





Add: 深圳市龙华新区观澜章阁松源创新科技城 B 栋 4 楼  
4th Floor, building B, Songyuan Chuangxin  
Technology tower, Zhange village, Guanlan  
street, Longhua new district, Shenzhen, China

TEL: 0755-21632336  
FAX: 0755-23210686  
E-mail: htr@htrui.com

## Revision History

History Change	Date	Item	Contents
ISSUE From HORN To ****		HT6027BPin50-26C10.33M7033	Initial release
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## 1、 Introduction

This document describes the acoustic, mechanical and electrical specification for omni-directional, uni-directional, bi-directional front or back electret condenser microphone used on mobile phone, cellular phone, hearing aid or car acoustics. Some microphones with anti-RF-noise shall be stated.

## 2、 Elecreical Characteristics -40dB(0 dB =1V/Pa)=-60(0dB=1V/ubar)

Item	Symbol	Test conditions	Min	Standard	Max	Unit
Sensitivity	S	F=1KHz Pin=1Pa	-29	-26	-23	dB
Directivity	Omni-directional					
Output Impedance	Zout				2.2	kΩ
Current voltage	Vs	f=1KHz Pin=1Pa	1.5		10	V
Current consumption	I	f=1KHz Pin=1Pa			500	uA
Sensitivity reduction	Δ S	f=1KHz Pin=1Pa V=2→1.5V			-3	dB
S/N ratio	S/N(A)	f=1KHz Pin=1Pa A=cure	72			dB
Max Input Sound Pressure Level	MISPL	F=1KHz, THD<2%			110	dB

## 3、 Measuring circuit (Test Condition Vs+4.5V RL+2.2KΩ Ta=20°C)

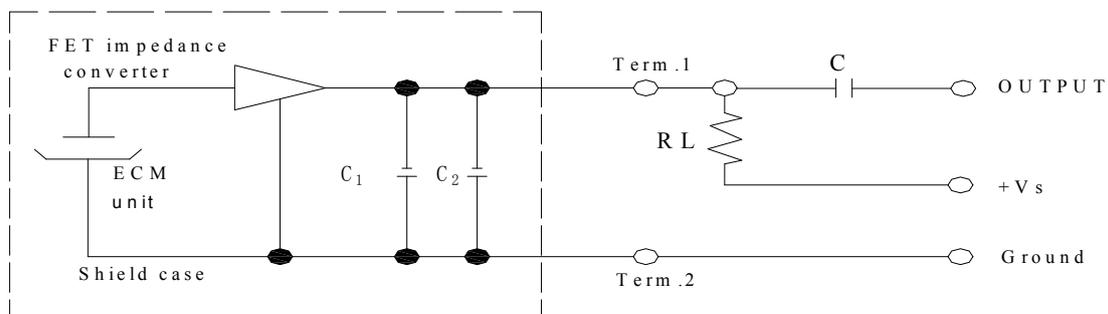
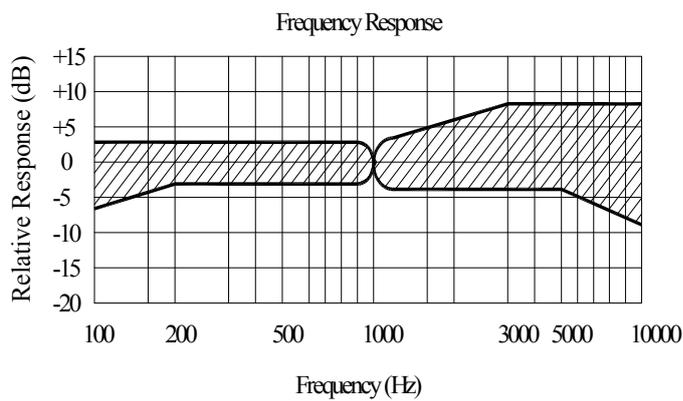


Figure 1: Measuring circuit

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## 4、 Frequency Response



Microphone Response Tolerance Window

Frequency (Hz)	Lower: (dB)	Upper: (dB)
100	-6	+3
200	-3	+3
900	-3	+3
1000	0	0
1100	-3	+3
3000	-3	+8
5000	-3	+8
10000	-8	+8

## 5、 Microphone test setup

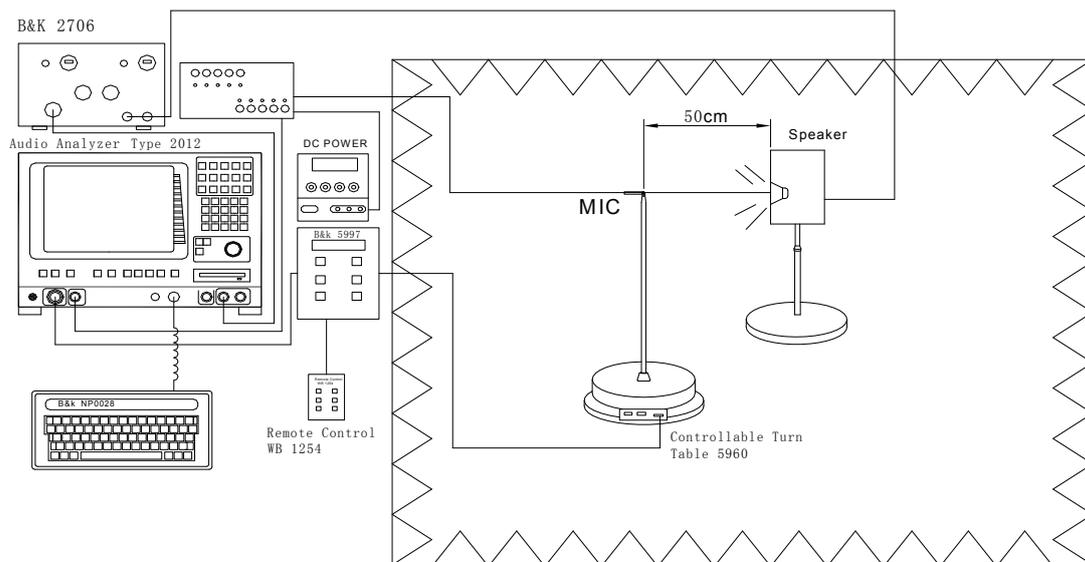


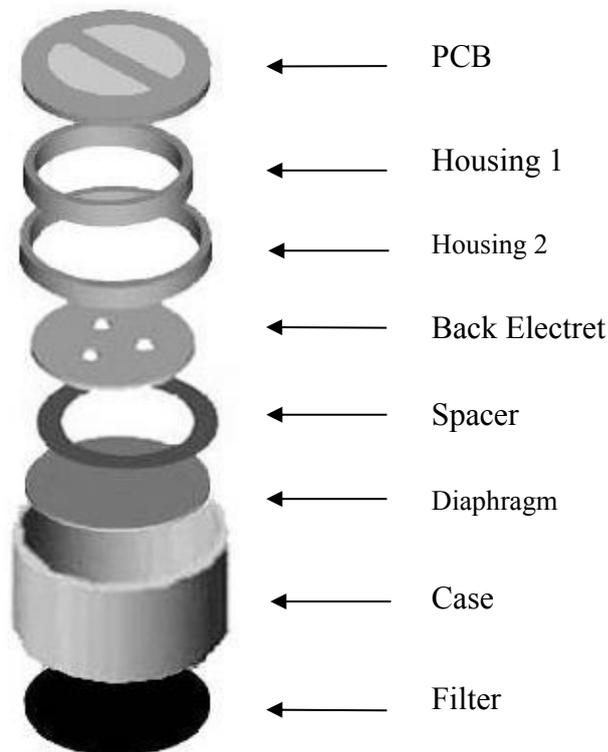
Figure 2: Microphone test setup for L=50cm test

## 6、 Mechanical parameters

### 6.1、 1Weight

Less than 1.0g

### 6.2、 Explode Drawing



## 7、 Stock and Transportation

7.1、 Keep microphone warehouse with less than 75% humidity and without sudden temperature change ,acid air ,any other harmful air or strong magnetic field

7.2、 The microphone with normal pack can be transported by ordinary conveyances. Please protect products against moist, shock, sunburn and plessure during transportation

### 7.3、 Operation condition

Ambient temperature:  $-20^{\circ}\text{C}\sim+60^{\circ}\text{C}$ ; Relative humidity:  $\leq 85\%$ .

### 7.4、 Storage condition:

Ambient temperature:  $-20^{\circ}\text{C}\sim+60^{\circ}\text{C}$ ; Relative humidity:  $45\%\sim 75\%$ .

## 8、 Reliability Test

### 8.1、 Vibration Test

To be no interference in operation after vibrations, 10Hz to 55Hz for 1 minute full amplitude 1.52 mm, for 2 hours at three axes in state of standard packing, sensitivity to be within  $\pm 3\text{dB}$  from initial sensitivity.

(The measurement to be done after 2 hours of conditioning at  $+15^{\circ}\text{C} \sim +35^{\circ}\text{C}$ , R. H 45%~75%)

### 8.2、 Drop Test

To be no interference in operation after dropped to concrete floor each one time from 1 meter height at three directions in state of Outer packing, sensitivity to be within  $\pm 3\text{dB}$  from initial sensitivity.

(The measurement to be done after 2 hours of conditioning at  $+15^{\circ}\text{C} \sim +35^{\circ}\text{C}$ , R. H 45%~75%)

### 8.3、 Temperature Test

A: After exposure at  $+85^{\circ}\text{C}$  for 200 hours, sensitivity to be within  $\pm 3\text{dB}$  from initial sensitivity

B: Exposure at  $-40^{\circ}\text{C}$  for 200 hours, sensitivity to be within  $\pm 3\text{dB}$  from initial sensitivity.

(The measurement to be done after 2 hours of conditioning at  $+15^{\circ}\text{C} \sim +35^{\circ}\text{C}$ , R. H 45%~75%)

### 8.4、 Humidity Test

After exposure  $+40^{\circ}\text{C}$  and 90%~95% relative humidity for 200 hours, sensitivity to be within  $\pm 3\text{dB}$  from initial sensitivity.

(The measurement to be done after 2 hours of conditioning at  $+15^{\circ}\text{C} \sim +35^{\circ}\text{C}$ , R. H 45%~75%)

### 8.5、 Temperature Cycle Test

After exposure  $-40^{\circ}\text{C}$  for 30 minutes, at  $20^{\circ}\text{C}$  for 10 minutes, at  $+85^{\circ}\text{C}$  for 30 minutes, at  $20^{\circ}\text{C}$  for 10 minutes, 5 cycles, sensitivity to be within  $\pm 3\text{dB}$  from initial sensitivity.

(The measurement to be done after 2 hours of conditioning at  $+15^{\circ}\text{C} \sim +35^{\circ}\text{C}$ , R. H 45%~75%)

### 8.6、 Temperature Shock Test

After exposure at  $-40^{\circ}\text{C}$  for 30 minutes, at  $+85^{\circ}\text{C}$  for 30 minutes (change time 20 seconds), 200 cycles, sensitivity to be within  $\pm 3\text{dB}$  from initial sensitivity.

(The measurement to be done after 2 hours of conditioning at  $+15^{\circ}\text{C} \sim +35^{\circ}\text{C}$ , R. H 45%~75%)

### 8.7、 Soldering Heat Shock

To be no interference in operation after soldering heat shock, temperature  $280^{\circ}\text{C} \pm 5^{\circ}\text{C}$  for  $(2 \pm 0.5)$  seconds. If customer confirm to use lead-free soldering, the soldering temperature is  $350^{\circ}\text{C} \pm 10^{\circ}\text{C}$  for  $(2 \pm 0.5)$  seconds, sensitivity to be within  $\pm 3\text{dB}$  from initial sensitivity.

(The measurement to be done after 2 hours of conditioning at  $+15^{\circ}\text{C} \sim +35^{\circ}\text{C}$ , R. H 45%~75%)

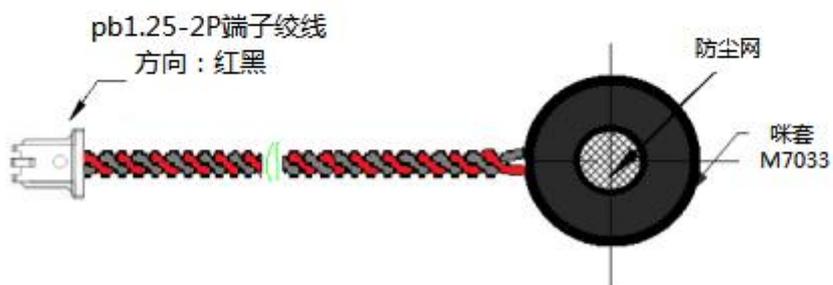
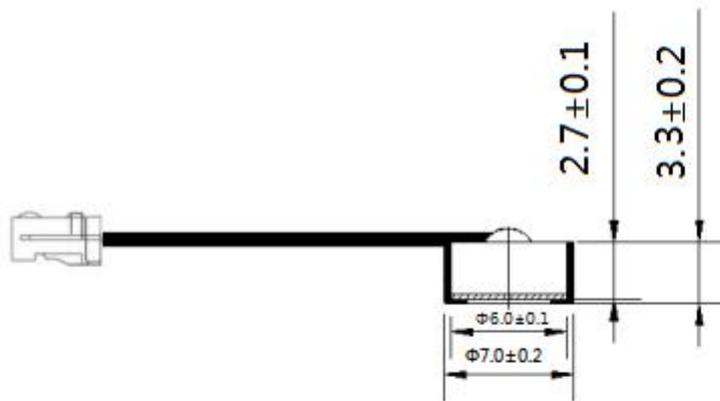
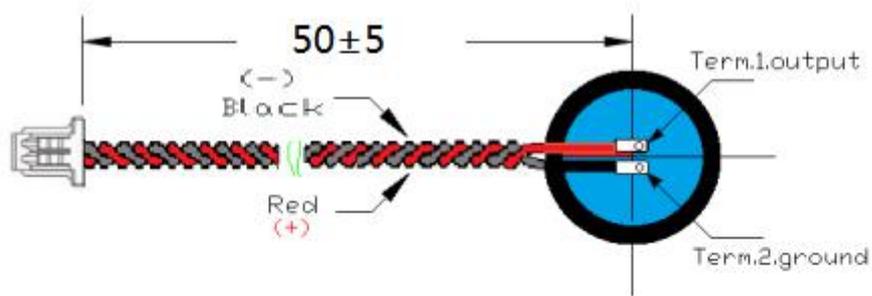
### 8.8、 Electrostatic Discharge Test

One pole is grounded and the Electrostatic Discharge pulse is applied to the other pole. The microphone under test must be discharged between each Electrostatic Discharge exposure (contact:  $\pm 8\text{KV}$ , air:  $\pm 15\text{KV}$ ) There is no interference in operation after 10 times exposure

(The measurement to be done after 2 hours of conditioning at  $+15^{\circ}\text{C} \sim +35^{\circ}\text{C}$ , R. H 45%~75%)

## 9、 Appearance Drawing

Unit:mm



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## 10、sensitivity register

序号	70Hz	1000Hz	电流(I)	备注
1	-28.0	-27.0	230	内置双电容
2	-26.9	-26.4	220	
3	-25.1	-25.6	200	
4	-24.6	-24.0	220	
5	-24.5	-25.0	240	
6	-23.2	-23.2	210	
7	-23.1	-23.8	260	
8	-24.9	-25.5	250	
9	-23.9	-24.3	220	
10	-25.6	-25.5	240	
Test condition		sensitivity scope		
2.0V 2.2KΩ		-26±3dB		

## 11、Packaging Details

### 11.1、Master carton packing

One master carton contains 10 inner packing boxes (5000 microphones).  
 Order quantities of less than 5000 pieces will be boxed in an appropriately sized box.  
 Please refer to figure 5.

	Dimension	Unit
Length (A)	435±10	mm
Width (B)	170±5	mm
Height (C)	170±5	mm

