

MESSRS.

SPECIFICATION FOR APPROVAL**承 認 书**

Product	ELECTRET CONDENSER MICROPHONE
Part No.	HMB-O60F30-CWH9 (RoHS)
Customer Part No.	
Customer Approval	

Approved By	Checked By	Made By
王台平 MAY-17-2023	曹丽萍 MAY-17-2023	LILY MAY-17-2023

常 州 华 龙 电 子 有 限 公 司
DRAGONSTATE ELECTRONIC CORPORATION

中国江苏省常州市新区电子园新四路 36 号

Tel: +86-519-85110078. 86-519-85106698, Fax: +86-519-85101081

EDITION:1.1

1. 变更记录 (History change record)

Change Items	Date	Note	Drawn by	Checked by
	2023-05-17	First Issue	Lily	王台平 2023-05-17

2. 储藏与判断条件 (Storage And Judgement Conditions)

	Temperature Range(°C)	Rel. Humidity(%)	Static Pressure(kPa)
Judgement	19~21	60~70	86~106
Storage	-25~70	<75	
Operating	-25~70		

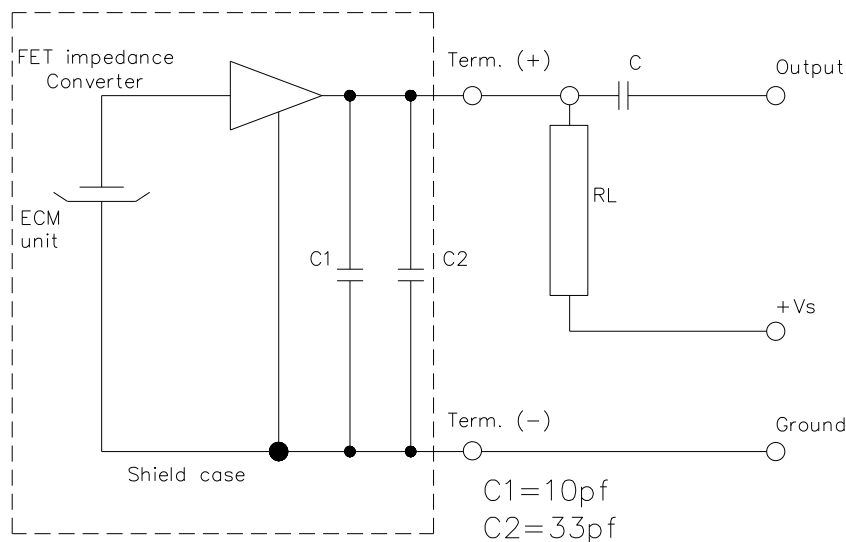
3. 规格 (Specifications)

Test conditions($V_S=2.0V$ $R_L=2.2k\Omega$ $Temp=20\pm2^\circ C$ $R.H=60\pm5\%$)

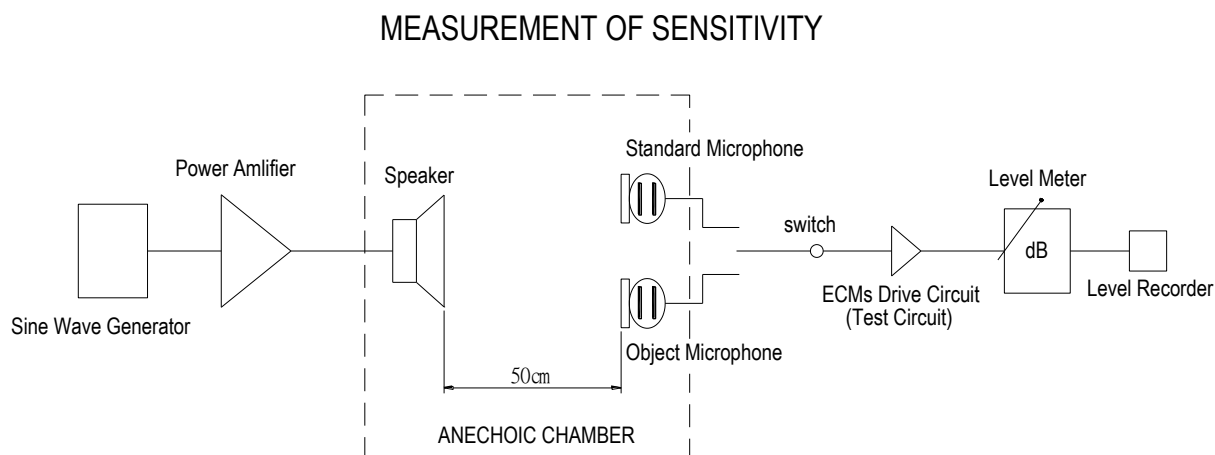
Item	Symbol	Test Conditions	Min	Standard	Max	Unit
灵敏度 Sensitivity	S	$f=1kHz, Pin=1Pa$	-33	-30	-27	dB ($0dB=1V/Pa$)
阻抗 Impedance	Z	$f=1kHz, Pin=1Pa$			2.2	$k\Omega$
指向性 Directivity	Omni-directional					
消耗电流 Current Consumption	I				400	μA
工作电压 Operation Voltage Range	U		1.0	2.0	10	V
信噪比 S/N Ratio	S/N(A)	$f=1kHz, Pin=1Pa$ A Curve		68		dB
降压特性 Decreasing Voltage Characteristic	ΔS	$f=1kHz, Pin=1Pa$ $V_S=2.0-1.5V$			-3	dB
最大输入声压级 Max.Input Sound Level	MISPL	$f=1kHz$ Distortion<3%			110	dB

4. 测试电路 (Standard Test Circuit)

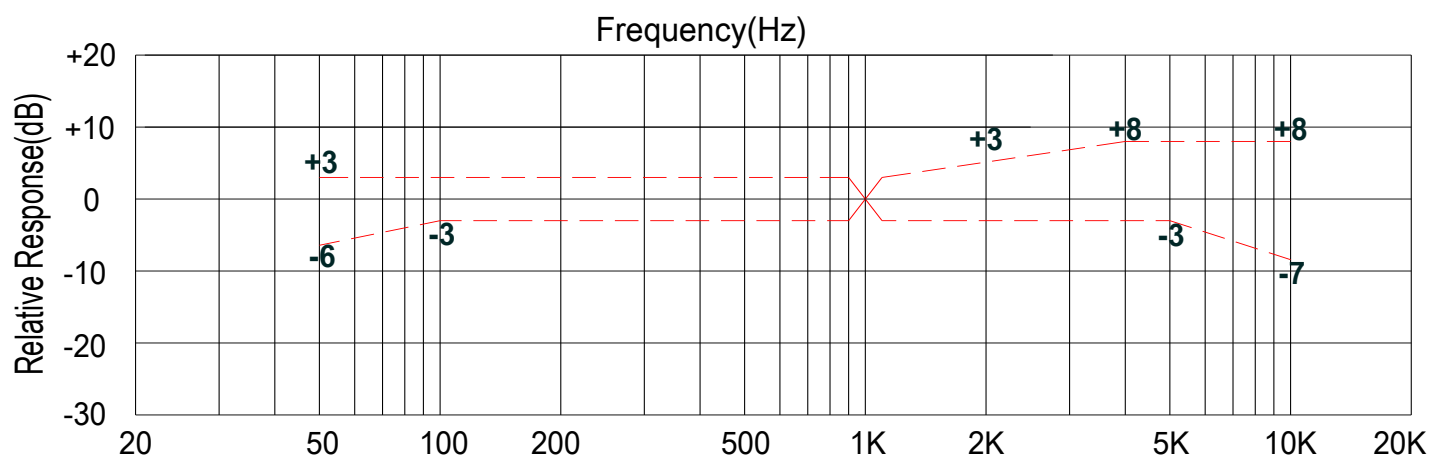
$V_S=2.0V$ $R_L=2.2k\Omega$ $Te=20^\circ C$ $R.H.=60\%$



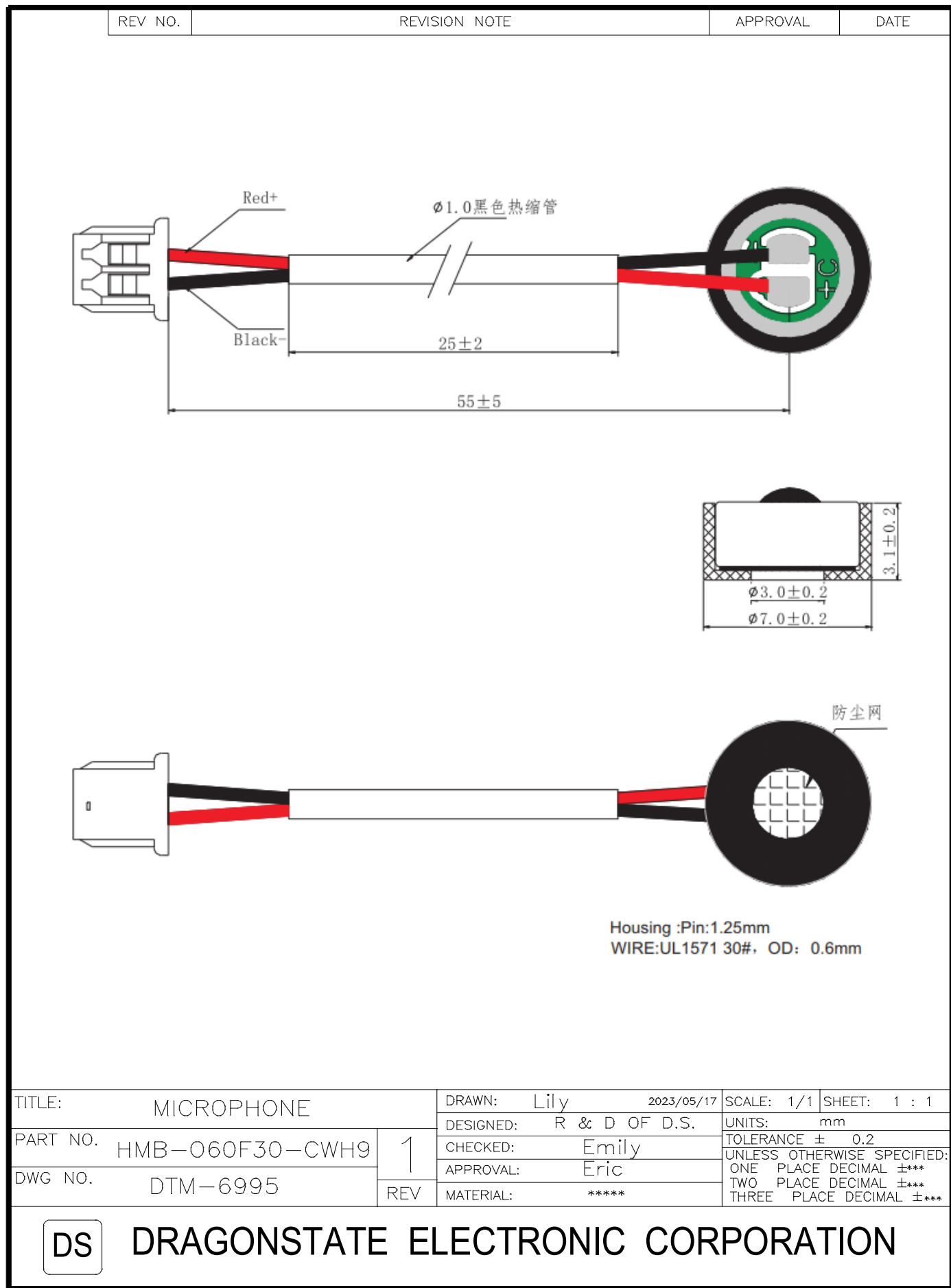
5. 测试装备图 (Standard Test Fixture)



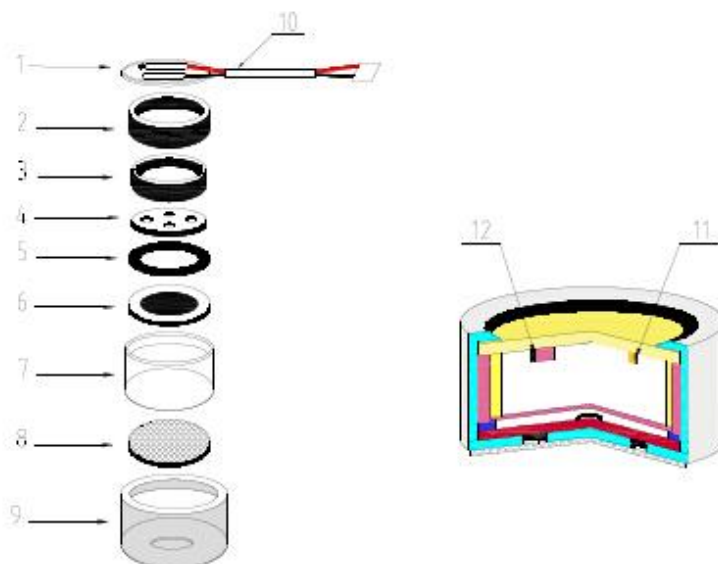
6 频响曲线 (Frequency Response Curve)



7,外观图 (Appearance Drawing)



8. 材料及结构清单 (List and Structure of Materials)



No. 序号	Part name 部件名称	Material Type 材料型号	Qty 数量	Origin 产地	Manufacture 协力厂商	Remarks 备注
1	PCB	Epoxy FR-4	1	Hongkong	Suzhou	
2	Cavity	POM	1	Japan	Suzhou	
3	Copper ring	Copper	1	China	Changzhou	
4	Back plate	H62 brass	1	China	Taicang	
5	Cushion plate	Mylar	1	China	Hebei	
6	Diaphragm	FEP 50A	1	Japan	Dongli	
7	Case	Magal	1	China	Shanghai	
8	Cloth	non-woven fabrics	1	Japan	Sanjing	
9	Rubber	RUB-164	1	China	Shandong	
10	Lead wire	LJQ-217	1	China	Suzhou	
11	Capacitor	33pF 0402	1	Japan	Murata	
12	FET	RJN1463-16	1	Korea	RFsemi	

9.可靠性试验 (Reliability Test)

在下列试验完成后,在温度为 20°C,相对湿度为 65%的条件下恢复 3 小时后进行测试,灵敏度与初始灵敏度相差在 $\pm 3\text{dB}$ 以内.

(All tests should be done after 3 hours of conditioning at 20°C, R.H65%, while the sensitivity is to be within $\pm 3\text{dB}$, from the initial sensitivity after the following experiments.)

9.1 高温试验 (HIGH TEMPERATURE TEST)

温度(High temperature):	+85°C
放置时间(Duration):	240hours

9.2 低温试验 (LOW TEMPERATURE TEST)

温度(Low temperature):	-40°C
放置时间(Duration):	240 hours

9.3 温度循环试验(如图 1) (TEMPERATURE CYCLE TEST)(See in Fig.1)

低温(Low temperature):	-40°C
高温(High temperature):	+80°C
转化时间(Changeover time):	10min
放置时间(Duration):	30min
次数(Cycle):	5

9.4 湿度 (STATIC HUMIDITY TEST)

温度(Temperature):	+60°C
相对湿度(Relative humidity):	90 ~ 95%

放置时间(Duration): 240 hours

9.5 振动试验 (VIBRATION TEST)

振幅(Amplitude): 1.52mm

持续时间(Duration): 1 分钟/面(minutes/plane)

频度范围(Freq.range): 10 ~ 55Hz

试验时间(Total time): 2 小时(hour)

9.6 跌落试验 (DROP TEST)

不带包装的跌落到 20mm 厚的地板上(Drop a unit unpacked onto a board of 20mm thick)

高度(Height): 1 m

次数(Cycle): 6 (1 each plane)

10. 焊接要求 (Regarding the Soldering operation)

每个驻极体电容传声器在其麦克风上都有一个 FET, 这种 FET 在过热和电流撞击时易损坏, 所以对于焊接应遵

循以下操作 :

- 要求使用 25W-35W 烙铁, 并保持 $350\pm 10^{\circ}\text{C}$ 的温度范围 .
- 在每一个端的焊接应在 2 秒内完成, 以防过热 .
- 禁止单体麦克风焊接 . (否则会影响驻极体电容传声器的灵敏度)
- 最理想的散热装置按以下设计.

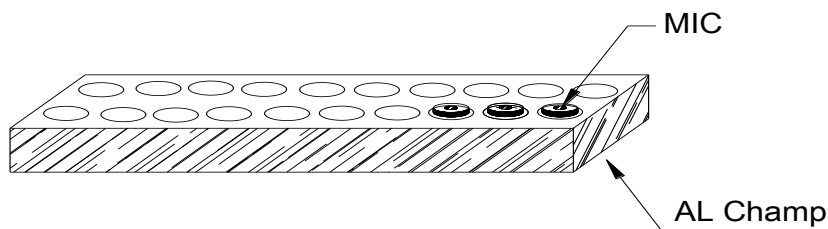
Every ECM contains a FET with microphone body.

This FET easy to damageable from excessive heat and electrical shock. Proper attention for the soldering work is required same as followings.

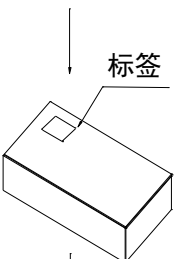
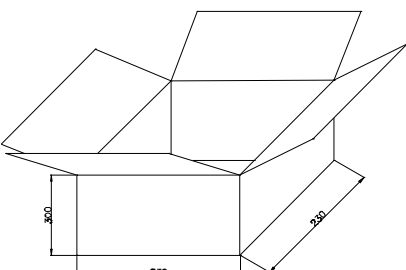
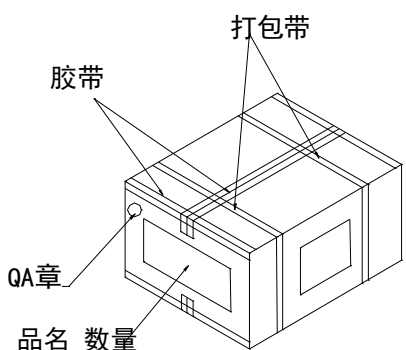
- Recommend to use 25W-35W ceramic soldering iron and apply $350\pm 10^{\circ}\text{C}$ temperature range
- Soldering should be accomplished within 2 seconds at each terminal so as not to be overheated.
- Do not make a cavity at the surface of lead lump on the PCB. wiring board.

(Opened cavity will influence to the sensitivity of ECM)

- Optimal design for heat sink pad is same as below.



11. 包装规格 (Packing Specifications)

REV NO.	REVISION NOTE	APPROVAL	DATE
	 Bag(138*112mm) 100pcs Material: Plastic		
	 标签 Middle(215*105*50mm) 1000pcs(10*100pcs) Material: Paper		
	 Outer Box(235*235*385mm) 10000pcs(10*1000pcs) Material: Paper		
	 打包带 胶带 QA章 品名 数量		
TITLE: 包装方式		DRAWN: Lily 2011/05/SCALE: 1:10 SHEET: 1 of 1	
PART NO.	1	DESIGNED: R & D of D.S.	UNITS: mm
DWG NO.		CHECKED: Emily	TOLERANCE ±5
	REV	APPROVAL: Eric	UNLESS OTHERWISE SPECIFIED: ONE PLACE DECIMAL ± *** TWO PLACE DECIMAL ± *** THREE PLACE DECIMAL ± ***
		MATERIAL: 纸类	
DS DRAGONSTATE ELECTRONIC CORPORATION			