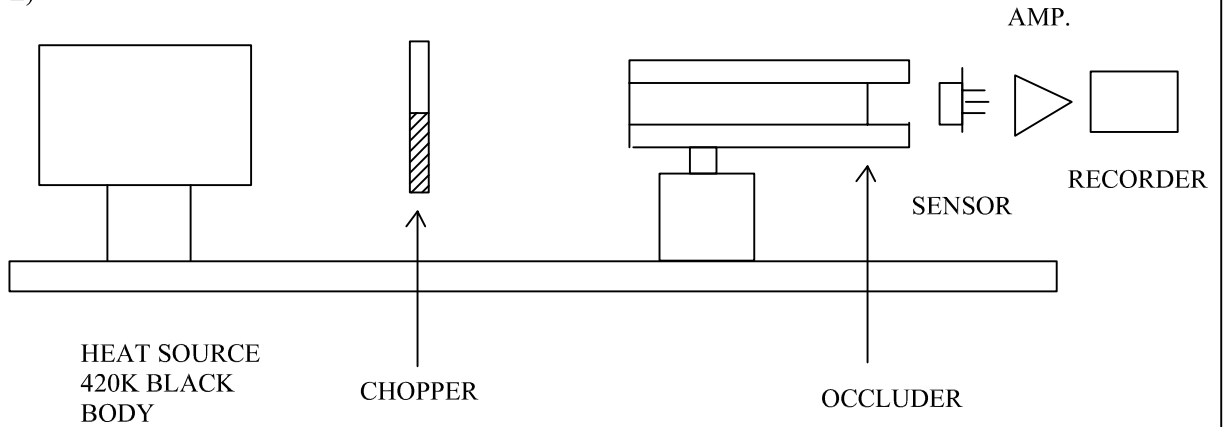
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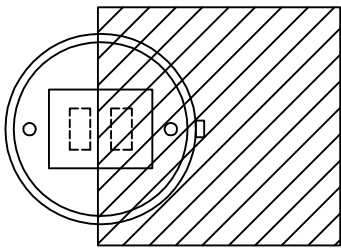
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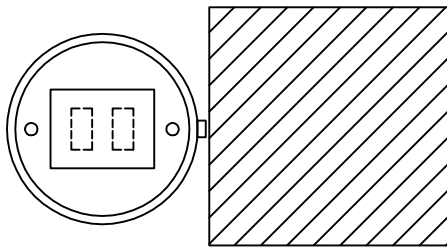
TEST DIAGRAM
(FIGURE E)



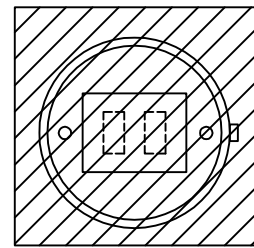
OCCLUDER POSITION



SIGNAL OUTPUT
(FIGURE F)



BALANCE OUTPUT
(FIGURE G)



NOISE OUTPUT
(FIGURE H)

TYPE: S300-A-P

PAGE: 6/6

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