



# Approval Sheet for Product Specification

## (产品承认书)

PRODUCT NAME: PIEZO BUZZER

(产品名称: 压电蜂鸣器)

CUSTOMER PART NO: \_\_\_\_\_

(客户型号: \_\_\_\_\_)

OUR PART NO: HYR-2240A

(我司型号: HYR-2240A)

1. This product shall comply with RoHs. (本产品符合RoHs指令。)
2. In case of changes, such as mold, manufacturing process, material, appearance, and inspection etc.The same procedure is required. (样品确认后,如模具、制造方法、材料、外观、检验等发生变更的情况下必须事前由双方进行协商。)

Customer Approved (客户承认)

Approved by (批准)	Checked by (复核)	Drafted by (编制)	Date (日期)
			2014/8/28

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# SPECIFICATION FOR BUZZER

## (蜂鸣器产品规格书)

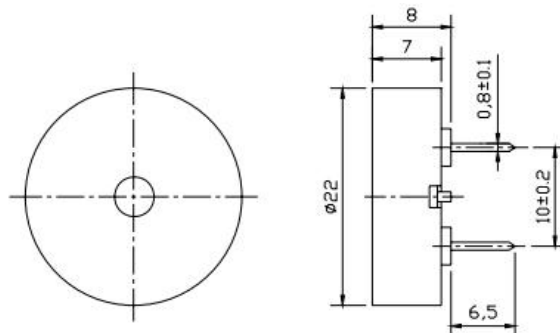
### 1. APPLICATION RANGE (应用范围)

This product specification is applied to the piezoelectric buzzer used for sounder in alarm systems. (产品属于压电蜂鸣器，广泛应用于发声系统)。

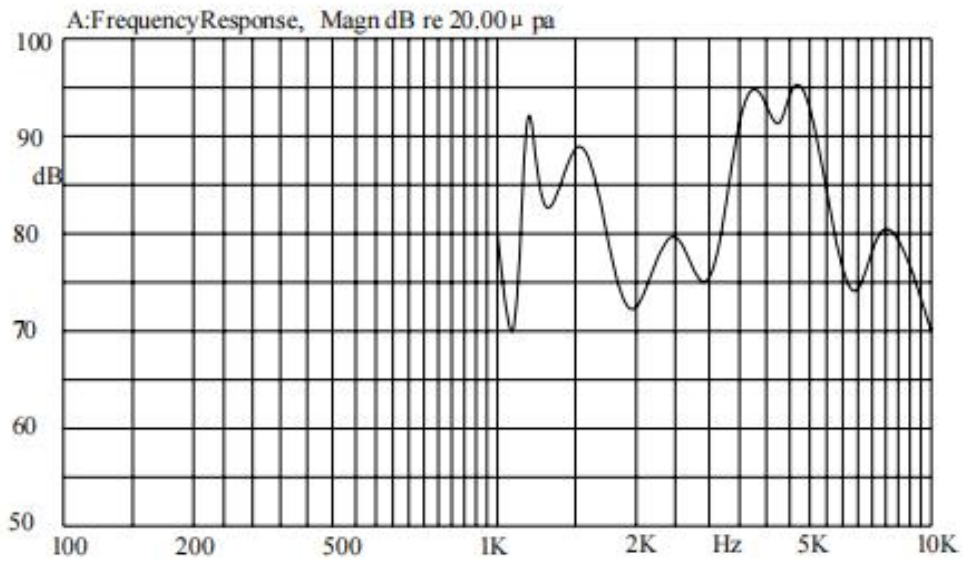
### 2. SPECIFICATIONS (规格)

Standard test condition: Temperature of  $25 \pm 3^\circ\text{C}$ , humidity  $60 \pm 10\%$  R.H.  
(标准测试条件: 温度 $25 \pm 3^\circ\text{C}$ , 湿度 $60 \pm 10\%$  R.H)。

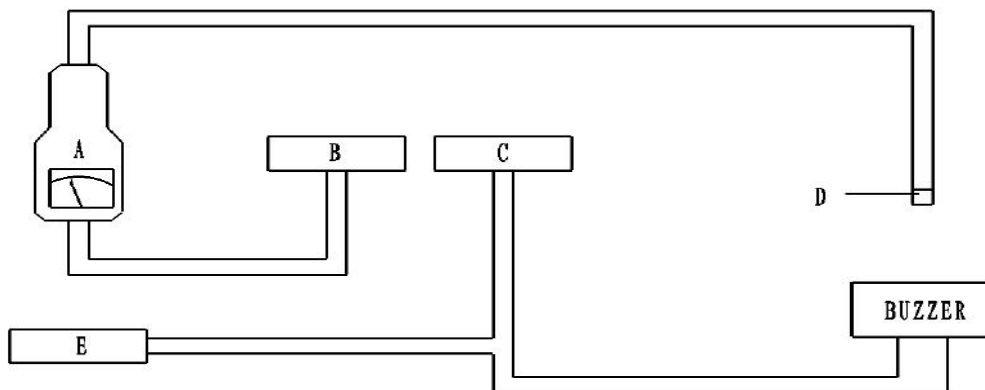
<b>Customer:</b>		<b>Part No:</b>		
<b>Product: Magnetic Buzzers</b>		<b>HY Part No: HYR-2240A</b>		
<b>Technical Terms</b>				
<b>Resonant Frequency (KHZ)</b>		<b><math>4.0 \pm 0.5</math></b>		
<b>Rated Voltage (V<sub>P-P</sub>)</b>		<b>5.0</b>		
<b>Operating Voltage (V<sub>P-P</sub>)</b>		<b>1~30</b>		
<b>Max. Current Consumption at Rated Voltage (mA)</b>		<b>5.0</b>		
<b>Capacitance at 1000Hz (Pf)</b>		<b><math>28000 \pm 30\%</math></b>		
<b>Min. Sound Output at 10cm at Rated Voltage (dB)</b>		<b>80</b>		
<b>Operating Temperature (°C)</b>		<b>-20~+70</b>		
<b>Storage Temperature (°C)</b>		<b>-30~+80</b>		
<b>Housing Material</b>		<b>ABS(Black)</b>		
<b>Environmental Protection Regulation</b>		<b>RoHS</b>		
<b>Buzzer</b>		<b>Soldering Parameter</b>		
<b>Soldering process</b>		<b>Temp.(°C)</b>	<b>Time(Sec.)</b>	<b>Times</b>
<b>Inclusive Lead</b>	<b>Reflow soldering</b>	<b><math>230 \pm 10</math></b>	<b>above 170°C time 40~70</b>	<b>2</b>
	<b>Wave soldering</b>	<b><math>245 \pm 5</math></b>	<b>3~6</b>	<b>1~2</b>
	<b>Manual soldering</b>	<b><math>330 \pm 10</math></b>	<b>1~2</b>	<b>1~2</b>
<b>Lead Free</b>	<b>Reflow soldering</b>	<b><math>245 \pm 15</math></b>	<b>above 180°C time 40~70</b>	<b>3</b>
	<b>★ Wave soldering</b>	<b><math>260 \pm 5</math></b>	<b>4~8</b>	<b>2~3</b>
	<b>★ Manual soldering</b>	<b><math>350 \pm 10</math></b>	<b>1~3</b>	<b>2~3</b>



### 3. FREQUENCY RESPONSE (频率响应曲线图)



### 4. SOUND PRESSURE TESTING CIRCUIT DIAGRAM (声压测试线路图)



- A: Sound Pressure Level Meter 声级计
- B: Frequency Counter 频率计
- C: RC oscillator 驱动电路
- D: Sound Pressure Level For Focus 声级计传声话筒
- E: Multimeter (Amphere Meter) 信号发声器



5. RELIABILITY TEST (可靠性试验)

序号	ITEM (项目)	METHOD OF TEST (试验方法)	VARIANCE AFTER CONDITIONIN(标准)
1	Dry Heat Test (Storage) 高温储存试验	After being placed in a chamber with $80 \pm 2^\circ\text{C}$ for 240 hours and then Being placed in natural condition for 4 hours, buzzer shall Be measured. 在 $80 \pm 2^\circ\text{C}$ 的试验箱里放置240小时, 然后在室温下放置4小时后测试。	Sound Pressure Level (Specification after test): Initial Value $\pm 10\text{dB}$ . 声压 (试验后变化量): 初始值 $\pm 10\text{dB}$ .
2	Cold Test (Storage) 低温储存试验	After being placed in a chamber with $-40 \pm 2^\circ\text{C}$ for 240 hours and then Being placed in natural condition for 4 hours, buzzer shall Be measured. 在 $-40 \pm 2^\circ\text{C}$ 的试验箱里放置240小时后, 然后在室温下放置4小时后测试。	
3	Humidity Test 耐湿性试验	After being placed in a chamber with 90 to 95%R.H. at $40 \pm 2^\circ\text{C}$ for 240 hours and then being placed in natural condition for 4 hours, Buzzer shall be measured. 在湿度为90—95%, 温度为 $40 \pm 2^\circ\text{C}$ 的温湿箱里放置240小时后, 然后在室温下放置4小时后测试。	
4	Temperature Cycle Test 温度循环试验	Make the test for 5 cycles without applying power as fig then expose to the room temperature for 4 hours. 不接电源按下图做5个周期试验, 然后在室温下放置4小时再测试。 	
5	Vibration Resistant 耐振动性	Buzzer shall be measured after being applied vibration of amplitude of 1.5mm with 10 to 55Hz band of vibration frequency to each of 3 perpendicular directions for 2 hours. 振动频率 $10 \sim 55\text{Hz}$ , 振幅为1.5mm, 朝X、Y、Z轴三个方向振动2小时后测试。	
6	Drop Test	Drop a product naturally form the height of 1000mm	

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	跌落试验	onto the surface of 100mm thick wooden board. Two directions: This is upper and side of the product are to be applied for this drop test respectively once. 从1000mm高度将产品自然跌落在100mm厚板上按正、侧面方向各做二次跌落试验，观察此产品能否承受跌落试验。	(Specification after test): Initial Value±10dB. 声压(试验后变化量): 初始值±10dB。
7	Soldering Heat Resistance 耐焊接热试验	Lead terminal are immersed up to 1.5mm from buzzer' s body in solder bath of 260℃ for 10 seconds, and then buzzer shall be measured after being placed in natural condition for 4 hours. 将插针端子浸入260℃的焊料至距离蜂鸣器本体1.5mm, 持续10秒, 然后在室温下放置4小时后测试。	
8	Solder ability 可焊性	Lead terminals are immersed in rosin for 5 seconds and then immersed in solder bath of 250℃ for 3 seconds. 将插针端子进入松香助焊剂5秒, 然后浸入250℃的焊料中3秒。	95%min. lead terminals shall be wet with solder. (Except the edge of terminal) 上锡面积≥95%。
9	Terminal Strength Pulling 端子强度	The force 10 seconds of 9.8N is applied to each terminal in axial direction. 插针端子能承受9.8N的负荷10秒。	No visible damage and cutting off. 端子没有明显的损伤和断裂、脱落。