

# SPECIFICATION FOR APPROVAL

## 承認書

Description : **Piezoelectric Diaphragm**

Kingstate Part No. : **KCOG1285NB10030A**

Customer's Model No. :

Specification No. : **DRO-S676**

Number Of The Edition : **1.1**

### CUSTOMER'S APPROVED SIGNATURE

志豐電子股份有限公司 KINGSTATE ELECTRONICS CORP.



**KINGSTATE**

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| Approved by | Checked by | Issued by                |
|-------------|------------|--------------------------|
|             |            | ZHUXIAOLEI<br>2026.03.17 |

RELEASE HISTORY 发行历史

| Revision | Version | Date       | Description | Remark     |
|----------|---------|------------|-------------|------------|
| 1        | 1.1     | 2026.03.17 | 初版發行        | ZHUXIAOLEI |
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Preliminary

## A. SCOPE 範疇

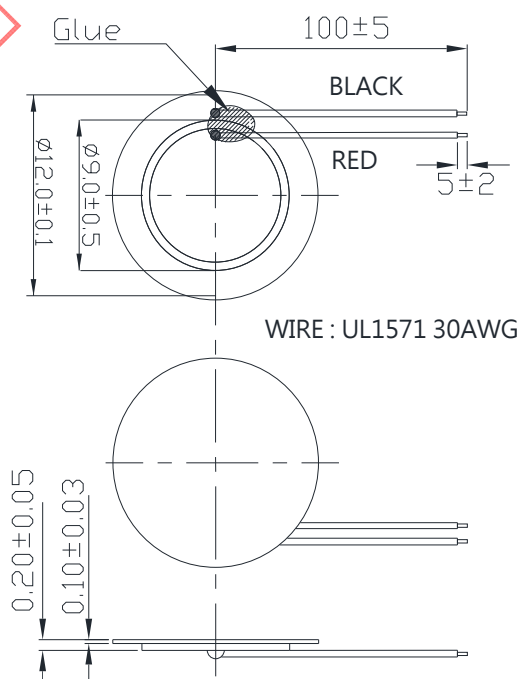
This specification applies piezoelectric diaphragm, **KCOG1285NB10030A**

此規格書適用於壓電式蜂鳴片, **KCOG1285NB10030A**

## B. SPECIFICATION 規格

| No. | Item                                        | Unit | Specification           | Condition                                                                                            |
|-----|---------------------------------------------|------|-------------------------|------------------------------------------------------------------------------------------------------|
| 1   | Max. input voltage<br>最大輸入電壓                | Vp-p | MAX.30                  |                                                                                                      |
| 2   | Resonant frequency<br>共振頻率                  | KHz  | $8.5 \pm 0.8$           | The resonant frequency is suitable only for piezo element without wire.<br>共振頻率僅適用於蜂鳴片不加線材時之量測       |
| 3   | Resonant impedance<br>共振阻抗                  | ohm  | MAX. 400                | The resonant resistance is suitable only for piezo element without wire.<br>共振阻抗僅適用於蜂鳴片不加線材時之量測      |
| 4   | Electrostatic capacity<br>靜電容量              | pF   | $13,000 \pm 35\%$       | at 120Hz/1V                                                                                          |
| 5   | Operating temp.<br>操作溫度                     | °C   | -30 ~ +70               |                                                                                                      |
| 6   | Storage temp.<br>儲存溫度                       | °C   | -30 ~ +70               |                                                                                                      |
| 7   | Dimension<br>尺寸                             | mm   | $\phi 12.0 \times H0.2$ |                                                                                                      |
| 8   | Piece weight/Out Box weight<br>單重 / 箱重      | gram | 0.3/5800                |                                                                                                      |
| 9   | Material<br>材質                              |      | BRASS                   |                                                                                                      |
| 10  | DC Resistance<br>直流電阻                       | MΩ   | MIN. 20                 | FLUKE 45 RATE: FAST<br>MEASUREMENT TIME: 1 Sec<br>(only for $\leq 20\text{mm}$ must be test)         |
| 11  | Environmental Protection Regulation<br>環保法規 |      | RoHS2.0                 | Piezo electronic device is exempted from RoHS2.0. Lead contain restriction.<br>電子陶瓷產品不受 RoHS2.0 條款規範 |

## C. APPEARANCE DRAWING 外觀尺寸圖



**Tol:  $\pm 0.5$  Unit: mm**

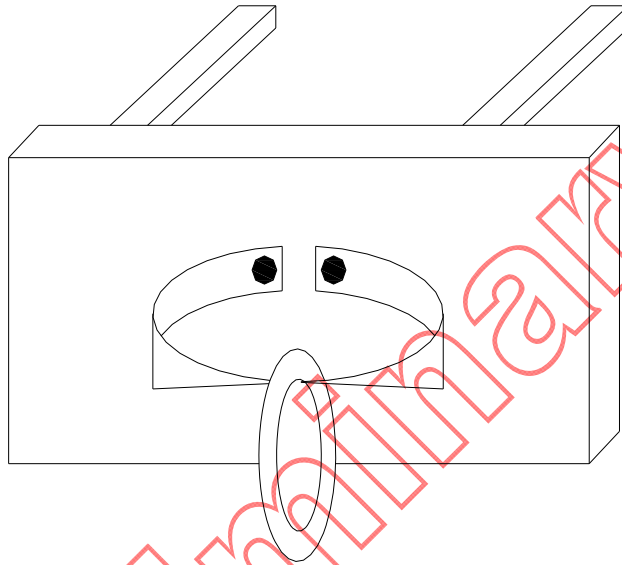
## D. MEASURING METHOD 測量方法

### 1. Resonant frequency / Resonant impedance 共振頻率/共振阻抗

Piezoelectric diaphragm shall be clamped at a node point as shown in following figure to be free from any mechanical stress, and measured its resonant frequency and resonant impedance by using vector impedance analyzer or equivalent.

When the input frequency is swept within 5KHz to 10KHz, the resonant frequency is defined the frequency where the impedance shows minimum value, and this impedance shall be the resonant impedance

將壓電式振動片之節點夾住,如下圖,在無任何機械壓力狀況下,以交流阻抗分析儀測量其共振頻率及共振阻抗.以掃頻的方式輸入 5KHz to 10KHz 頻率,共振頻率為阻抗最低的那一點,且此阻抗即共振阻抗.



### 2. Static capacitance 靜電容量

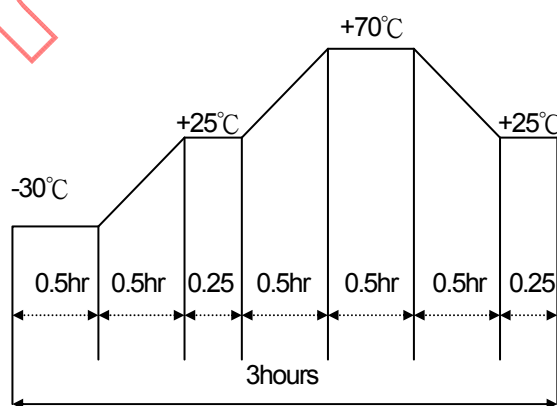
An electrostatic capacity capacitance shall be measured at 120Hz by using L.C.R. meter HP4194A(H.P.), or equivalent. The part shall be clamped in the same way as the measurement of resonant frequency/ resonant impedance mentioned in the above.

以 HP4194A 測量在 120Hz 時振動片的靜電容量.夾住振動片方式與上述測共振頻率及共振阻抗的夾法相同.

## E. MECHANICAL CHARACTERISTICS 機械特性

| No. | Item                                                       | Test Condition                                                                                                                                                                                                                  | Evaluation standard                                                                                                                                                                                                                                                      |
|-----|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Solderability<br>焊錫附著性<br>(Connector excepted)<br>端子類不適用此項 | Stripped wires of lead wires are immersed in rosin for 5 seconds and then immersed in solder bath of $+270\pm5^{\circ}\text{C}$ for $3\pm0.5$ seconds.<br>裸線部份浸入松香溶液 5 秒後,再浸入 $+270\pm5^{\circ}\text{C}$ 溶融焊錫槽 $3\pm0.5$ 秒。     | 90% min. stripped wires shall be wet with solder.(Except the edge of terminal)<br>浸入裸線部份附著焊錫 90% 以上.(末端斷面不算).                                                                                                                                                            |
| 2   | Lead Wire Pull Strength<br>線材拉力                            | The pull force shall be applied to double lead wire :<br>Horizontal 3.0N(0.306kg) for 30 seconds.<br>雙線材水平方向施以 3.0N(0.306kg)的力量,30 秒。                                                                                           | No damage and cutting off.<br>線材不鬆動,不脫落。                                                                                                                                                                                                                                 |
| 3   | Vibration<br>振動試驗                                          | Diaphragm shall be measured after being applied vibration of amplitude of 1.5mm with 10 to 55Hz band of vibration frequency to each of 3 per-pendicular directions for 2 hours.<br>振動週波數 10~55HZ、全振幅 1.5mm 於 X.Y.Z 3 個方向,各 2 小時 | The value of resonant frequency should be in $\pm 10\%$ , electrostatic capacity should be $\pm 20\%$ , which is compared with initial ones.<br>The resonant impedance should be 2000ohm max.<br>與試驗前相較,試驗後的共振頻率變化量須在 $\pm 10\%$ 內,靜電容量須在 $\pm 20\%$ 內,共振阻抗為 2000ohm 以下。 |

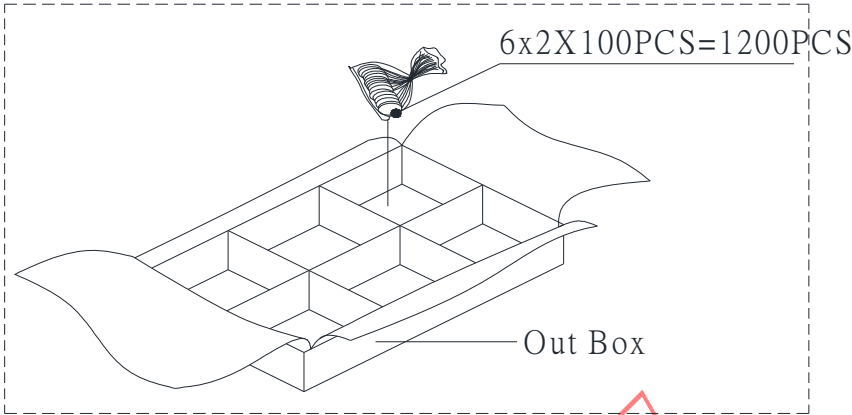
## F. ENVIRONMENT TEST 環境測試

| No. | Item                       | Test Condition                                                                                                                                                                              | Evaluation standard                                                                                                                                                                                                                                                                                                                                                                                    |
|-----|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | High temp. test<br>高溫測試    | After being placed in a chamber at $+70^{\circ}\text{C}$ for 240 hours<br>置於 $+70^{\circ}\text{C}$ 環境中 240 小時                                                                               | Being placed for 4 hours at $+25^{\circ}\text{C}$ , diaphragm shall be measured The value of resonant frequency should be in $\pm 10\%$ , electrostatic capacity should be $\pm 20\%$ , which is compared with initial ones.<br>The resonant impedance should be 2000 ohm max.<br>經測試後,靜置於 $+25^{\circ}\text{C}$ (室溫)環境中 4 小時後,與試驗前相較,試驗後的共振頻率變化量須在 $\pm 10\%$ 內,靜電容量須在 $\pm 20\%$ 內,共振阻抗為 2000ohm 以下。 |
| 2   | Low temp. test<br>低溫測試     | After being placed in a chamber with $-30^{\circ}\text{C}$ for 240 hours<br>置於 $-30^{\circ}\text{C}$ 環境中 240 小時                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3   | Humidity test<br>相對濕度測試    | After being placed in a chamber at $+40^{\circ}\text{C}$ and $90\pm 5\%$ relative humidity for 240 hours<br>置於 $+40^{\circ}\text{C}$ , 相對濕度 $90\pm 5\%$ 環境中 240 小時                          |                                                                                                                                                                                                                                                                                                                                                                                                        |
| 4   | Temp. cycle test<br>溫度循環試驗 | The part shall be subjected to 5 cycles. One cycle shall be consist of:<br>單體承受溫度循環測試 5 次,其循環內容如圖示:<br> |                                                                                                                                                                                                                                                                                                                                                                                                        |

### TEST CONDITION.

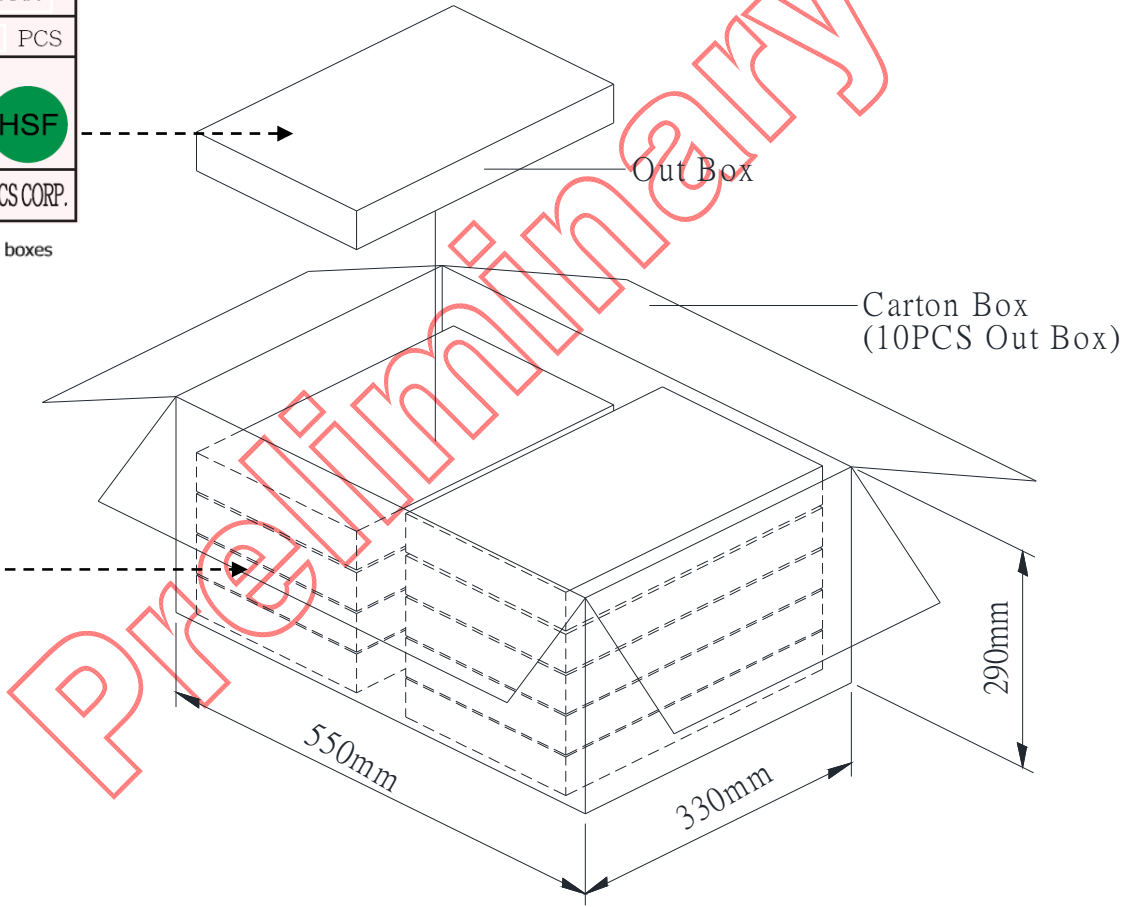
|                         |   |                                                |                      |                            |
|-------------------------|---|------------------------------------------------|----------------------|----------------------------|
| Standard Test Condition | : | a) Temperature : $+5 \sim +35^{\circ}\text{C}$ | b) Humidity : 45-85% | c) Pressure : 860-1060mbar |
| 一般測試條件                  | : | a) 溫度 : $+5 \sim +35^{\circ}\text{C}$          | b) 濕度 : 45-85%       | c) 氣壓 : 860-1060mbar       |
| Judgment Test Condition | : | a) Temperature : $+25 \pm 2^{\circ}\text{C}$   | b) Humidity : 60-70% | c) Pressure : 860-1060mbar |
| 爭議時測試條件                 | : | a) 溫度 : $+25 \pm 2^{\circ}\text{C}$            | b) 濕度 : 60-70%       | c) 氣壓 : 860-1060mbar       |

G. PACKING STANDARD 包裝規格



|                                                                                   |            |
|-----------------------------------------------------------------------------------|------------|
| Lot No.                                                                           | XXXXXXXXXX |
| Part No.                                                                          | XXXXXXXXXX |
| Quantity                                                                          | XXXX PCS   |
| Date:                                                                             | DD MM YY   |
|  |            |
|   |            |

\* The label sticked on inner boxes  
and the outer of carton.



|            |                   |                      |
|------------|-------------------|----------------------|
| Out Box    | 310mmx248mmx49mm  | 6x2X100PCS=1200PCS   |
| Carton Box | 550mmx330mmx290mm | 1200PCSX10=12,000PCS |