



昆山海旭科技电子有限公司

Kunshan Haixu Electronic Technology Co. Ltd

样品承认书

Specification For Approval

客户名称 Customer Name	
品名 Variety	压电无源蜂鸣器
型号 Part No	SFN-2210-1220-35P10
客户型号 The customer Part No	
样品日期 Model Date	

客户承认签署

签定结果:		
核准/ <i>Approved:</i>	审核/ <i>Checked:</i>	经办/ <i>Designed:</i>

海旭确认签署

核准/ <i>Approved:</i>	审核/ <i>Checked:</i>	经办/ <i>Designed:</i>
丁爱勇	黄锡梅	梁嘉敏

承认后请签回一份! *Thank you very much!*

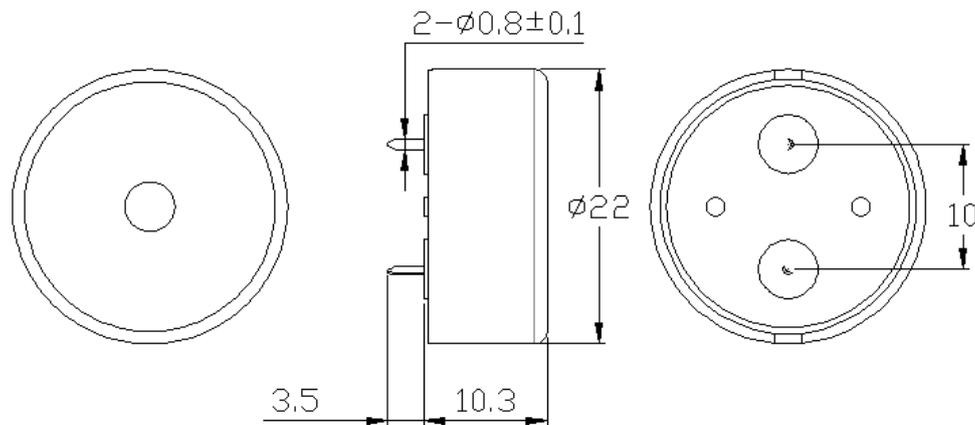
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型号 part No: SFN-2210-1220-35P10

性能参数 Electrical Characteristics

1	最大工作电压 MAX Operating Voltage (Vp_p)	30
2	*在 10cm 处测试声压值 Sound Output at 10cm (dB)	≥ 80 (at 2KHz Square Wave 5Vp-p)
3	*消耗电流 Current Consumption (mA)	≤ 5
4	共振频率 Resonant Frequency (Hz)	2000
5	电容量 Capacitance at 1000Hz (nF)	$27 \pm 30\%$
6	工作温度 Operating Temperature ($^{\circ}\text{C}$)	$-20 \sim +70$
7	储存温度 Storage Temperature ($^{\circ}\text{C}$)	$-30 \sim +80$
8	单品重量 Weight (g)	2.8
9	外壳材料 Housing Material	黑色 Black PBT
10	环保要求 Environmental Protection Regulation	RoHS
11	焊接方式 Welding method	手工焊接 Artificial welding / 波峰焊接 wave soldering

外形图 DIMENSIONS (UNIT: mm) 未标注公差按 $\pm 0.5\text{mm}$ 计算 Tolerance: $\pm 0.5\text{mm}$ Except Specified



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可靠性测试 RELIABLY TEST

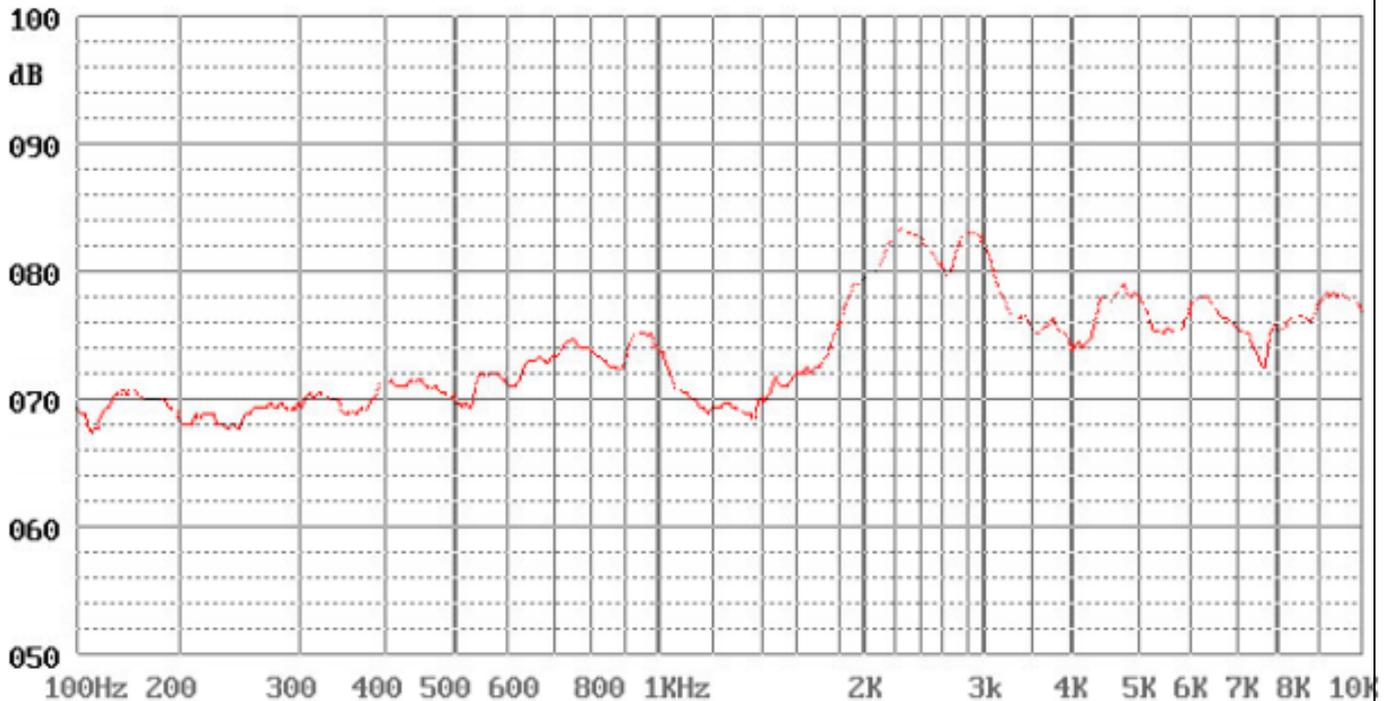
项目 ITEM	测试条件 TESTING CONDITION	试验后要求 VARIANCE AFTER TEST
高温试验 High Temperature Test	放置 85±2℃ 96 小时，再室温放置 2 小时。 After being placed in a chamber with 85±2℃ for 96 hours and then being placed in natural condition for 2 hours.	声压变化±10dB。 Allowable variation of SPL after test: ±10dB.
低温试验 Low Temperature Test	放置-30±2℃ 96 小时，再室温放置 2 小时。 After being Placed in a chamber with -30±2℃ for 96 hours and then being placed in natural condition for 2 hours.	声压变化±10dB。 Allowable variation of SPL after test: ±10dB.
恒湿试验 Humidity Test	存放在温度：60±5℃湿度：90%--95%的环境里 96 小时，然后放置到室温下放置 2 小时后测试。 Stored in the temperature humidity: 60±5℃ 90%--95% environment for 96 hours, and then placed into storage at room temperature for 2 hours after the test.	声压变化±10dB。 Allowable variation of SPL after test: ±10dB.
Temperature Cycle Test 温度循环试验	放置-30±2℃ 30 分钟、25℃±10℃放置 15 分钟，15 分钟后再将产品放入 +85±2℃30 分钟、常温 25℃±10℃放置 15 分钟，20 个循环后放置常温下 2 小时。 After being placed in a chamber with -30±2℃ for 30 minutes, products shall be placed at room temperature(25℃±10℃).After 15 minutes at this temperature, products shall be placed in a chamber at +85±2℃.After 30 minutes at this temperature, products shall be return to room temperature (25℃±10℃) for 15 minutes. After 20 above cycles, products shall be measured after being placed in natural condition for 2 hours.	声压变化±10dB。 Allowable variation of SPL after test: ±10dB.
Drop Test 跌落试验	正面和侧面从 100mm 高度只有跌落在 4cm 厚度的木板上 3 次。 The front and side from a height of 100mm only drop in the 4cm thickness of theboard 3 times each.	声压变化±10dB。 Allowable variation of SPL after test: ±10dB.
Vibration Test 振动试验	After being applied vibration of amplitude of 1.5mm with 10 to 55 Hz band of vibration frequency to each of 3 perpendicular directions for 2 hours. 频率 10~55Hz，振幅 1.5mm，3 个方向，振动 2 小时。	声压变化±10dB。 Allowable variation of SPL after test: ±10dB.
Solderability Test 可焊性试验	Lead terminals are immersed in rosin for 5 seconds and then immersed in solder bath of 200±5℃ for 3±0.5 seconds (Except the edge of terminals). 端子在松香中浸入 5 秒并在 200±5℃锡中浸 3±0.5 秒	95% min. lead terminals shall be wet with solder 有 95%吃锡效果。

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可靠性测试 RELIABLY TEST

项目 ITEM	测试条件 TESTING CONDITION	试验后要求 VARIANCE AFTER TEST
Continuous electricity test 连续通电试验	Temperature: room temperature 25 °C Voltage: rated voltage 5 V Frequency: the rated frequency for 2KHZ Time: 500 hours 温度: 室温 25°C 电压: 额定电压 5V, 频率: 额定频率 2KHz 时间: 500 小时	声压变化±10dB。 Allowable variation of SPL after test: ±10dB.
Terminal Strength Pulling Test 端子强度试验	The force of 9.8N(1.0kg) is applied to each terminal in axial direction for 10 seconds. 在每个端子上施加 9.8N (1.0kg) 的轴向力 10 秒。	No visible damage and cutting off. 端子没有明显的损坏和切断

Typical Frequency Response Curve (音频曲线图)



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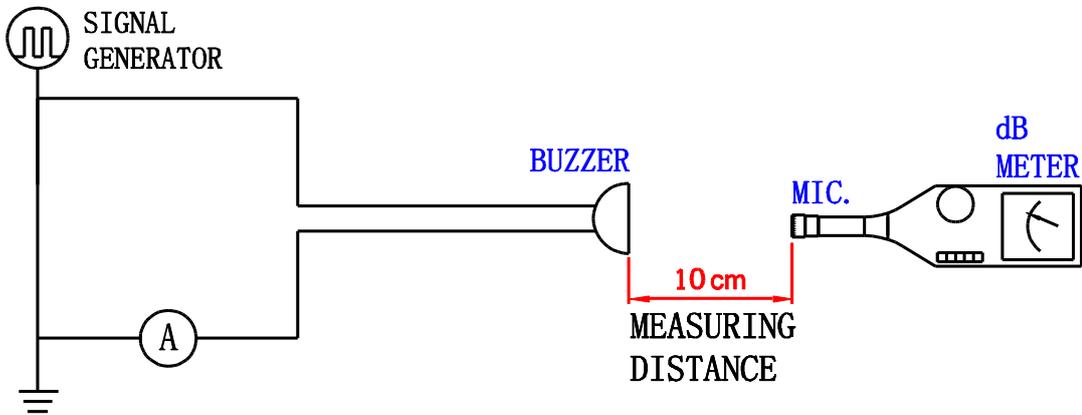
TESTING METHOD (测试方法)

Standard Measurement conditions

Temperature: $25 \pm 2^\circ\text{C}$ Humidity: 45-65%

Acoustic Characteristics:

The oscillation frequency, current consumption and sound pressure are measured by the measuring instruments shown below



In the measuring test, buzzer is placed as follows:

