



# SPECIFICATIONS

MODEL NO  
OBO-04FP-0A-1F0

PART NAME  
ELECTRET CONDENSER MICROPHONE

SHEET  
OBO PRO. 2 INC.  
1 OF 7

2019.07.19

## ALTERNATION HISTORY

Marking	Date	ECN NO.	REV.	Description	Page	PREPARE	APPROVE
						BY	BY
--	July.12,2017	-----	A	Provisional Document	7	徐啸	林建宏
---	July.10.2019	DG1907001	B	Outage of old PCBA and change of new PCBA	7	汪冬冬	林建宏

REV.	DATE	PREPARED BY	CHECKED BY	APPROVED BY
B	July.10,2019	汪冬冬		林建宏

**MODEL NO :** OBO-04FP-0A-1F0

**Features:**Conformity RoHS Directive(2011/65/EU) Requests.

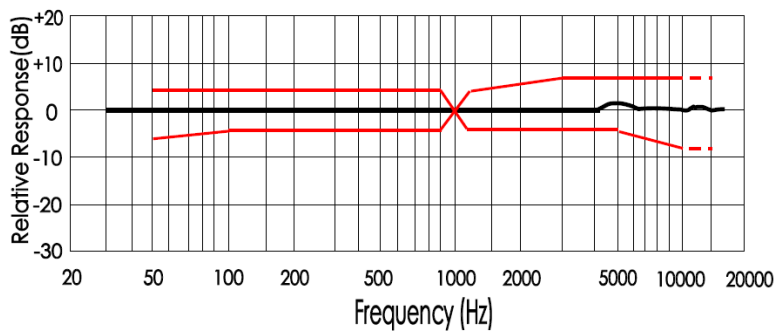
**1. ELECTRICAL CHARACTERISTICS**

Test Condition:(Vs=1.5V,RL=1.5KΩ,Ta=20±2°C,R.H.=65±5°C)

Directivity : Omnidirectional							
No	Parameter	Symbol	Condition	Limit			Unit
				Min	Center	Max	
1.1	Sensitivity	S	F=1KHz,S.P.L.=1Pa 0dB=1V/Pa	-42	-40	-38	dB
1.2	Output Impedance	Zout	F=1KHz 1Pa			1.5	KΩ
1.3	Current Consumption	IDss	VS=1.5V, L=1.5KΩ			500	μA
1.4	Signal to Noise Ratio	S/N	S:(F=1KHz,S.P.L.=1Pa) N:(A-Weighted Curve)	58			dB
1.5	Sensitivity reduction	ΔS-VS	VS=3.0V to 2.0V			-3	dB

**1.6 Typical Frequency Response Curve**

Frequency Response



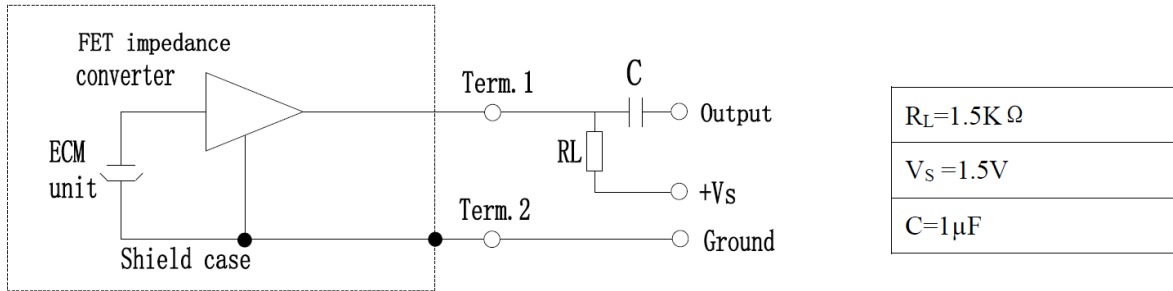
Microphone Response Tolerance Window

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

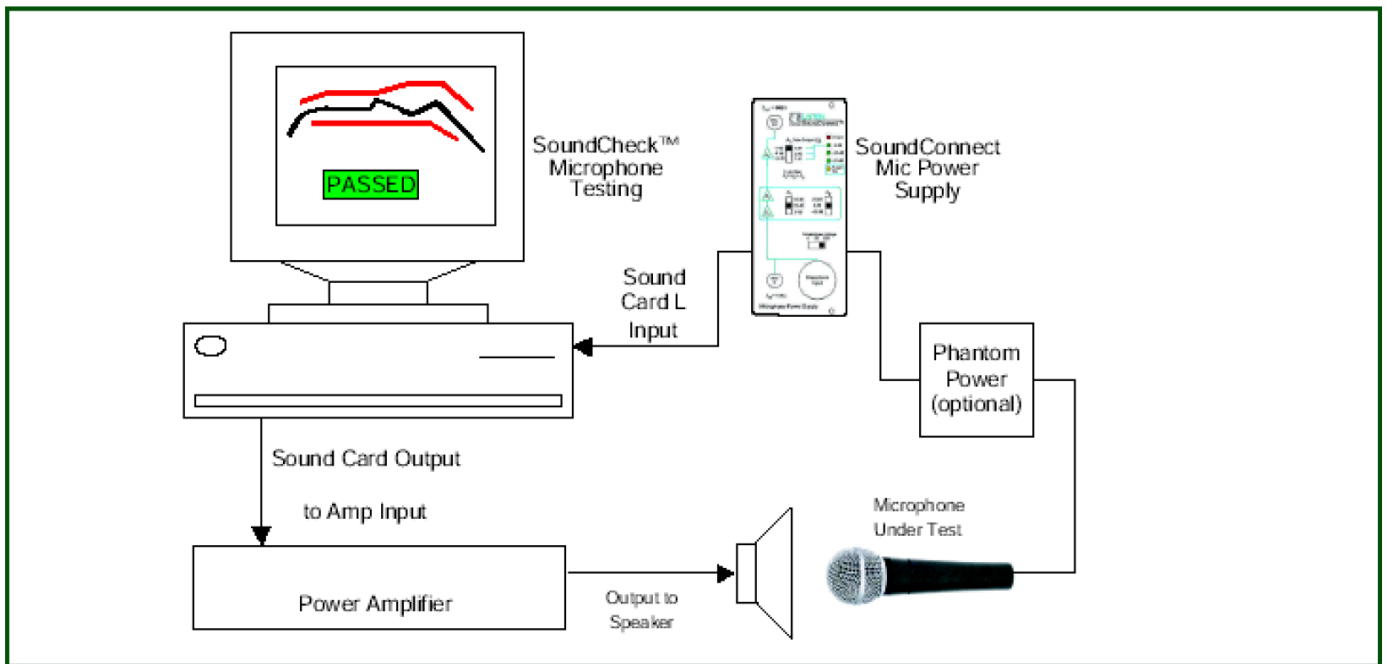
© Frequency: 50~16,000Hz

© Max. Operating Voltage: 10V

**2.MEASUREMENT CIRCUIT**



**3.MEASUREMENT METHOD**

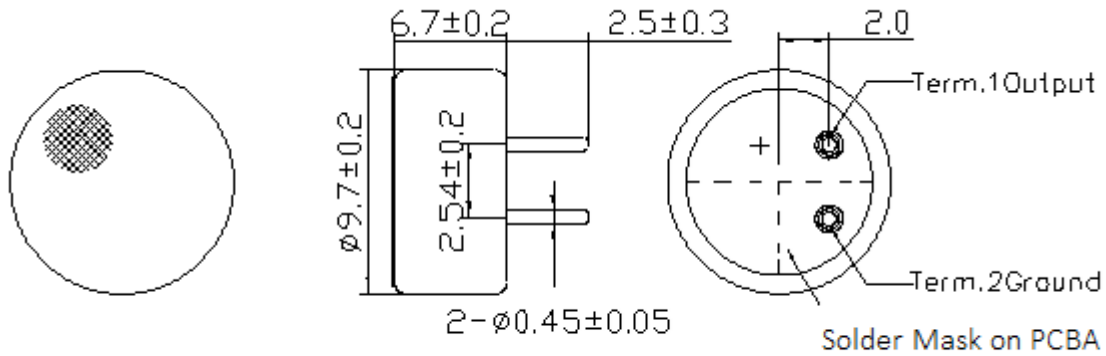


## 4. ASS'Y DRAWING

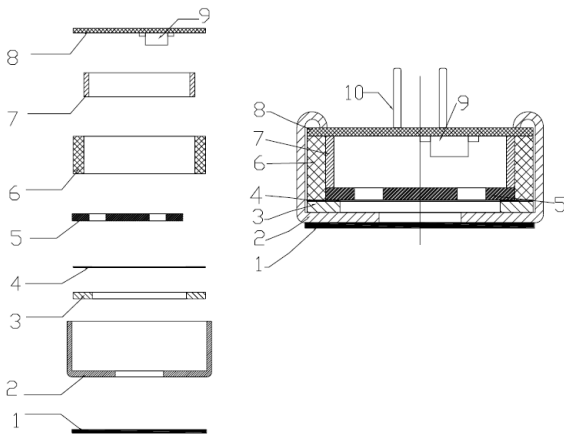
4.1 Soldering Standard : 320°C±5 / Max. 2±0.5 seconds

4.2 Mechanical Layout and Dimensions :

Unit: mm



## 4.3 Material And Structure



10	PIN		2	
9	FET		1	
8	P.C.B		1	FR-4
7	Copper ring		1	
6	Housing Chamber		1	
5	Electret Back	Copper blank	1	
4	Spacer		1	
3	Diaphragm		1	
2	Case	Al-Mg alloy	1	
1	Felt	Fabric cloth	1	
No.	Name	material	QTY	Remark

## 5. TEMPERATURE CONDITIONS

5.1 Operating Temperature Range: -20°C ~ +70°C

5.2 Storage Temperature Range: -40°C ~ +75°C

## 6. RELIABILITY TEST

After each of following test, the sensitivity of the microphone should be within ±3dB of initial sensitivity after 3hours of conditioning at 20°C.

### 6.1. Vibration Test

Frequency : 10Hz~55Hz

Amplitude : 1.52mm



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Change of Frequency : 1 octave/min

2 hours in each of axes

## 6.2. High Temperature Test

+85°C for 240 hours.

## 6.3. Low Temperature Test

-40°C for 240 hours.

## 6.4. Humidity Test

90%~95% RH,+60°C for 240 hours.

## 6.5. Thermal shocking test

-40°C, 30 minutes ↔ +80°C, 30 minutes, repeated 32 cycles → room temperature, 3 hours.

## 6.6. Temperature Cycles

-20°C ↔ +20°C ↔ +70°C ↔ +20°C ↔ -20°C

(2h) (0.5h) (2h) (0.1h) (2h) (0.5h) (2h) (0.5h) (2h) for 5 cycles.

## 6.7. Packing Drop Test

Height : 1.5m

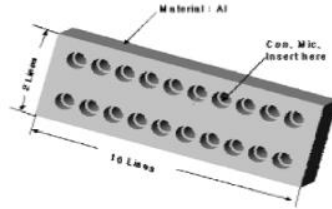
Procedure: 5 times from each of axes

## 7. Soldering Condition

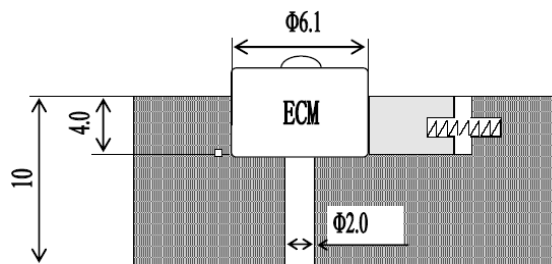
1. We suggest using anti-static welding machine which can control soldering temperature automatically.
2. Soldering temperature should be controlled under 320°C and soldering time for each terminal should be 1~2 sec..
3. Microphone should be fixed on the metal block (heat sink), which has high radiation effects, and heat sink shall contact with MIC tightly.
4. Microphone may easily be destroyed by the static electricity and the countermeasure for eliminating the static electricity shall be executed (worktable and human body shall be ground connection).

**8.Heat Sink**

Shape of heat sink



Shape of hole at fixed part



**9. Code Explanation**

NAME	EXPLANATION
O	Omni-direction Mic
F	Foil Electret
97	D=9.7mm
67	T=46.7mm
C	Pcb version No.C
-	Dash
402	Sensitivity -40±2dB
C	Test Condition 1.5KΩ / 1.5V
-	Dash
P27	Pin=2.5mm.
000	No Capacitance
-	Dash
00	No Rubber
-	Dash
0	No especial require

**10.PACKAGING**

**Packing Introduction**

**12.1 P/N:**

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**12.2 DIMENSION:(LENGTH\*WIDTH \*HEIGHT)**

- a) CASING SPONGE  
100mm\*100mm\*10mm
- b) SMALL PACKET  
100mm\*100mm\*17mm
- c) PLASTIC BAG:  
200mm\*300mm\*50mm
- d) PAPER CASE:  
500mm\*300mm\*285mm

**12.3 EQUIPMENT**

- a) ADHENSIVE TAPE MACHINE
- b) AUTO PACKER

**12.4 PACKING INTRODUCTION**

- a) 100PCS/ SMALL PACKET
- b) 600PCS/MID PACKET
- c) 12000PCS/PAPER CASE

**12.5 QUANTITY INTRODUCTION**

- a) 1PC=0.7g
- b) NET WEIGHT: 8.4kg  
GROSS WEIGHT: 12.1kg

**12.6 LABEL STIPULATION**

- a) LABELEDEVERY BOXES  
(SEE THE CHART)
- b) DIMENSIONSSHOUldbeseen  
EASILY.

**Packing chart**

