SPECIFICATION FOR APPROVAL

MODEL : NAT80A-2-P

PYROELECTRIC INFRARED SENSOR

CUSTOMER:
APPROVED BY:
DATE:

TYPE OF SENSOR

OMNI-DIRECTIONAL QUAD ELEMENTS

PHYSICAL CONFIGURATION

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

ELECTRICAL CHARACTERISTICS (AT 25±5℃)

(1)	CIRCUIT CONFIGURATION	SEE FIGURE D
(2)	SUPPLY VOLTAGE	2.2～15 V DC (Drain-Ground) (Rs：47KΩ)
(3)	OFFSET VOLTAGE	0.4～1.5 V TYP 0.7 V (V_D=10V, Rs=47KΩ)
(4)	SIGNAL OUTPUT	Min 3.5 Vp-p TYP 5.5 Vp-p (Source-Ground) (BLACK BODY 420K；CHOPPER FREQUENCY 1Hz：MEASUREMENT AMP. 0.3～3.0Hz、 72.5db(AT 1Hz)) SEE FIGURE F
(5)	SENSITIBITY 420K, 1Hz	4860 V/W
(6)	DETECTIVITY (420K,1Hz,1Hz)	1.7×10^{8} $cmHz^{1/2}/W$
(7)	BALANCE OUTPUT	Max 15％ (Source-Ground) (BLACK BODY 420K；CHOPPER FREQUENCY 1Hz：MEASUREMENT AMP. 0.3～3.0Hz、 72.5db(AT 1Hz)) SEE FIGURE G |SA-SB|/|SA+SB|

NOISE OUTPUT	Max	200mV
		TYP 100 mV (Source-Ground)
		(MEASUREMENT AMP. 0.3～3.0Hz、72.5db(AT 1Hz))
		SEE FIGURE H
(9) NEP (420K,1Hz,1Hz)		8.7×10^{-10} W

OPTICAL CHARACTERISTICS

(1) FIELD OF VIEW	X Y 132°×132° ; 45° 146°
	SEE FIGURE I
(2) SPECTRAL RESPONSE	Si Filter Cuton WL 5.0±0.5μm
	Thickness 0.5mm
	Average T>80%
	Pass Band 6.0～14μm

ENVIRONMENTAL REQUIREMENTS

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

※ **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.

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. 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.

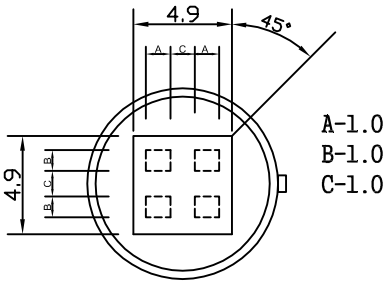
4.HANDLING AND STORAGE RESTRICTIONS/PRECAUTIONS

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.

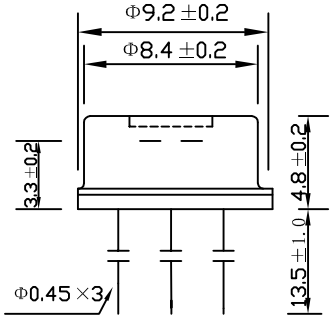
A. VIBRATION FOR A LONG TIME.
B. STRONG SHOCK.
C. STATIC ELECTRICITYOR STRONG ELECTROMAGNETIC WAVES.
D. HIGH TEMPERATURE AND HUMIDITY FOR A LONG TIME.
E. CORROSIVE GASES OR SEA BREEZE.
F. DIRTY AND DUSTY ENVIRONMENTS THAT MAY CONTAMINATE THE OPTICAL WINDOWS.

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

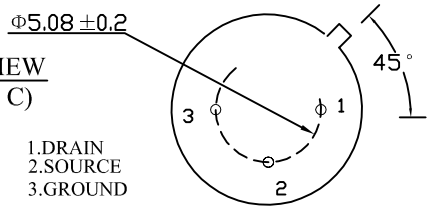
TOP VIEW
(FIGURE A)



SIDE VIEW
(FIGURE B)

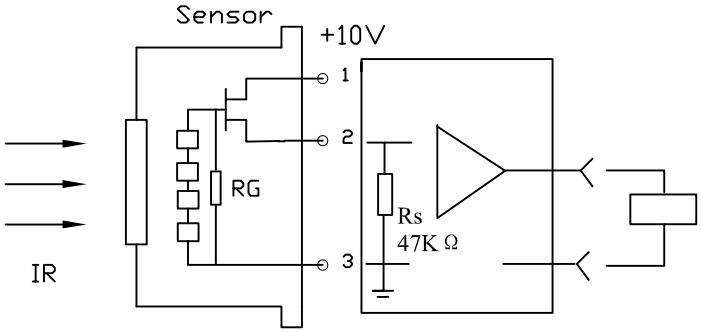


BASE VIEW
(FIGURE C)

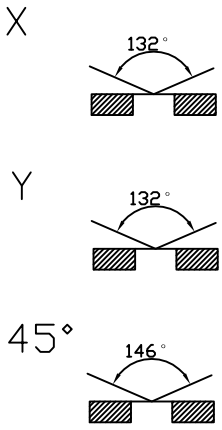


1.DRAIN
2.SOURCE
3.GROUND

CIRCUIT CONFIGURATION
(FIGURE D)



FIELD OF VIEW
(FIGURE I)



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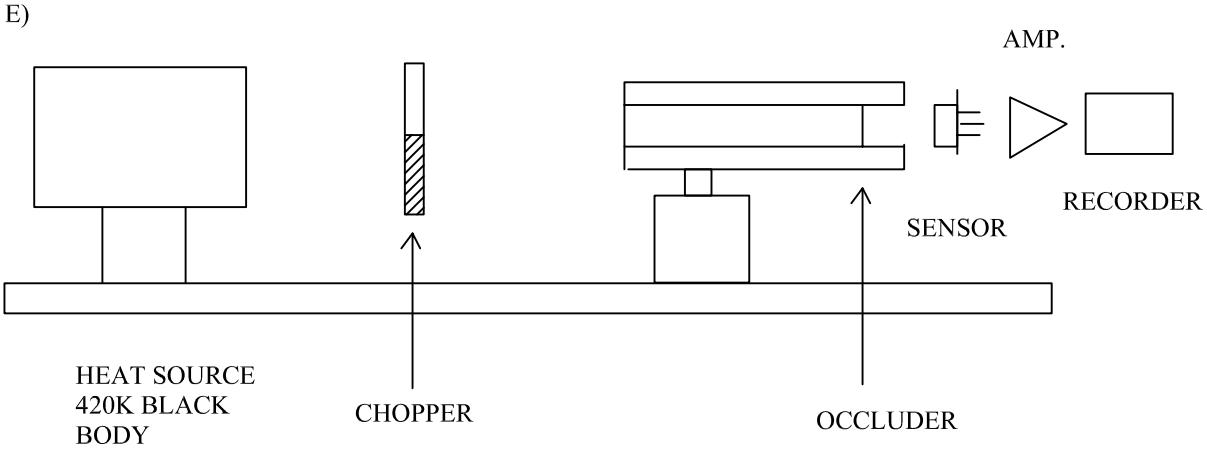
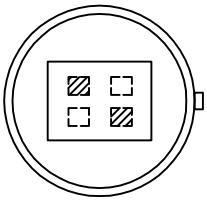
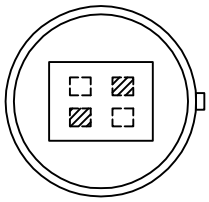
TEST DIAGRAM
(FIGURE E)



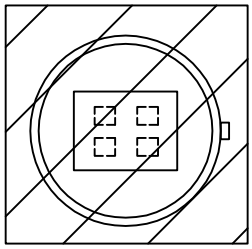
OCCLUDER POSITION



SIGNAL A OUTPUT
(FIGURE F)



SIGNAL B OUTPUT
(FIGURE G)



NOISE OUTPUT
(FIGURE H)

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