

***MESSRS.***

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**SPECIFICATION FOR APPROVAL****承 认 书**

<b>Product</b>	<b>ELECTRET CONDENSER MICROPHONE</b>
<b>Part No.</b>	<b>HMB-O40J40-CWH38(RoHS)</b>
<b>Customer Part No.</b>	
<b>Customer Approval</b>	

<b>Approved By</b>	<b>Checked By</b>	<b>Made By</b>
王台平 OCT-21-2019	曹丽萍 OCT-21-2019	LILY OCT-21-2019

**常州华龙电子有限公司**  
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**1. 变更记录 (History change record)**

Change Items	Date	Note	Drawn by	Checked by
	2019-10-21	First Issue	Lily	王台平 2019-10-21

**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		
Operating	-25~70		

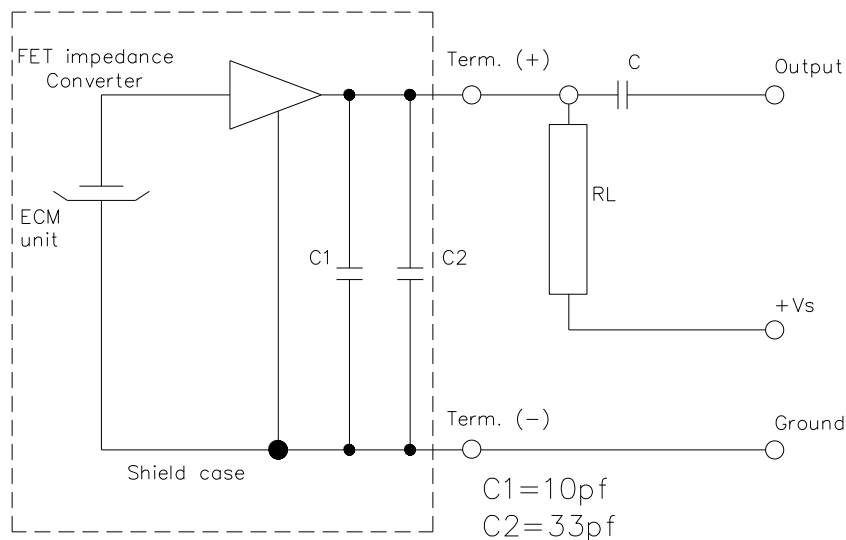
### 3. 规格 (Specifications)

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

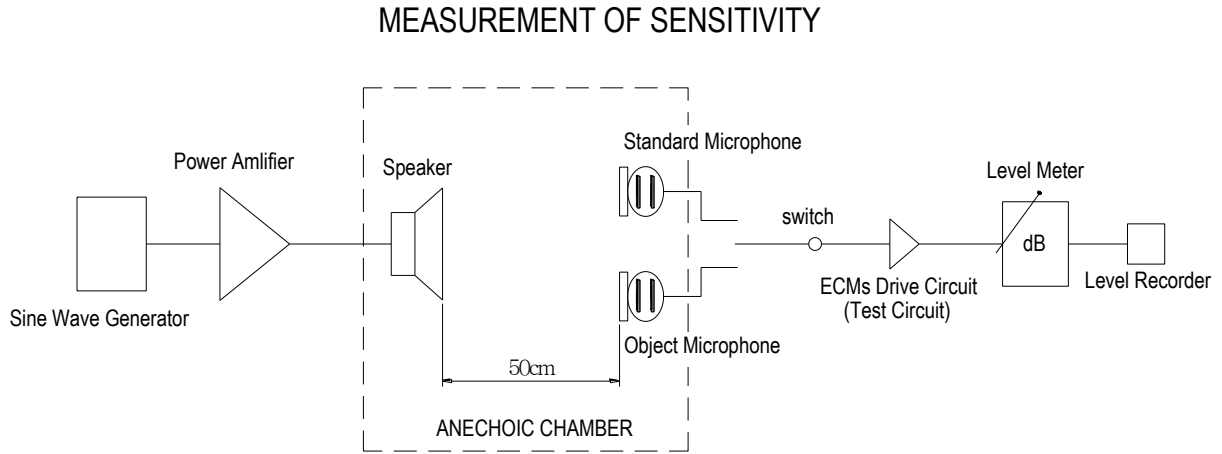
Item	Symbol	Test Conditions	Min	Standard	Max	Unit
灵敏度 Sensitivity	S	f=1kHz, Pin=1Pa	-43	-40	-37	dB (0dB=1V/Pa)
阻抗 Impedance	Z	f=1kHz, Pin=1Pa			2.2	k $\Omega$
指向性 Directivity	Omni-directional					
消耗电流 Current Consumption	I				500	$\mu A$
工作电压 Operation Voltage Range	U		1.0	2.0	10	V
信噪比 S/N Ratio	S/N(A)	f=1kHz, Pin=1Pa A Curve	58			dB
降压特性 Decreasing Voltage Characteristic	$\Delta S$	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

### 4. 测试电路 (Standard Test Circuit)

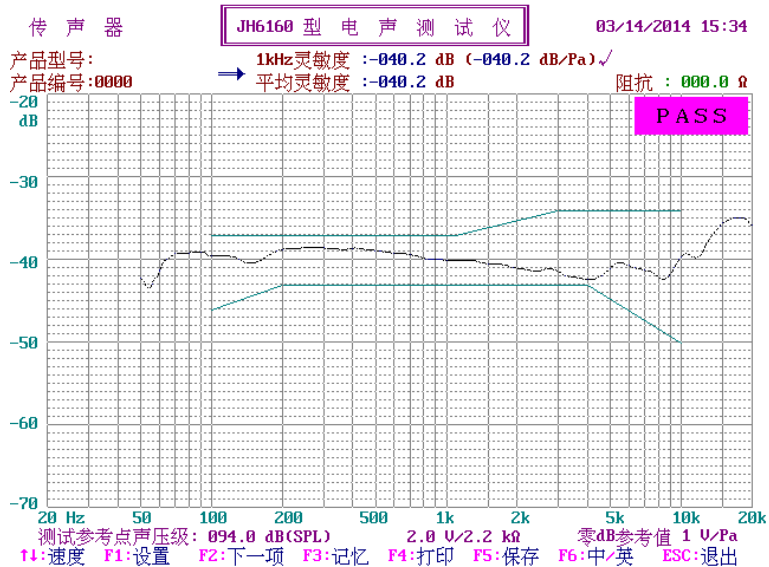
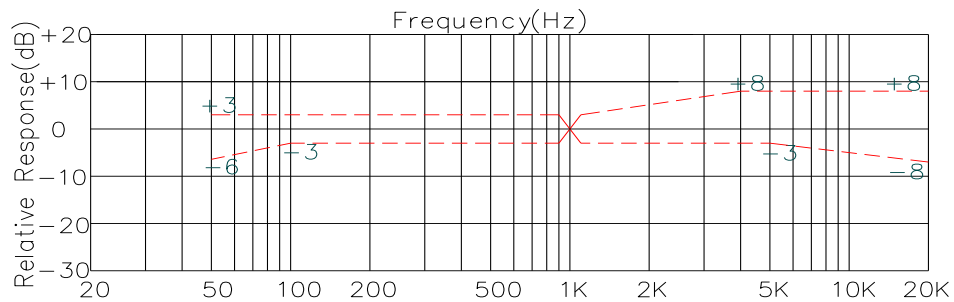
$V_S=2.0V$   $R_L=2.2k\Omega$   $T_e=20^\circ C$   $R.H.=60\%$



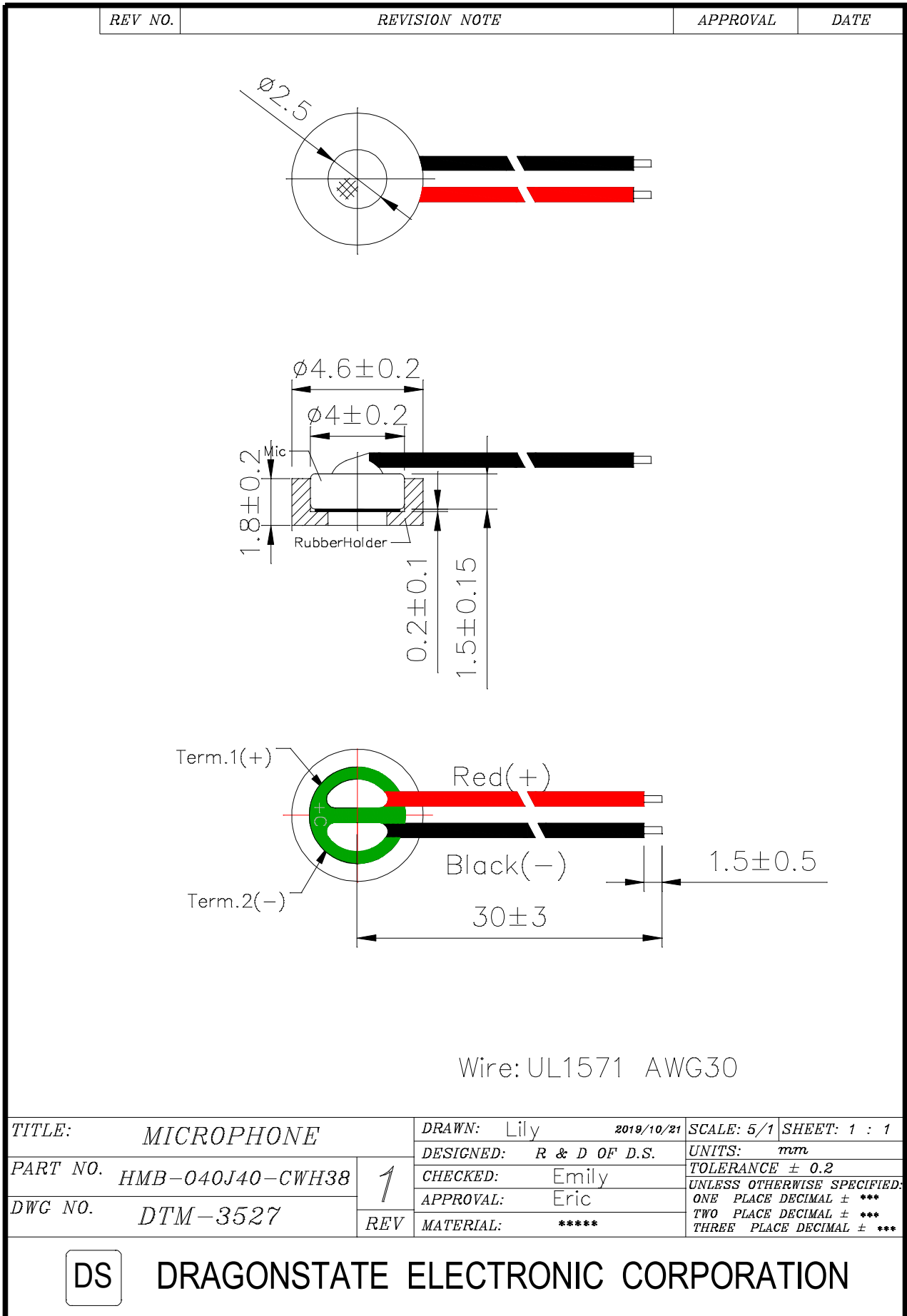
## 5. 测试装备图 (Standard Test Fixture)



## 6. 频响曲线 (Frequency Response Curve)



7.外观图 (Appearance Drawing)



## 8. 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±3dB 以内。

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

### 8.1 高温试验 (HIGH TEMPERATURE TEST)

温度(High temperature):	+70°C
放置时间(Duration):	200hours

### 8.2 低温试验 (LOW TEMPERATURE TEST)

温度(Low temperature):	-25°C
放置时间(Duration):	240 hours

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

低温(Low temperature):	-25°C
高温(High temperature):	+70°C
转化时间(Changeover time):	10min
放置时间(Duration):	30min
次数(Cycle):	5

### 8.4 湿度 (STATICAL HUMIDITY TEST)

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

### 8.5 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)

### 8.6 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)

### 8.7 静电测试 (ESD TEST)

在两次无杂质的静电释放暴露中放电.(接触:±8Kv,空气:±15 Kv)麦克风在 10 次暴露后无干扰  
The microphone under test must be discharged between each ESD exposure without ground.  
(contact:±8 kV, air:±15 kV)There is no interference in operation after 10 times exposure.

## 9. 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.

