

MESSRS.**SPECIFICATION FOR APPROVAL****承 認 书**

Product	ELECTRET CONDENSER MICROPHONE
Part No.	HMB-O40J44-CWH2 (RoHS)
Customer Part No.	
Customer Approval	MK1

Approved By	Checked By	Made By
王台平 MAY-23-2020	曹丽萍 MAY-23-2020	LILY MAY-23-2020

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EDITION:1.1

1. 变更记录 (History change record)

Change Items	Date	Note	Drawn by	Checked by
	2020-05-23	First Issue	Lily 2020-05-23	王台平 2020-05-23

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

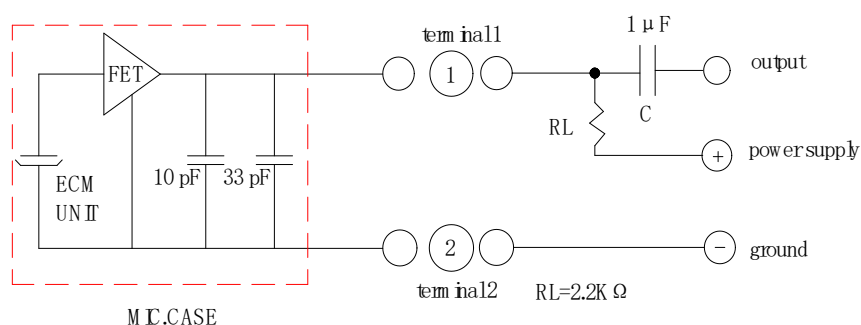
	Temperature Range(°C)	Rel. Humidity(%)	Static Pressure(kPa)
Judgement	19~21	60~70	86~106
Storage	-40~85	<75	
Operating	-25~70		

3. 规格 (Specifications)

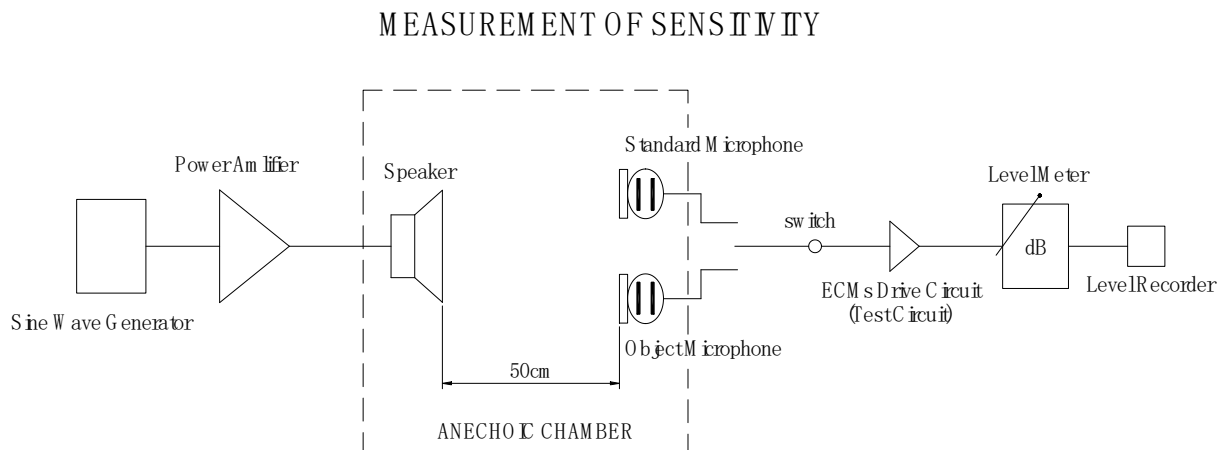
 Test conditions($V_s=2.0V$ $R_L=2.2k\Omega$ $Temp=20\pm 2^\circ C$ $R.H=60\pm 5\%$)

Item	Symbol	Test Conditions	Min	Standard	Max	Unit
灵敏度 Sensitivity	S	$f=1kHz, Pin=1Pa$	-47	-44	-41	dB (0dB=1V/Pa)
阻抗 Impedance	Z	$f=1kHz, Pin=1Pa$			2.2	k Ω
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	60			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<1%			110	dB
防尘和防水 Dustproof and Waterproof				IP67	(1m/30minutes)	

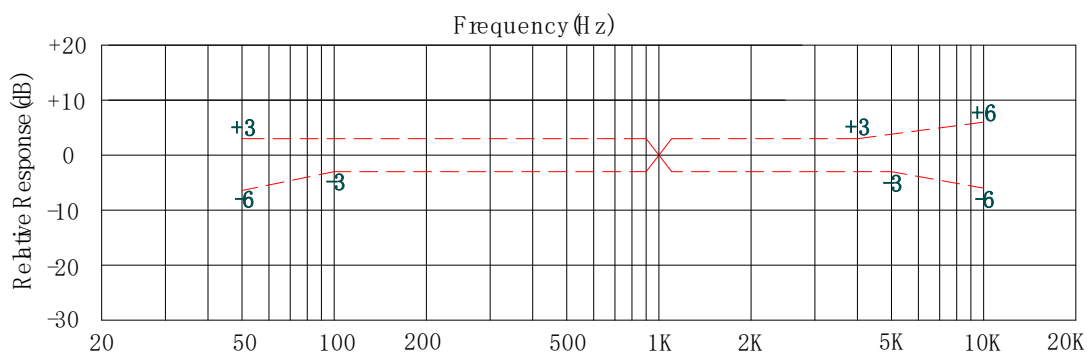
4. 测试电路 (Standard Test Circuit)

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


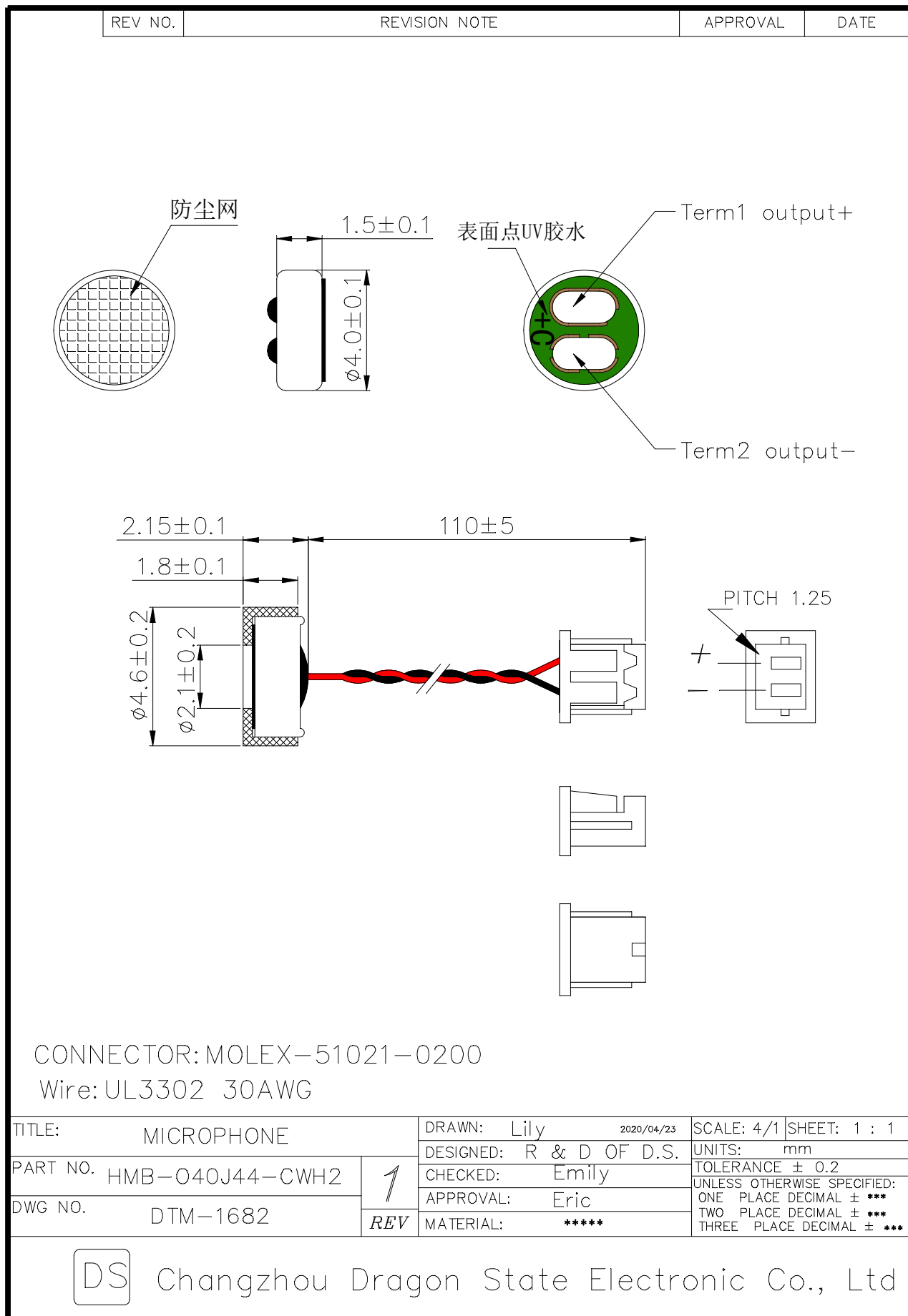
5. 测试装备图 (Standard Test Fixture)



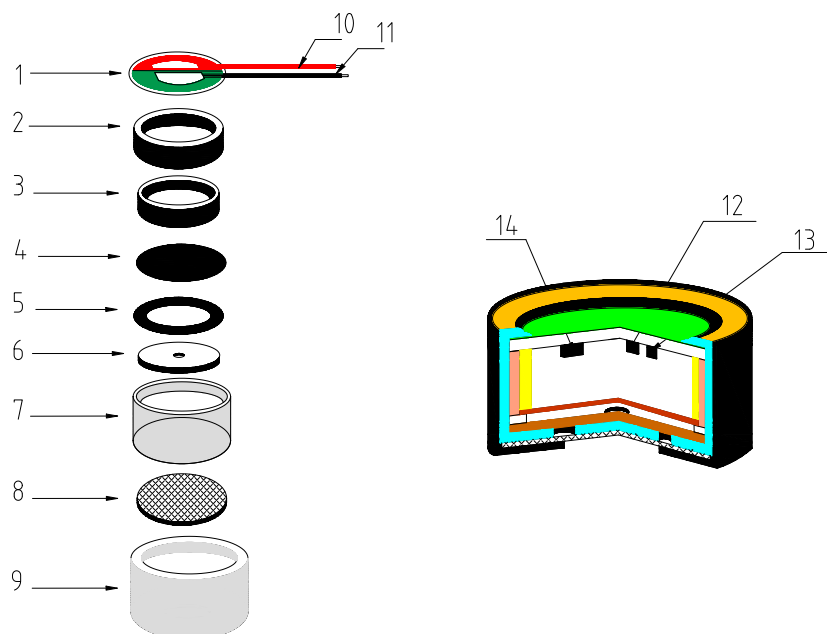
6 频响曲线 (Frequency Response Curve)



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	Diaphragm	PPS	1	Japan	Dongli	
5	Cushion plate	Mylar	1	China	Hebei	
6	Back plate	ALSET FC-CNZ	1	Korea	3A	
7	Case	Magal	1	China	Shanghai	
8	Cloth	FFC-015	1	Japan	Sanjing	
9	Rubber	RUB-001	1	China	Shandong	
10	Lead wire	UL3302 AWG 32	1	Japan	Sumitomo	Red+
11	Lead wire	UL3302 AWG 32	1	Japan	Sumitomo	Black-
12	Capacitor	10pF 0201	1	Japan	Murata	
13	Capacitor	33pF 0201	1	Japan	Murata	
14	FET	RJN2123C	1	Korea	RFsemi	

9.可靠性试验 (Reliability Test)

在下列试验完成后,在温度为 20℃,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±3dB 以内.

(All tests should be done after 3 hours of conditioning at 20℃, R.H65%, while the sensitivity is to be within ±3dB,from the initial sensitivity after the following experiments.)

9.1 高温试验 (HIGH TEMPERATURE TEST)

温度(High temperature):	+80℃
放置时间(Duration):	200hours

9.2 低温试验 (LOW TEMPERATURE TEST)

温度(Low temperature):	-40℃
放置时间(Duration):	200 hours

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

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

9.4 湿度 (STATICAL HUMIDITY TEST)

温度(Temperature):	+60℃
相对湿度(Relative humidity):	90~95%
放置时间(Duration):	200 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 hours

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)

9.7 防水试验 (PROTECTION AGAINST LIQUIDS)

深度(depth):	2 m
试验时间(Cycle):	1hour

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.

