

# 規格承認書

PECIFICATION FOR APPROVAL

客戶  
CUSTOMER : 立創  
項目  
ITEM : 驻极体电容咪头 (ECM)  
型號  
TYPE : GMI4522P-2C46DB  
描述  
DESCRIPTION :  $\phi$  4.5 x H2.2 mm 插针 2.0V 1033 -46 dB  $\leq 2.2K\Omega$  S/N:  $\geq 58$  dBA  
客戶料號  
CUSTOMER NO. :  
規格書號  
SPECIFICATION NO. :  
版本  
EDITION NO. : V1.1  
日期  
DATE : 2020-1-9

## 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 |
|-----------------|------------------|-------------------|
| 周明              | 刘承成              |                   |

地址：廣東省東莞市

電話 / TEL: 0769-83060958 傳真 / FAX: 0769-81608993

網址: [HTTP://WWW.INGHAI.COM](http://WWW.INGHAI.COM)

## A. SCOPE

This specification applies electret condenser microphone, GMI4522P-2C46DB

## B. SPECIFICATION

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

| No. | Item                       | Symbol        | Unit        | Specification             | Condition                        |
|-----|----------------------------|---------------|-------------|---------------------------|----------------------------------|
| 1   | Directivity                |               |             | Omnidirectional           |                                  |
| 2   | Sensitivity                | <b>S</b>      | dB          | $-46\pm 3$                | 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 ~+85                  |                                  |
| 13  | Dimension                  |               | mm          | $\varphi 4.5 \times H2.2$ | See appearance drawing           |
| 14  | Terminal                   |               |             | Terminal                  | See appearance drawing           |
| 15  | Approvals                  |               |             | RoHs FCC                  |                                  |

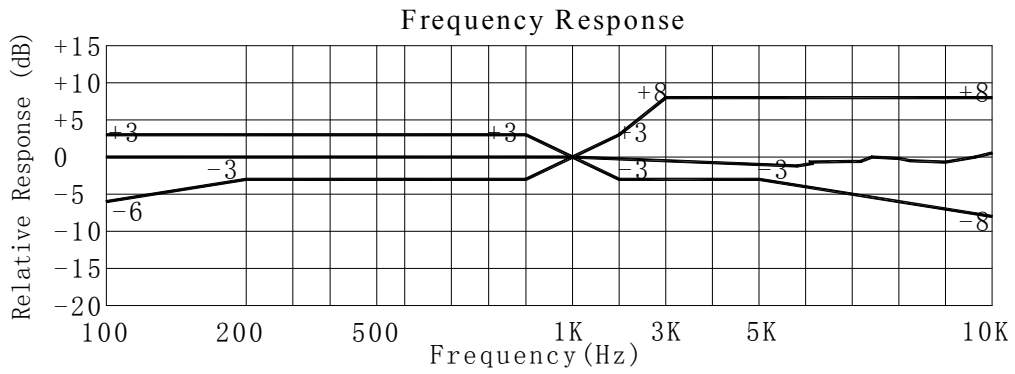
We use "Pascal(Pa)" indication of sensitivity as per the recommendation of I.E.C.(International Electro technical Commission)

The Sensitivity of "Pa" will increase 20dB comparing with "ubar" indication

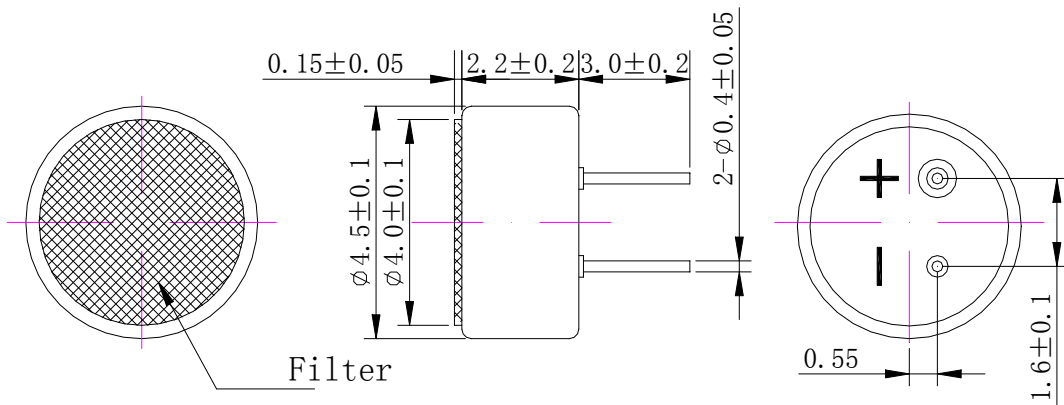
Example:  $-60dB(0dB=1V/ubar) = -40dB(1V/Pa)$

### C.TYPICAL FREQUENCY RESPONSE CURVE

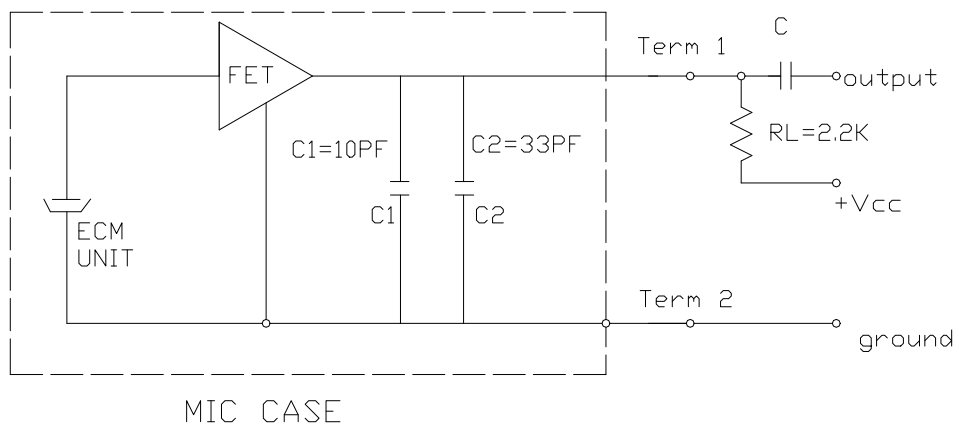
全指向性



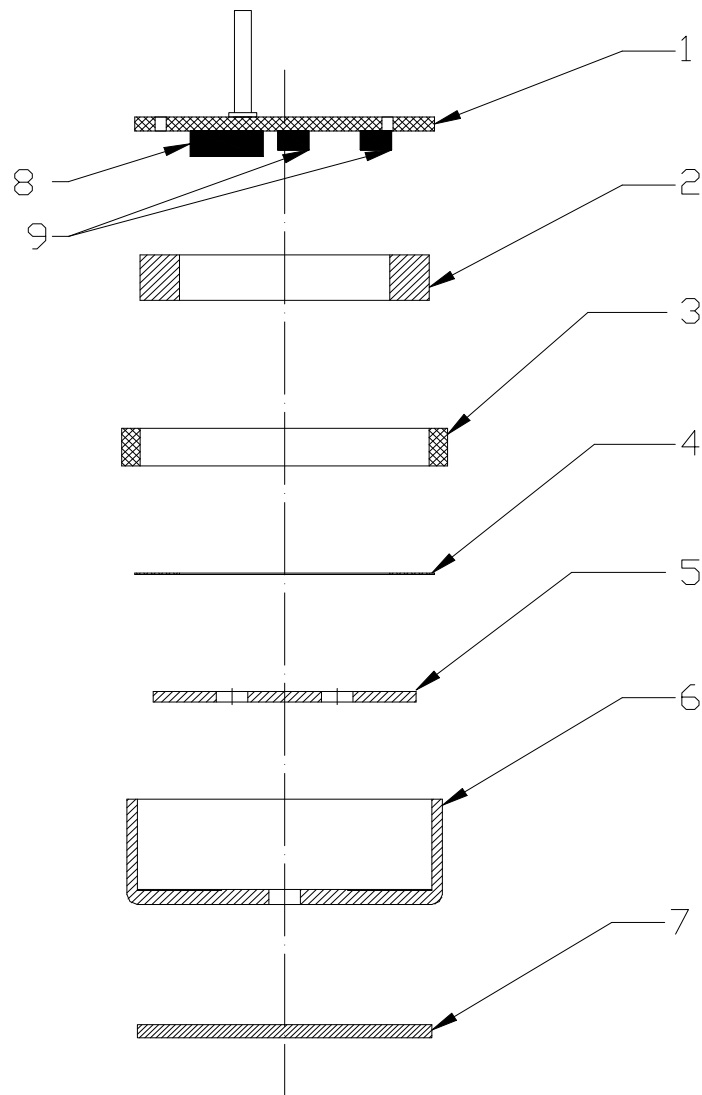
### D. APPEARANCE DRAWING



### 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(Al) |
| 7   | Protection fleece    |
| 8   | FET                  |
| 9   | Capacitance          |

## H. 可靠性试验 Reliability Test

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

After any following tests, the sensitivity of the microphone to be within  $\pm 3\text{dB}$  of initial sensitivity after 3hours of conditioning at 20℃

|                       |   |
|-----------------------|---|
| 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 | 6000V(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℃ |
|-----------------------------------|----------|

## G. 焊接条件

### Soldering Condition

7-1 焊接使用 90W 的烙铁。  
The soldering copper of a type of 90W shall be applied

焊接条件  
Soldering Condition.

7-2 电烙铁表面温度 320 $\pm$ 10℃  
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.

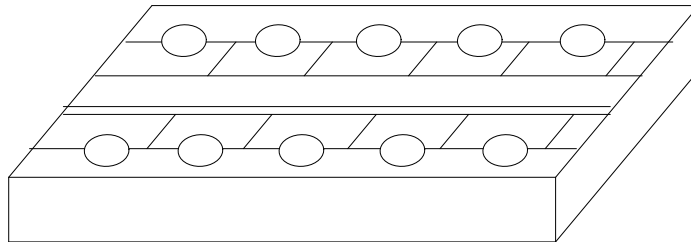
7-5 焊接后不能出现针孔。

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

