

SPECIFICATION FOR APPROVAL

MODEL : RE46BK-P

PYROELECTRIC INFRARED SENSOR

**CUSTOMER:
APPROVED BY:
DATE:**

TYPE: RE46BK-P

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CHART:

EDITION: A

NICERA SENSOR CO.,LTD

TYPE OF SENSOR

OMNI-DIRECTIONAL QUAD ELEMENTS
(RESISTANCE TO ELECTROMAGNETIC INTERFERENCE TYPE.)

PHYSICAL CONFIGURATION

- (1) PACKAGE TO-5 METAL CAN
SEE FIGURE A
- (2) SENSITIVE AREA $0.9 \times 0.9 \text{ mm}^2$
- (3) LEAD CONFIGURATION SEE FIGURE B,C

ELECTRICAL CHARACTERISTICS (AT $25 \pm 5^\circ\text{C}$)

- (1) CIRCUIT CONFIGURATION SEE FIGURE D
- (2) SUPPLY VOLTAGE $2.2 \sim 15 \text{ V DC}$ (Drain-Ground)
(R_s : $47\text{K } \Omega$)
- (3) OFFSET VOLTAGE $0.4 \sim 1.5 \text{ V}$
TYP 0.8 V ($V_D=10\text{V}$, $R_s=47\text{K } \Omega$)
- (4) SIGNAL OUTPUT
Min 3.5 Vp-p
TYP 5.1 Vp-p (Source-Ground)
(BLACK BODY 420K ; CHOPPER
FREQUENCY 1Hz : MEASUREMENT
AMP. $0.3 \sim 3.0\text{Hz}$, 72.5db (AT 1Hz))
SEE FIGURE F
- (5) SENSITIVITY 420K , 1Hz 5500 V/W
- (6) DETECTIVITY (420K , 1Hz , 1Hz) $1.2 \times 10^8 \text{ cmHz}^{1/2}/\text{W}$
- (7) BALANCE OUTPUT
Max 15% (Source-Ground)
(BLACK BODY 420K ; CHOPPER
FREQUENCY 1Hz : MEASUREMENT
AMP. $0.3 \sim 3.0\text{Hz}$, 72.5db (AT 1Hz))
SEE FIGURE G
 $|SA-SB|/|SA+SB|$

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- | | |
|------------------------|--|
| (8) NOISE OUTPUT | Max 200mV
TYP 110 mV (Source-Ground)
(MEASUREMENT AMP. 0.3~3.0Hz、
72.5db(AT 1Hz))
SEE FIGURE H |
| (9) NEP (420K,1Hz,1Hz) | 1.1×10^{-9} W |

OPTICAL CHARACTERISTICS

- | | |
|-----------------------|--|
| (1) FIELD OF VIEW | X Y 132°×132° ; 45° 146°
SEE FIGURE I |
| (2) SPECTRAL RESPONSE | Si Filter 5.0~14 μ m |

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.

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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 ELECTRICITY OR STRONG ELECTROMAGNETIC WAVES. RECOMMENDED TO WEAR A SHIELD RING.

WASHING-----

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

4. HANDLING AND STORAGE RESTRICTIONS/PRECAUTIONS

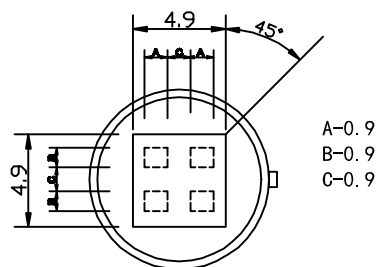
TO PREVENT SENSOR MALFUNCTIONS, OPERATIONAL FAILURE. APPEARANCE DAMAGE OR ANY DETERIORATION OF ITS CHARACTERISTICS. DO NOT EXPOSE THIS SENSOR TO THE FOLLOWING OR SIMILAR, HANDLING AND STORAGE CONDITIONS.

- A. VIBRATION FOR A LONG TIME.
- B. STRONG SHOCK.
- C. STATIC ELECTRICITY OR 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.

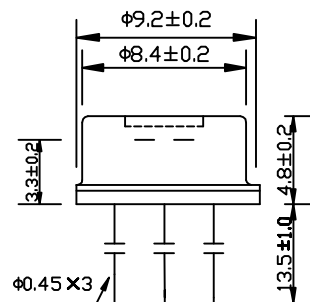
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**TOP VIEW
(FIGURE A)**

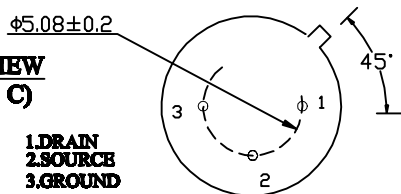


A-0.9
B-0.9
C-0.9

**SIDE VIEW
(FIGURE B)**

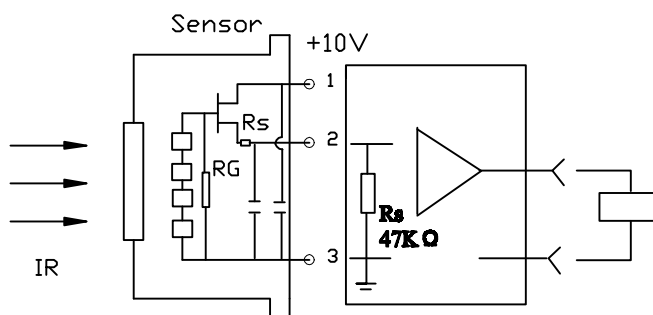


**BASE VIEW
(FIGURE C)**



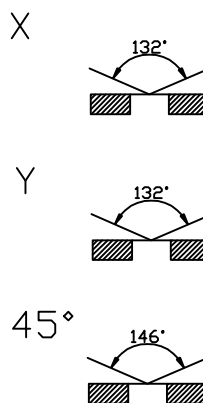
1.DRAIN
2.SOURCE
3.GROUND

**CIRCUIT CONFIGURATION
(FIGURE D)**



**MEASUREMENT RECORDER
AMP.**

**FIELD OF VIEW
(FIGURE I)**



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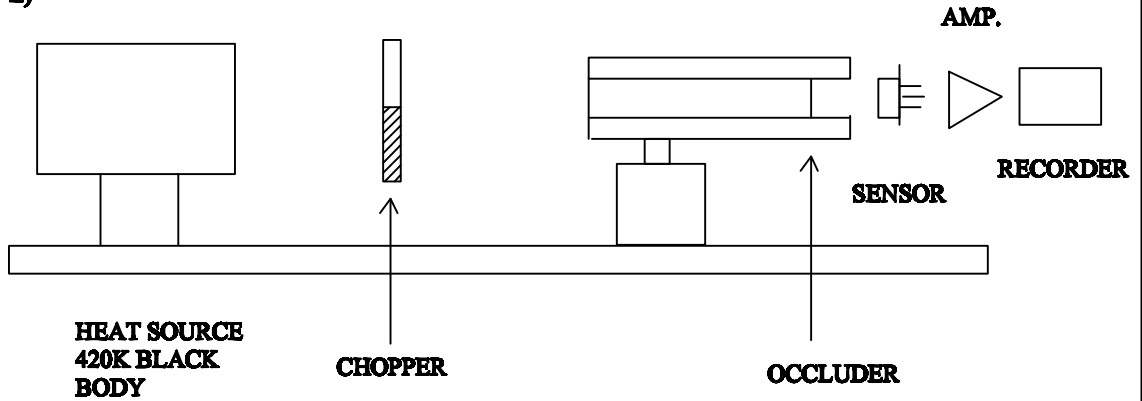
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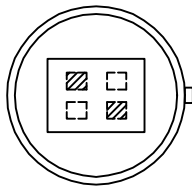
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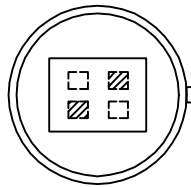
**TEST DIAGRAM
(FIGURE E)**



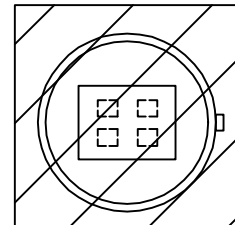
OCCLUDER POSITION



**SIGNAL A OUTPUT
(FIGURE F)**



**SIGNAL B OUTPUT
(FIGURE G)**



**NOISE OUTPUT
(FIGURE H)**

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