

**SPECIFICATION**

**APPROVAL**

ISSUED DATE : Aug. 08. 2006



DOCUMENT NO. : KPDC-PN-5-KSH-NW-01

CUSTOMER :

DESCRIPTION : PD ARRAY MODULE

MODEL NO. : PN-5-KSH-NW

**[ KODENSHI KOREA CORP. ]**

| ISSUE DEPT.   |        |   | BRD    |        | SBU    |        | QRA    |        |
|---|--------|---|--------|--------|--------|--------|--------|--------|
| ISSUE   | REVIEW | APPR'L  | REVIEW | APPR'L | REVIEW | APPR'L | REVIEW | APPR'L |
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**[ CUSTOMER APPROVAL ]**

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**[ REVISION ]**

| No. | DATE | REVISION ITEMS | ISSUED BY | APPR'D BY |
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## 1. Description

The PN-5-KSH-NW is photo-sensor produced in planar technology.

## 2. Features

Photo sensor bonded on PCB and protected by transparent epoxy.

Cost effective applications.

Customer design applications.

## 3. Applications

High speed optical encoders.

Encoders, Optical modules.

## 4. Outline View

Drawing No. : PN-5-KSH-NW-PKG-01

## 5. Absolute Maximum Ratings

(Ta = 25 °C)

| Parameter                 | Symbol | Ratings | Unit |
|---------------------------|--------|---------|------|
| Reverse Breakdown Voltage | BVR    | 30      | V    |
| Junction Temperature      | Tj     | 150     |      |

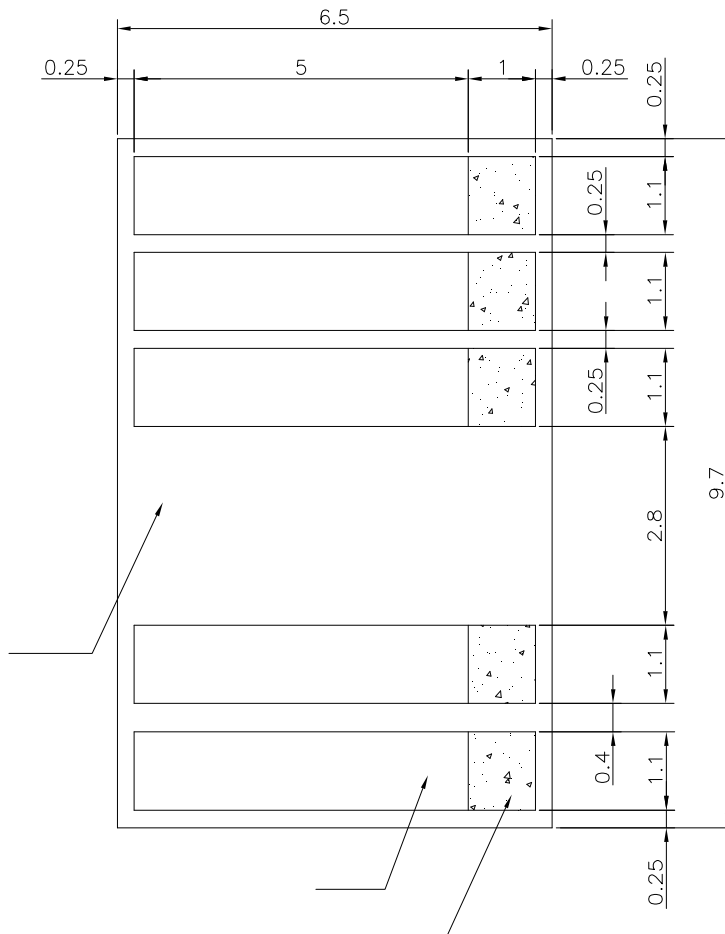
## 6. Electro - Optical Characteristics

(Ta = 25 °C)

| Parameter                  | Symbol | Min.               | Typ. | Max. | Unit            | Condition  |
|----------------------------|--------|--------------------|------|------|-----------------|------------|
| Chip Size(Chip Separate)   | -      | 6.5 × 9.7(5)       |      |      | mm              | -          |
| Active Area(Cell Separate) | -      | 5.5mm <sup>2</sup> |      |      | mm <sup>2</sup> | -          |
| Open Circuit Voltage       | Voc    | 0.3                | 0.35 | -    | V               | Ev=1000Lux |
| Short Circuit Current(*1)  | Isc    | 43                 | -    | -    | μA              |            |
| Dark Current               | Id     | -                  | -    | 0.5  | μA              | VR=5V      |
| Peak Emission Wavelength   | λp     | -                  | 890  | -    | nm              | IF = 100mA |
| Spectral Sensitivity       | ?      | 440                | -    | 1100 | nm              | -          |
| Temp. coefficient of Voc   | T      | -                  | -2.2 | -    | mV/             | -          |
| Temp. coefficient of Ish   | T      | -                  | 0.18 | -    | %/              | -          |

\*1. Parallellight of 1,000 lux illumination is applied by a tungsten lamp of 2856K.

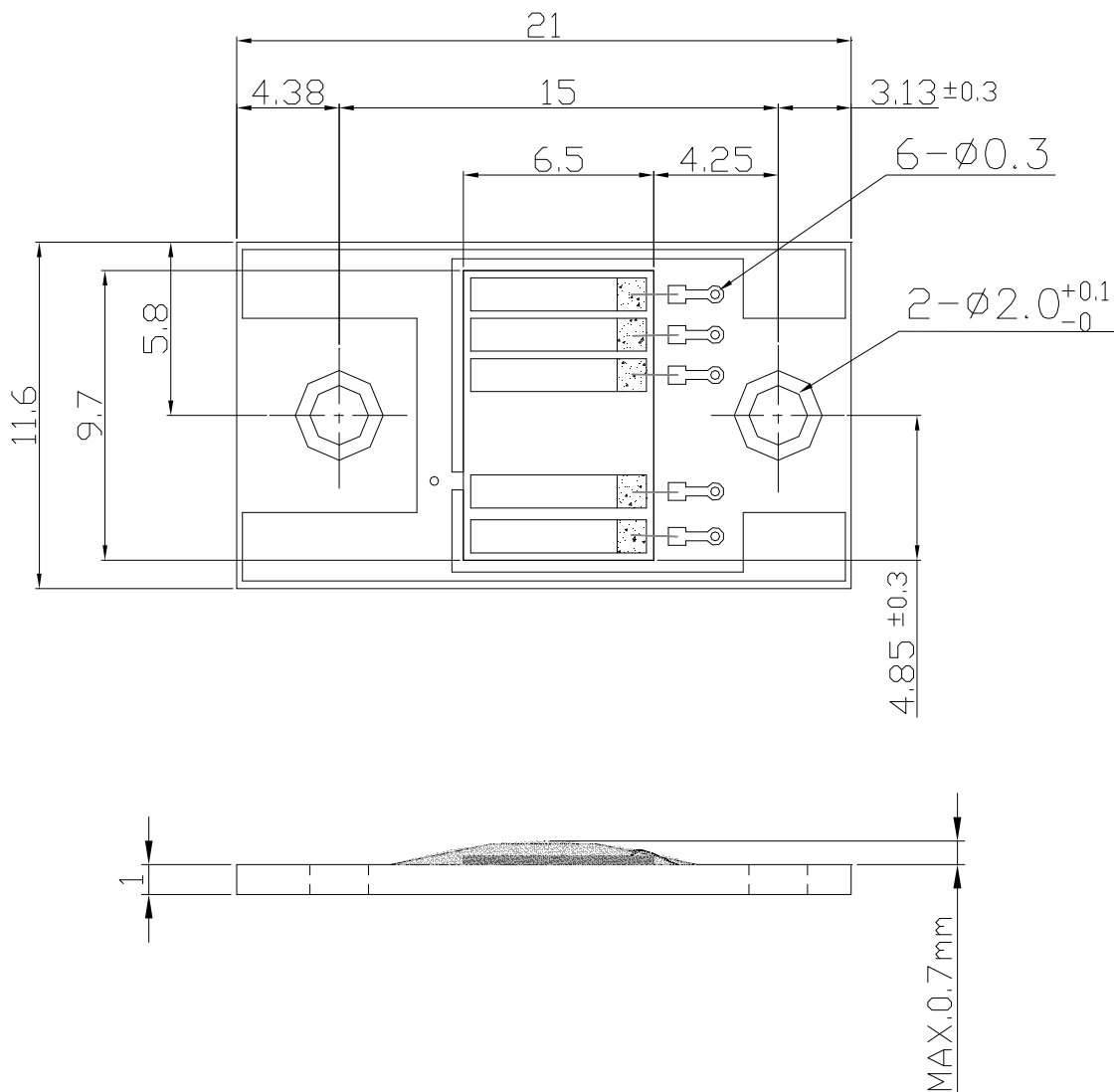
| Classification | Name | Photo Diode |          |      |      |      | GENERAL TOLERANCE(±) |       |      |      |     |     |     |
|----------------|------|-------------|----------|------|------|------|----------------------|-------|------|------|-----|-----|-----|
|                |      | MARK        | REVISION | DATE | NAME | SIGN | Dimension            | Grade | 0    | 1    | 2   | 3   | 4   |
|                |      |             |          |      |      |      | ~4 and below         | 0.065 | 0.05 | 0.08 | 0.1 | 0.2 | 0.5 |
|                |      |             |          |      |      |      | 4~16 and below       | 0.05  | 0.08 | 0.1  | 0.2 | 0.3 | 0.8 |
|                |      |             |          |      |      |      | 16~64 and below      | 0.08  | 0.1  | 0.2  | 0.3 | 0.5 | 1.2 |
|                |      |             |          |      |      |      | 63~250 and below     | 0.1   | 0.2  | 0.3  | 0.5 | 0.8 | 1.8 |



| NO.                            | DESCRIPTION  | MAT'L      | DIMENSION | REMARK    |
|--------------------------------|--------------|------------|-----------|-----------|
|                                | ISSUED DEPT. | Q'TY       | TITLE     |           |
| ISSUE                          | REVIEW       | REVIEW     | APPR'L    |           |
|                                |              |            |           |           |
|                                |              | UNIT       | mm        | 6.5 X 9.7 |
|                                |              | SCALE      | 10/1      |           |
| DRAW'N NO<br>KPD-6.5X9.7-PT-01 |              | REF DWG NO |           |           |

**KODENSHI**

| MARK | REVISION | DATE     | NAME     | SIGN     | GENERAL TOLERANCE(±) |      |      |      |     |     |     |
|------|----------|----------|----------|----------|----------------------|------|------|------|-----|-----|-----|
|      |          |          |          |          | Grade                | 0    | 1    | 2    | 3   | 4   | 5   |
| 0    |          | 06.08.08 | M. Hwang | M. Hwang | Dimension            | 0    | 0.05 | 0.08 | 0.1 | 0.2 | 0.5 |
|      |          |          |          |          | ~4 and below         | 0.05 | 0.08 | 0.1  | 0.2 | 0.5 | 1.2 |
|      |          |          |          |          | 4~16 and below       | 0.05 | 0.08 | 0.1  | 0.2 | 0.5 | 1.2 |
|      |          |          |          |          | 16~64 and below      | 0.05 | 0.1  | 0.2  | 0.3 | 0.5 | 1.2 |
|      |          |          |          |          | 63~250 and below     | 0.1  | 0.2  | 0.3  | 0.5 | 0.8 | 1.8 |



NOTES;

1. Al Wire :  $\phi 50\mu\text{m}$
2. Ag epoxy : 84-1LMISR4K
3. Epoxy resin : CEMEDINE1510
4. Package Thickness : MAX. 1.7mm

| PD ARRAY MODULE                |             |             |        |                                      |                 |  |        |
|--------------------------------|-------------|-------------|--------|--------------------------------------|-----------------|--|--------|
| NO                             | DESCRIPTION |             |        | MAT'L                                | DIMENSION       |  | REMARK |
| ISSUED DERT.                   |             |             |        | Q'TY                                 | TITLE           |  |        |
| ISSUE                          | REVIEW      | REVIEW      | APPR'L | UNIT                                 | PN-5-KSH-NW PKG |  |        |
|                                |             |             |        | SCALE                                | 5/1             |  |        |
| DRAWING NO.<br>PN-5-KSH-PKG-01 |             | REF DWG NO. |        | <b>KODENSHI</b> KODENSHI KOREA CORP. |                 |  |        |