

SPECIFICATION FOR APPROVAL

MODEL : S305-A-P

PYROELECTRIC INFRARED SENSOR

**CUSTOMER:
APPROVED BY:
DATE:**

TYPE: S305-A-P

PAGE: 1 /6

CHART:

EDITION: A

NICERA SENSOR CO.,LTD

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 (V _D =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: S305-A-P

PAGE: 2 / 6

CHART:

EDITION: A

NICERA SENSOR CO.,LTD

- | | |
|------------------------|---|
| (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 $5.0 \pm 0.5 \mu\text{m}$
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: S305-A-P	PAGE: 3 / 6	CHART:	EDITION: A
NICERA SENSOR CO.,LTD			

- 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: S305-A-P

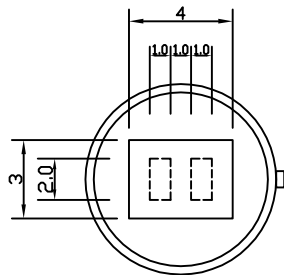
PAGE: 4 /6

CHART:

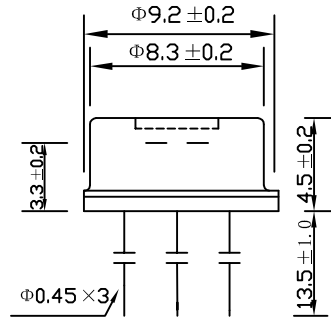
EDITION: A

NICERA SENSOR CO.,LTD

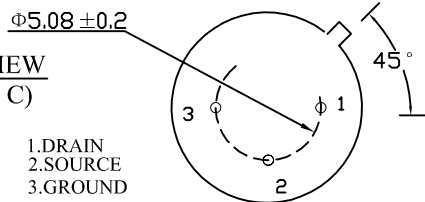
TOP VIEW
(FIGURE A)



SIDE VIEW
(FIGURE B)

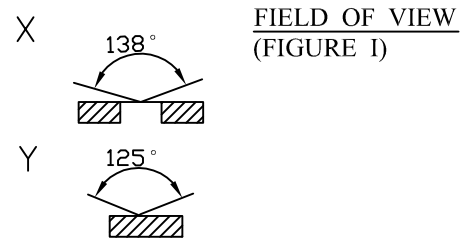
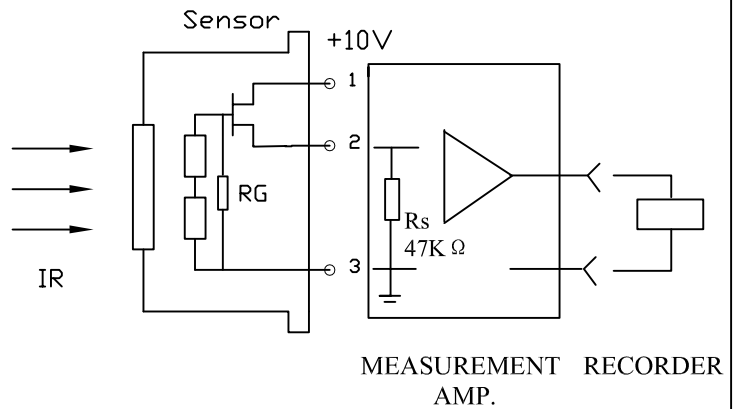


BASE VIEW
(FIGURE C)



- 1.DRAIN
- 2.SOURCE
- 3.GROUND

CIRCUIT CONFIGURATION
(FIGURE D)



TYPE: S305-A-P

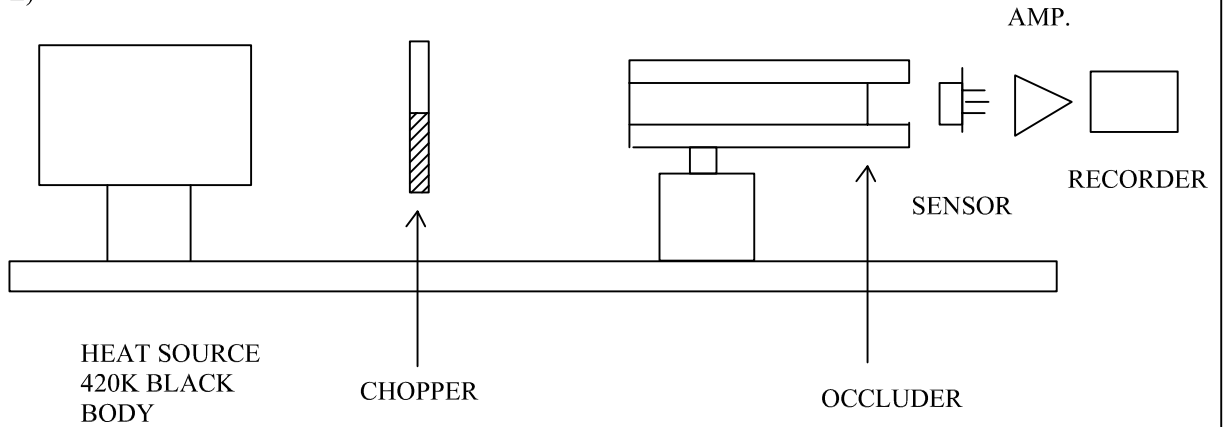
PAGE: 5/6

CHART:

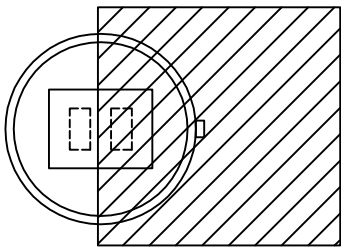
EDITION: A

NICERA SENSOR CO.,LTD

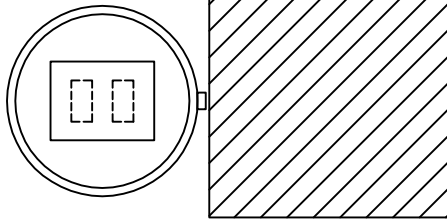
TEST DIAGRAM
(FIGURE E)



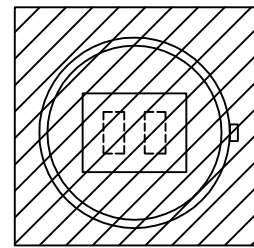
OCCLUDER POSITION



SIGNAL OUTPUT
(FIGURE F)



BALANCE OUTPUT
(FIGURE G)



NOISE OUTPUT
(FIGURE H)

TYPE: S305-A-P

PAGE: 6/6

CHART:

EDITION: A

NICERA SENSOR CO.,LTD