

MESSRS.

SPECIFICATION FOR APPROVAL**承 认 书**

Product	ELECTRET CONDENSER MICROPHONE
Part No.	HMB-O40J42-DWH1(RoHS)
Customer Part No.	
Customer Approval	

Approved By	Checked By	Made By
王台平 APR-12-2012	曹丽萍 APR-12-2012	LILY APR-12-2012

常 州 华 龙 电 子 有 限 公 司
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EDITION:1.1

1. 变更记录 (History change record)

Change Items	Date	Note	Drawn by	Checked by
	2012-04-12	First Issue	Lily	王台平 2012-04-12

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		

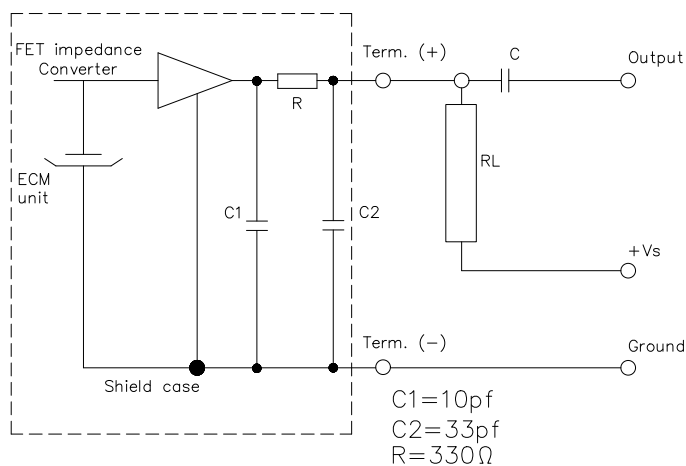
3. 规格 (Specifications)

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

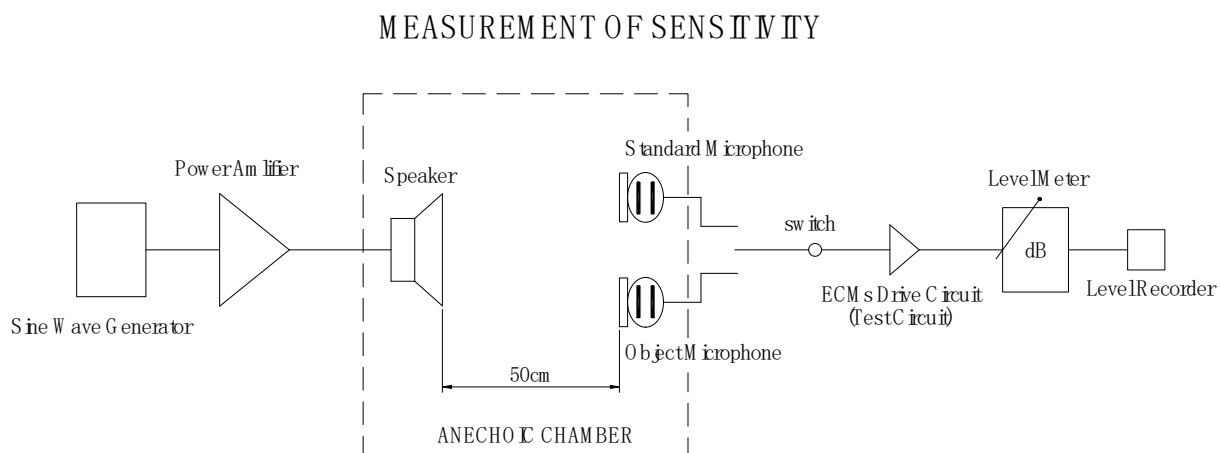
Item	Symbol	Test Conditions	Min	Standard	Max	Unit
灵敏度 Sensitivity	S	$f=1kHz, P_{in}=1Pa$	-45	-42	-39	dB ($0dB=1V/Pa$)
阻抗 Impedance	Z	$f=1kHz, P_{in}=1Pa$			2.2	$k\Omega$
指向性 Directivity		Omni-directional				
消耗电流 Current Consumption	I				500	μA
工作电压 Operation Voltage Range	U		1.0	2.0	10	V
信噪比 S/N Ratio	S/N(A)	$f=1kHz, P_{in}=1Pa$ A Curve	58			dB
降压特性 Decreasing Voltage Characteristic	ΔS	$f=1kHz, P_{in}=1Pa$ $V_S=2.0-1.5V$			-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)

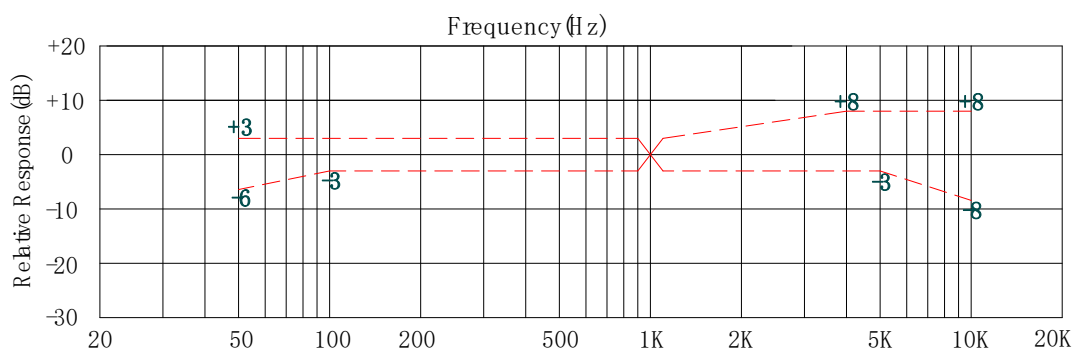
$V_S=2.0V$ $R_L=2.2k\Omega$ $T_e=20^\circ C$ $R.H.=60\%$



5. 测试装备图 (Standard Test Fixture)



6 频响曲线 (Frequency Response Curve)



REV NO.	REVISION NOTE	APPROVAL	DATE
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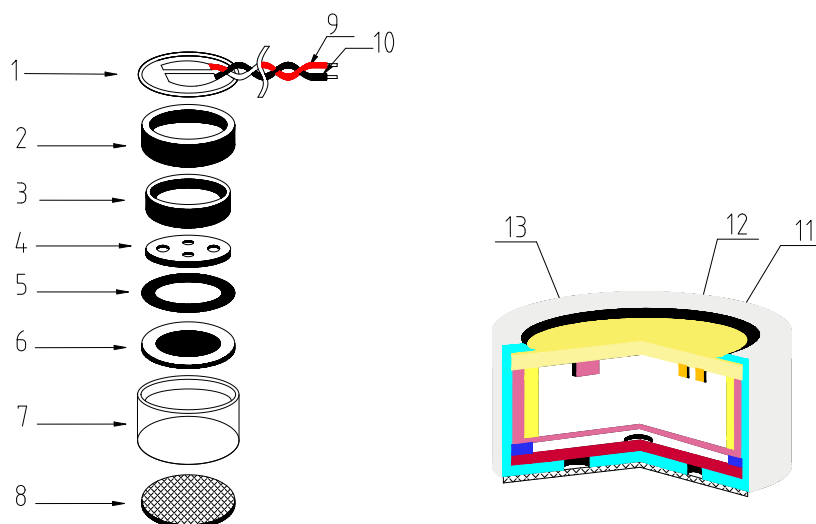
MIC. : $\varnothing 4 * 1.5$ mm
WIRE : UL 1571 , 32AWG

TITLE: MICROPHONE		DRAWN: Lily	2012/04/13	SCALE: 5:1	SHEET: 1 of 1
PART NO. HMB-040J42-DWH1	1 REV	DESIGNED: R & D OF D.S.		UNITS: mm	
DWG NO. DTM-1306		CHECKED: Emily		TOLERANCE ± 0.2	
		APPROVAL: Eric		UNLESS OTHERWISE SPECIFIED ONE PLACE DECIMAL $\pm$ *** TWO PLACE DECIMAL $\pm$ *** THREE PLACE DECIMAL $\pm$ ***	
		MATERIAL: *****			

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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	Jiantao	
2	Cavity	POM	1	Japan	Suzhou	
3	Copper ring	Brass AT65	1	China	Suzhou	
4	Back plate	ALSET FC-CNZ	1	Korea	3A	
5	Cushion plate	Mylar	1	China	Hebei	
6	Diaphragm	PPS	1	Japan	Dongli	
7	Case	Magal	1	China	Shanghai	
8	Cloth	non-woven fabrics	1	Japan	Sanjing	
9	Lead wire	UL1571 AWG 32	1	China	Shanghai	Red+
10	Lead wire	UL1571 AWG 32	1	China	Shanghai	Black-
11	Capacitor	10pF 0402	1	Japan	Murata	
12	Capacitor	33pF 0402	1	Japan	Murata	
13	FET	TF252THC	1	Japan	Sanyo	

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):	+70℃
放置时间(Duration):	240hours

9.2 低温试验 (LOW TEMPERATURE TEST)

温度(Low temperature):	-30℃
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):	-30℃
高温(High temperature):	+70℃
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):	+50℃
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 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)

9.7 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.

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:

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.

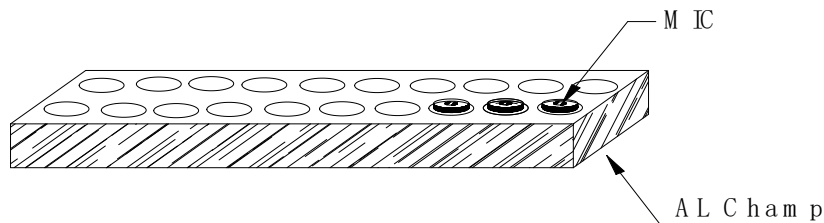
This FET easy to damageable from excessive heat and electrical shock. Proper attention for the soldering work is

required same as followings.

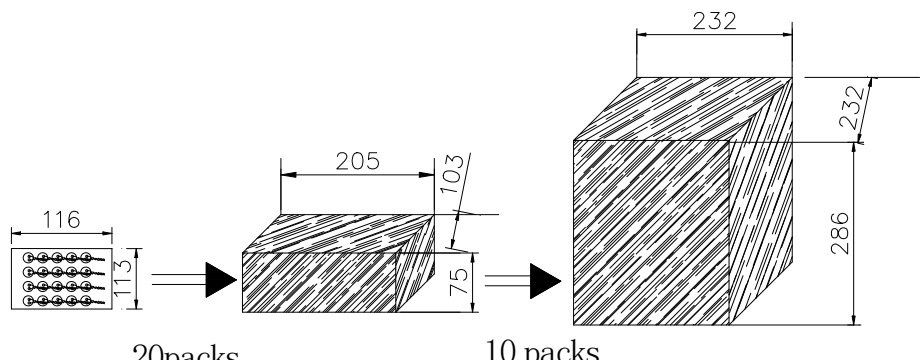
- Recommend to use 25W-35W ceramic soldering iron and apply $350 \pm 10^{\circ}\text{C}$ temperature range
- Soldering should be accomplished within 2 seconds at each terminal so as not to be overheated.
- Do not make a cavity at the surface of lead lump on the PCB. wiring board.

(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
 20packs 10 packs			
100pcs per plastic bag N/W :15g G/W 20g MODEL: QTY :50PCS LOT NO : 1000pcs per plastic box N/W :300g G/W 450g MODEL: QTY :1000PCS LOT NO : 10000pcs per out bag N/W :3.0KG G/W :5.5KG MODEL: QTY :10000PCS LOT NO :			
TITLE: packing		DRAWN: Lily 2009/05/23	
PART NO.		DESIGNED: R & D OF D.S.	
DWG NO.		CHECKED: Emily	
REV		APPROVAL: Eric	
		MATERIAL: *****	
		SCALE: 5/1	
		SHEET: 1 : 1	
		UNITS: mm	
		TOLERANCE ± 0.2	
		UNLESS OTHERWISE SPECIFIED:	
		ONE PLACE DECIMAL ± ***	
		TWO PLACE DECIMAL ± ***	
		THREE PLACE DECIMAL ± ***	
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