MESSRS.

SPECIFICATION FOR APPROVAL
承 认 书

Product	**ELECTRET CONDENSER MICROPHONE**
Part No.	**HMF-O97A40-NA(RoHS)**
Customer Part No.	
Customer Approval	

Approved By	Checked By	Made By
王台平 APR-12-2014	曹丽萍 APR-12-2014	LILY APR-12-2014

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EDITION:1.1

1. 变更记录（History change record）

Change Items	Date	Note	Drawn by	Checked by
	2014-04-12	First Issue	Lily	王台平 2014-04-12

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	-30~70		
Operating	-30~70		

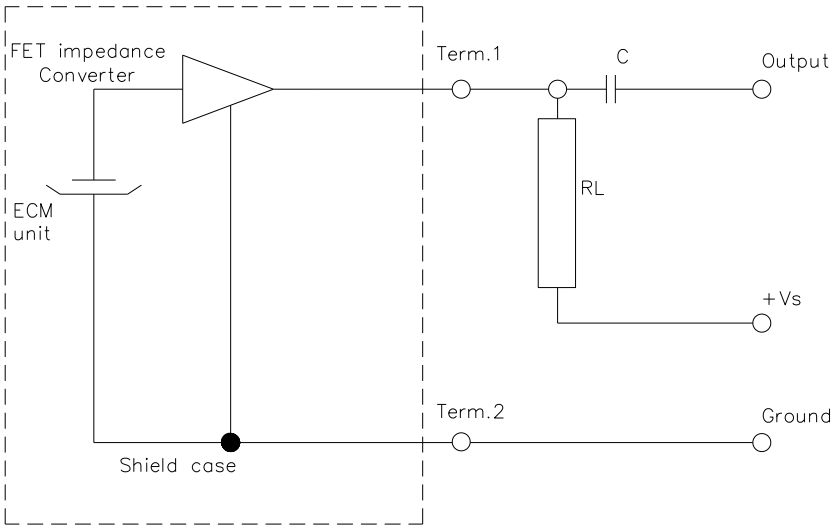
3. 规格 (Specifications)

Test conditions(V_S=4.5V R_L=2.2kΩ Temp=20±2℃ R.H=60±5%)

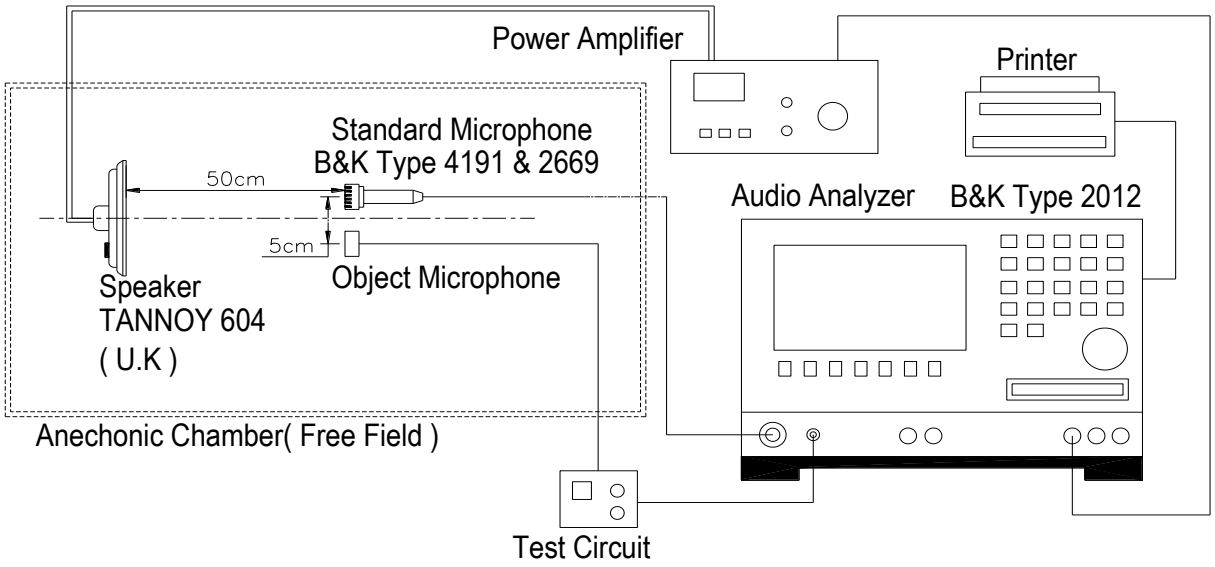
Item	Symbol	Test Conditions	Min	Standard	Max	Unit
灵敏度 Sensitivity	S	f=1kHz,Pin=1Pa	-42	-40	-38	dB (0dB=1V/Pa)
阻抗 Impedance	Z	f=1kHz,Pin=1Pa			2.2	kΩ
指向性 Directivity	Omni-directional					
消耗电流 Current Consumption	I				500	μA
工作电压 Operation Voltage Range	U		1.0	4.5	10	V
信噪比 S/N Ratio	S/N(A)	f=1kHz,Pin=1Pa A Curve	60			dB
降压特性 Decreasing Voltage Characteristic	ΔS	f=1kHz,Pin=1Pa V_S=3.0-2.0V			-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）

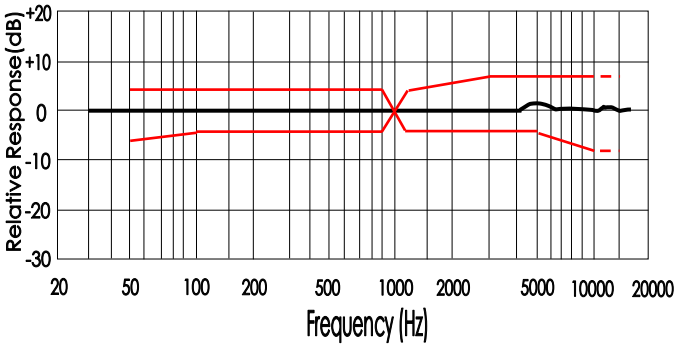
Vs=4.5V RL=2.2kΩ Te=20℃ R.H.=60%



5. 测试装备图（Standard Test Fixture）



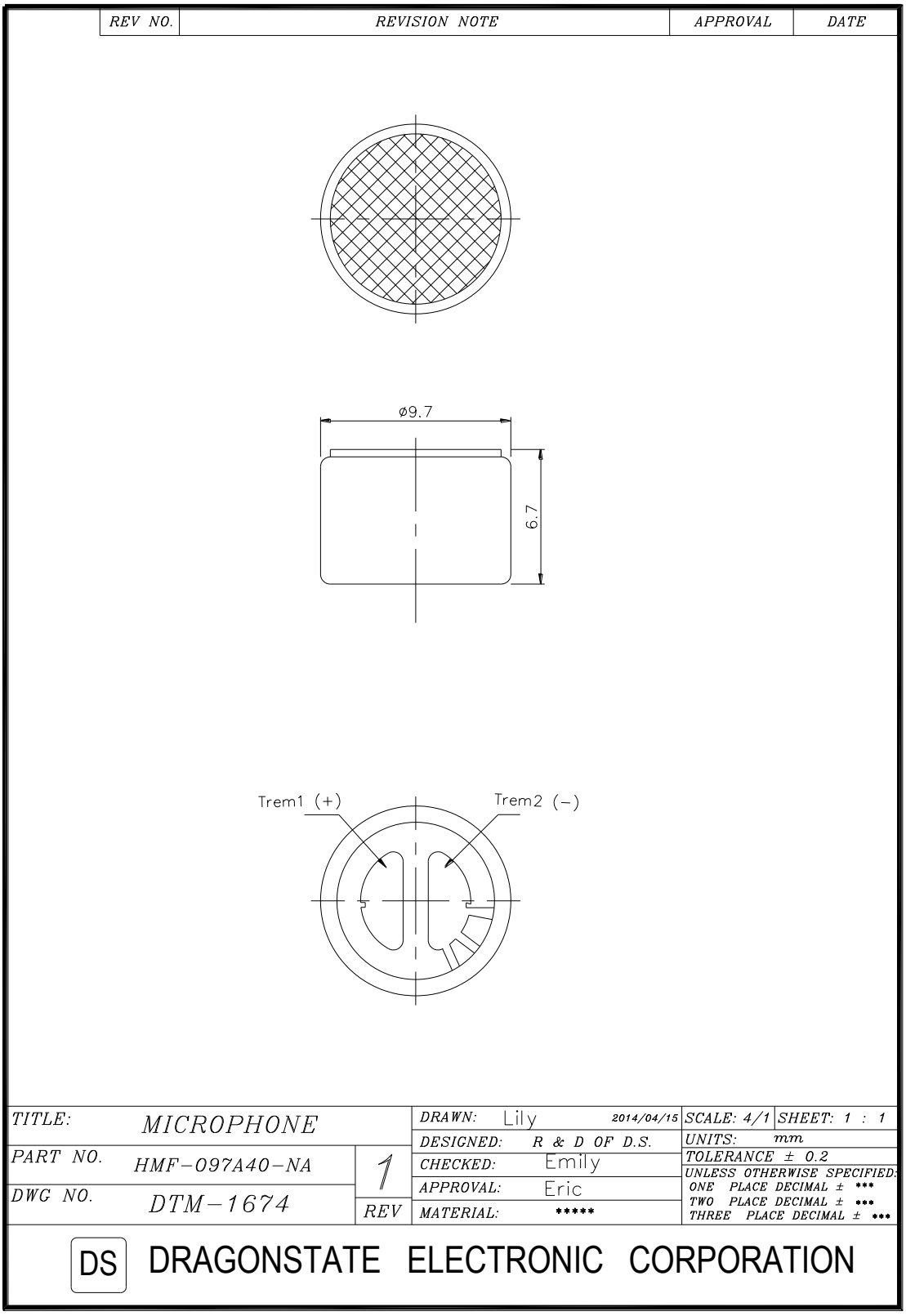
6 频响曲线（Frequency Response Curve）



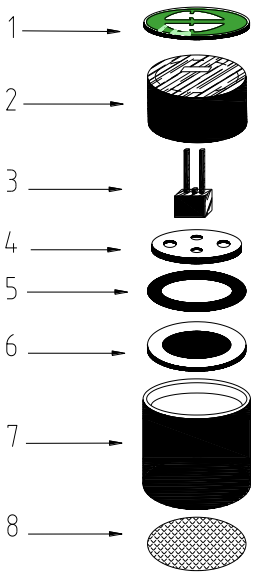
Microphone Response Tolerance Window

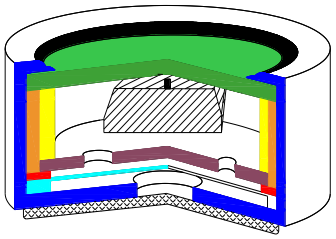
Frequency(Hz)	Lower Limit(dB)	Upper Limit(dB)
50	-6	+3
100	-3	+3
800	-3	+3
1000	0	0
1200	-3	+3
3000	-3	+8
5000	-3	+8
10000	-8	+8

7.外观图（Appearance Drawing）



8.结构图（Appearance Drawing）





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	Polycarbonate	1	Japan	Suzhou	
3	FET	CSK596	1	China	Xinxiang	
4	Back plate	H62 brass	1	China	Taicang	
5	Cushion plate	Mylar	1	China	Hebei	
6	Diaphragm	FEP 50A	1	USA	Dajing	
7	Case	Magal	1	China	Shanghai	
8	Cloth	non-woven fabrics	1	China	Changzhou	

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): 200hours

9.2 低温试验 (LOW TEMPERATURE TEST)

温度(Low temperature): -30℃

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): -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 (STATICAL HUMIDITY TEST)

温度(Temperature): +50±3℃

相对湿度(Relative humidity): 90±3%PH

放置时间(Duration): 200 hours

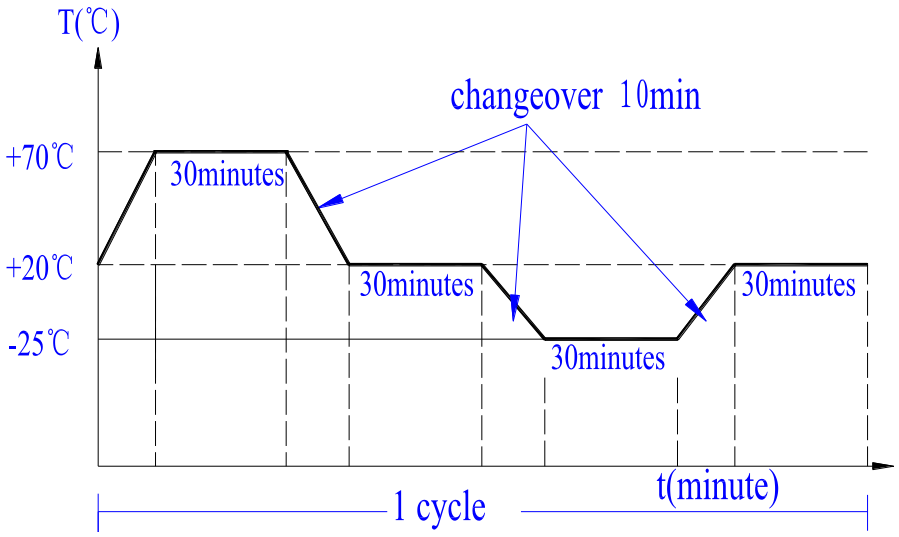
9.5 振动试验 (VIBRATION TEST)

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)



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±10℃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.

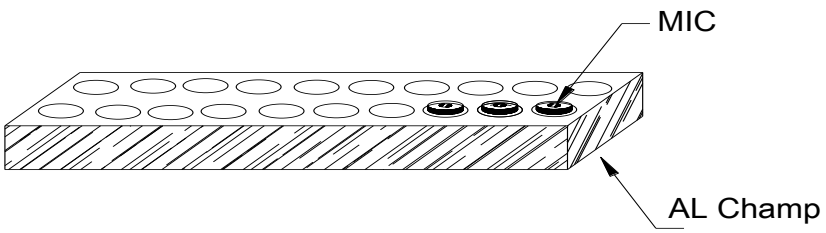
- Recommend to use 25W-35W ceramic soldering iron and apply 350±10℃ temperature range

- 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.

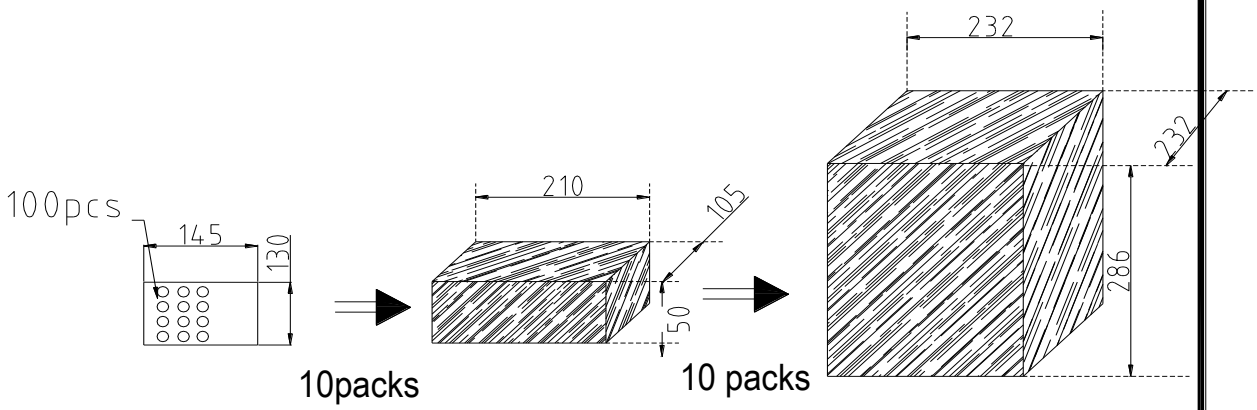
(Opened cavity will influence to the sensitivity of ECM)

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



11.包装规格 (Packing Specifications)

REV NO.	REVISION NOTE	APPROVAL	DATE



100pcs per plastic bag
N/W:60g G/W:65g
MODEL:
QTY:100PCS
LOT NO:

1000pcs per plastic box
N/W:600g G/W:700g
MODEL:
QTY:1000PCS
LOT NO:

10000pcs per out bag
N/W:6.0kG G/W:7.5kG
MODEL:
QTY:10000PCS
LOT NO:

TITLE: packing		DRAWN: Lily 2009/03/16	SCALE: 5/1	SHEET: 1 : 1
PART NO.	1	DESIGNED: R & D OF D.S.	UNITS: mm	
DWG NO.	REV	CHECKED: Emily	TOLERANCE ± 0.2	
		APPROVAL: Eric	UNLESS OTHERWISE SPECIFIED: ONE PLACE DECIMAL ± *** TWO PLACE DECIMAL ± *** THREE PLACE DECIMAL ± ***	
		MATERIAL: *****		

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