

# 規格承認書

PECIFICATION FOR APPROVAL

客 戶

CUSTOMER : \_\_\_\_\_

項 目

ITEM : 驻极体电容咪头 (ECM) \_\_\_\_\_

型 號

TYPE : GMI4015-2C30-66DB \_\_\_\_\_

描述

DESCRIPTION :  $\phi 4.0 \times H1.5 \text{ mm}$  焊点 双电容 -30-66dB 2.0V  $\leq 2.2K \Omega$  S/N:  $\geq 58 \text{ dBA}$

客戶料號

CUSTOMER NO. : \_\_\_\_\_

規 格 書 號

SPECIFICATION NO.: \_\_\_\_\_

版 本

EDITION NO. : V1.0 \_\_\_\_\_

日 期

DATE : \_\_\_\_\_

## 客戶承認

### CUSTOMER CONFIRM AND SIGN

| 檢查<br>TESTED BY | 審核<br>CHECKED BY | 承認<br>APPROVED BY |
|-----------------|------------------|-------------------|
|                 |                  |                   |

## 東莞市贏海電子有限公司

### DONGUAN INGHAI ELECTRONICS CO.,LTD

| 製作<br>ISSUED BY | 審查<br>CHECKED BY | 確認<br>APPROVED BY |
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## A. SCOPE

This specification applies electret condenser microphone, GMI4015-2C30-66DB

## B. SPECIFICATION

■ Test condition:  $R_L=2.2K\Omega$   $V_S=2.0V$   $TEMP=25^{\circ}C\pm 2^{\circ}C$  Related humidity= $65\pm 5\%$

| No. | Item                       | Symbol        | Unit        | Specification     | Condition                        |
|-----|----------------------------|---------------|-------------|-------------------|----------------------------------|
| 1   | Directivity                |               |             | Omnidirectional   |                                  |
| 2   | Sensitivity                | <b>S</b>      | dB          | -30-66 $\pm$ 3    | f=1KHz, 1Pa<br>0dB=1V/ Pa        |
| 3   | Standard operating voltage | <b>Vs</b>     | V           | 2.0               |                                  |
| 4   | Output impedance           | <b>Zout</b>   | K $\Omega$  | $\leq 2.2$        | f=1KHz, 1Pa                      |
| 5   | Frequency                  |               | Hz          | 100-10,000        |                                  |
| 6   | Max operating voltage      |               | V .         | 10                |                                  |
| 7   | Sensitivity reduction      | $\Delta S-Vs$ | dB          | -3                | f=1KHz, 1Pa<br>Vs=1.5VDC to 3VDC |
| 8   | Max. current consumption   | <b>IDSS</b>   | mA          | $\leq 0.5$        |                                  |
| 9   | Signal to noise ration     | <b>S/N</b>    | dBA         | $\geq 58$         | f=1KHz, P in=1Pa                 |
| 10  | Max input sound level      | <b>SPL</b>    | dB          | 110               |                                  |
| 11  | Operation temp.            |               | $^{\circ}C$ | -30 ~+70          |                                  |
| 12  | Storage temp.              |               | $^{\circ}C$ | -40 ~+80          |                                  |
| 13  | Dimension                  |               | mm          | $\phi$ 4.0 x H1.5 | See appearance drawing           |
| 14  | Terminal                   |               |             | Terminal          | See appearance drawing           |
| 15  | Approvals                  |               |             | RoHs FCC          |                                  |

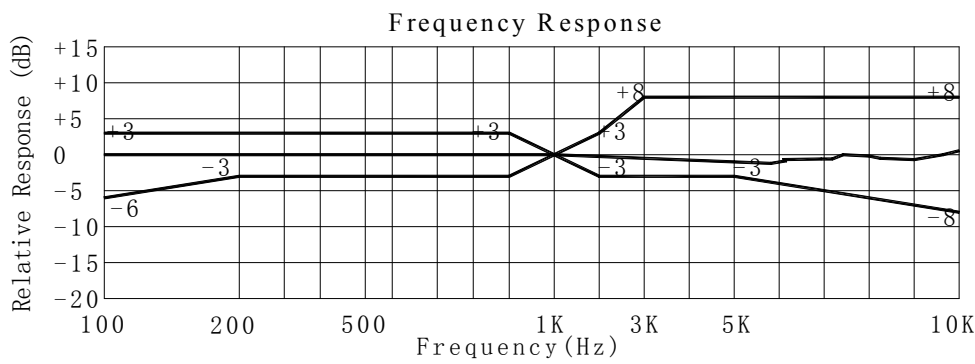
We use “Pascal(Pa)”indication of sensitivity as per the recommendation of I.E.C.(International Electro technical Commission)

TheSensitivity of “Pa” will increase 20dB comparing with “ubar” indication

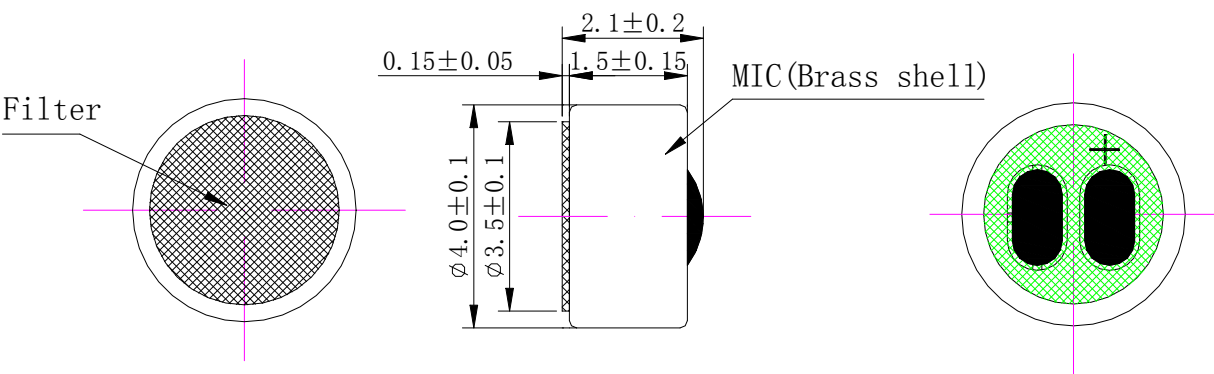
Example: -60dB(0dB=1V/ubar) =-40dB(1V/Pa)

C.TYPICAL FREQUENCY RESPONSE CURVE

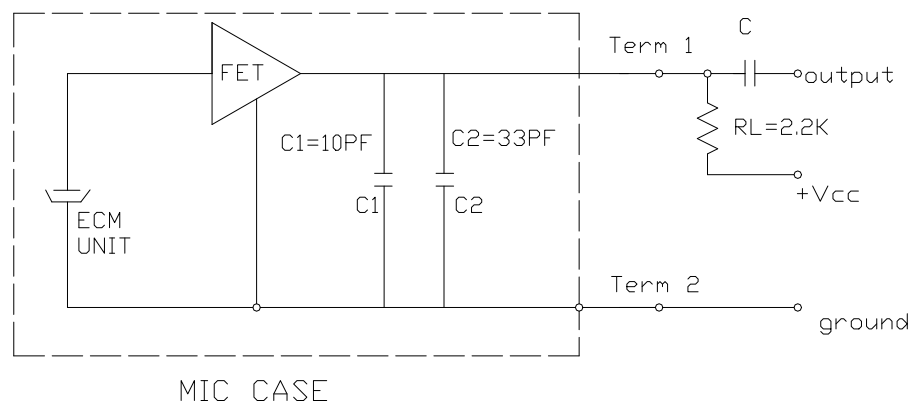
全指向性



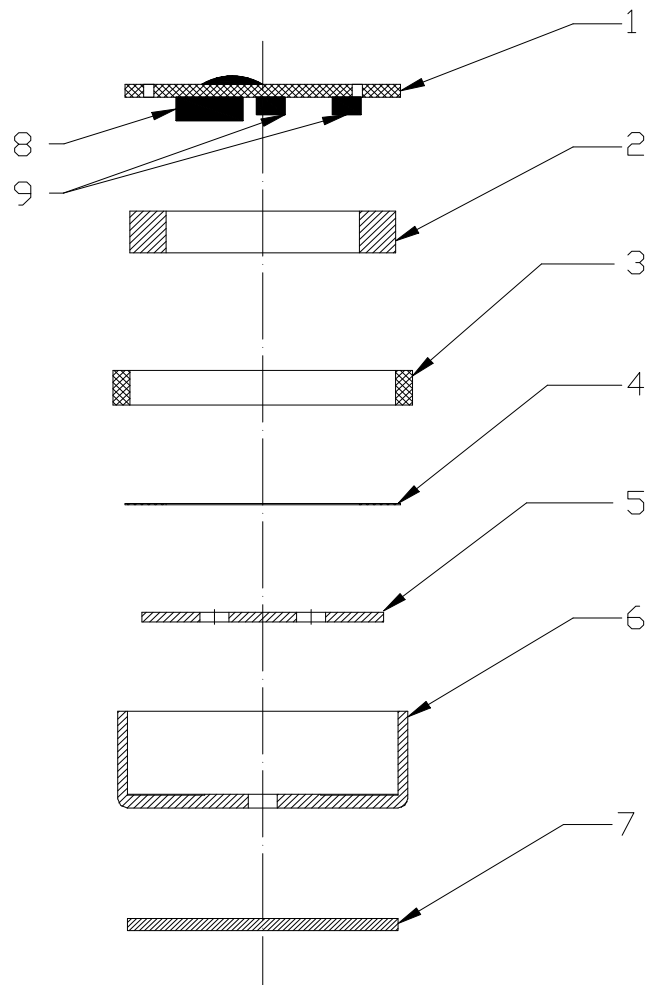
D. APPEARANCE DRAWING



E. MEASUREMENT CIRCUIT



## F: Explode Drawing



| NO. | PARTS                 |
|-----|-----------------------|
| 1   | PCB                   |
| 2   | Film (PPS)            |
| 3   | Holder                |
| 4   | Spacer                |
| 5   | Back plate (FEP)      |
| 6   | Outer most shell (Cu) |
| 7   | Protection fleece     |
| 8   | FET                   |
| 9   | Capacitance           |

|                                                                                                                                                                                                                                  |                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>G. 可靠性试验 Reliability Test</b>                                                                                                                                                                                                 |                                                                                                                                 |
| <p>经过以下所有试验在 20℃的条件下放置 3 小时后,麦克风的灵敏度与试验前比较变化在 3dB 以内</p> <p>After any following tests, the sensitivity of the microphone to be within <math>\pm 3\text{dB}</math> of initial sensitivity after 3hours of conditioning at 20℃</p> |                                                                                                                                 |
| 5-1 振动试验<br>Vibration                                                                                                                                                                                                            | 周波数 1/Frequency1:10Hz~55Hz<br>振幅/Amplitude:1.52mm<br>变化/Change of Frequency:1 octave/min<br>3 方向,各 2 小时/hours in each of 3 axes |
| 5-2 高温试验<br>Dry Heat                                                                                                                                                                                                             | +80 $\pm$ 5℃ for 96 hours                                                                                                       |
| 5-3 低温试验<br>Dry Cold                                                                                                                                                                                                             | -40 $\pm$ 5℃ for 96 hours                                                                                                       |
| 5-4 高温高湿试验<br>Damp Heat                                                                                                                                                                                                          | 90%~95%RH, +60 $\pm$ 5℃ for 96 hours                                                                                            |
| 5-5 温度循环试验<br>Temperature cycles                                                                                                                                                                                                 | -20℃ $\longleftrightarrow$ 25℃ $\longleftrightarrow$ 70℃<br>(2h) (1h) (2h) (1h) (2h) $\times$ 10 cycles                         |
| 5-6 跌落试验<br>Packing drop test                                                                                                                                                                                                    | Height:1m<br>顺序:三个面各跌 10 次<br>Procedure:10 times from each of 3 axes                                                            |
| 5-7 温度冲击试验<br>Temperature impact test                                                                                                                                                                                            | -20℃ $\longleftrightarrow$ 70℃<br>30min 30s 30min $\times$ 10 cycles                                                            |
| 5-8 静电冲击试验<br>Electrostatic shock test                                                                                                                                                                                           | 4000V(contact), 8000V(air) $\times$ 10 axes                                                                                     |
| 备注 Note                                                                                                                                                                                                                          |                                                                                                                                 |
| 6-1 工作温度范围<br>Operation Temperature                                                                                                                                                                                              | -30℃~70℃                                                                                                                        |
| 6-2 储存温度范围<br>Storage Temperature                                                                                                                                                                                                | -40℃~85℃                                                                                                                        |
| <b>H. 焊接条件 Soldering Condition</b>                                                                                                                                                                                               |                                                                                                                                 |
| 7-1 焊接使用 90W 的烙铁。<br>The soldering copper of a type of 90W shall be applied                                                                                                                                                      |                                                                                                                                 |
| 焊接条件<br>Soldering Condition.                                                                                                                                                                                                     |                                                                                                                                 |
| 7-2 电烙铁表面温度 320 $\pm$ 10℃<br>The temperature of the working surface of the soldering copper shall be 320 $\pm$ 10℃                                                                                                               |                                                                                                                                 |
| 7-3 焊接时把麦克风嵌入散热能力强的金属块内。                                                                                                                                                                                                         |                                                                                                                                 |

ECM shall be soldered fixed on the metal block(heat sink)which has the higher radiation effects said heat sink

Shall contact with of ECM.

7-4 焊接时间控制在 2~3 秒内。

time for each terminal shall be 2~3 sec.

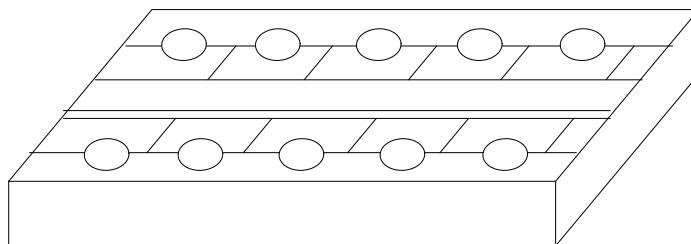
7-5 焊接后不能出现针孔。

The pinhole after soldering shall be avoided.

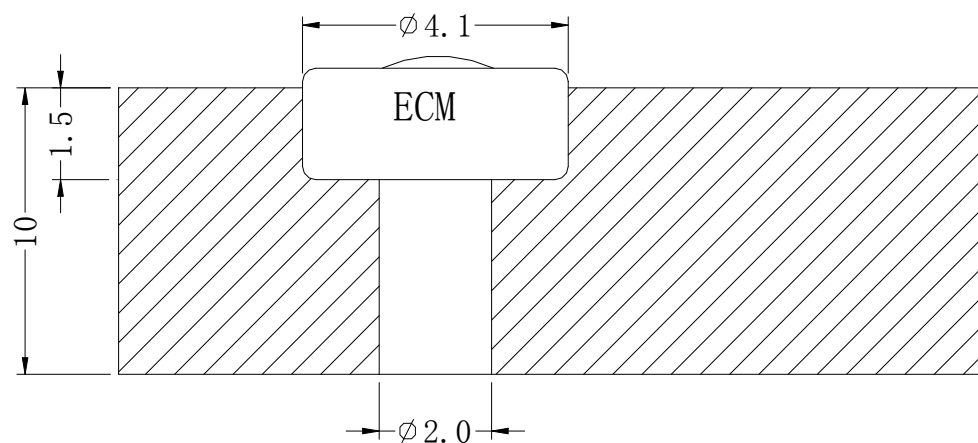
7-6 静电容易破坏麦克风必须采取措施避免（电烙铁接地，戴静电环等。）

ECM may easily destroyed by the static electricity and the countermeasure for eliminating the static electricity (the ground for soldering copper, for worktable and for human body) shall be executed.

7-7 散热板形状 Shape of heat sink



7-8 固定部孔形状 Shape of hole at fixed part



unit:mm