

# 承认书 Specification

品名  
Model name

TMB12A05

**PROPRIETARY**  
Huaneng Electronic co.,Ltd.

**CONFIDENTIAL**  
Huaneng Electronic co.,Ltd.

Version #	Spec V1.0
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## 江苏华能电子有限公司

*Components Operating Div.  
HuanengElectronic co.,Ltd.*

1.适用范围：本规范适用于TMB12A05 蜂鸣器。

This specifications apply the TMB12A05 buzzer.

2.基本规格/General specification

项目/Item	规格/Spec	条件/Condition
1 额定电压 Rated voltage	5VDC	
2 工作电压 Operation voltage	3~8VDC	
3 声压 Sound Pressure Level=SPL	Min 90dB Typical 95dB	测试环境：标准状态，标准驱动电路， 额定电压 测试距离：0.1m Standard State,Standard Drive Circuit. Rated voltage,Distance at 0.1m
4 平均消费电流 Average consumption current	Max 30mA	
5 振荡频率 Oscillation frequency	2300±300Hz	
6 响应时间 Response time	Max 50mS	最低工作电压 Lowest operation voltage
7 工作温度范围 Range of operation temperature	-30~+80°C	声压 ≥90dB SPL ≥95dB
8 保存温度范围 Range of preservation temperature	-40~+85°C	
9 端子强度 Terminal strength	10N	拉负荷方向的终端轴 Pull load on the direction of the terminal axis
10 外部尺寸 Externals size	Ø12x9.5	参阅附图 Refer to the attached drawing
11 重量 Mass	2g	

☆标准状态：常温（15~35°C），湿度（25~85%相对湿度），空气压力（860~1060hpa）

在假设的情况判断，测试是一基本状态下进行。

Standard State:Ordinary Temp(15~35°C),Humidity(25~85%RH),Air pressure(860~1060hPa)

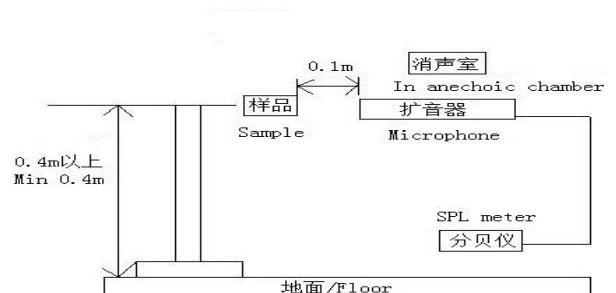
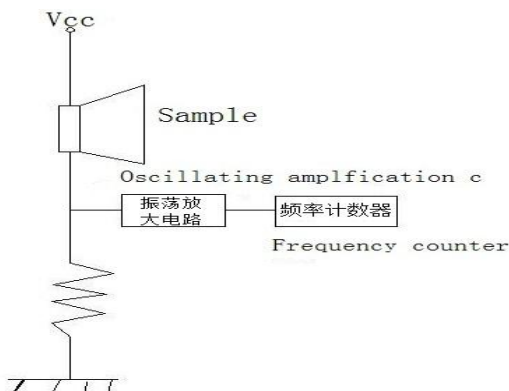
In case of doubtful judgment,the test is re—performed under Basic State.

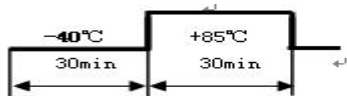
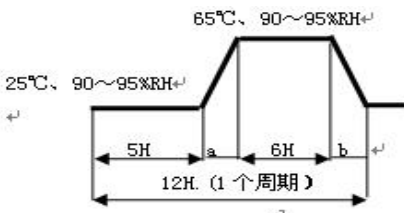
☆基本情况：温度。（20±2°C），湿度（60~70%相对湿度），空气压力（860~1060hpa）

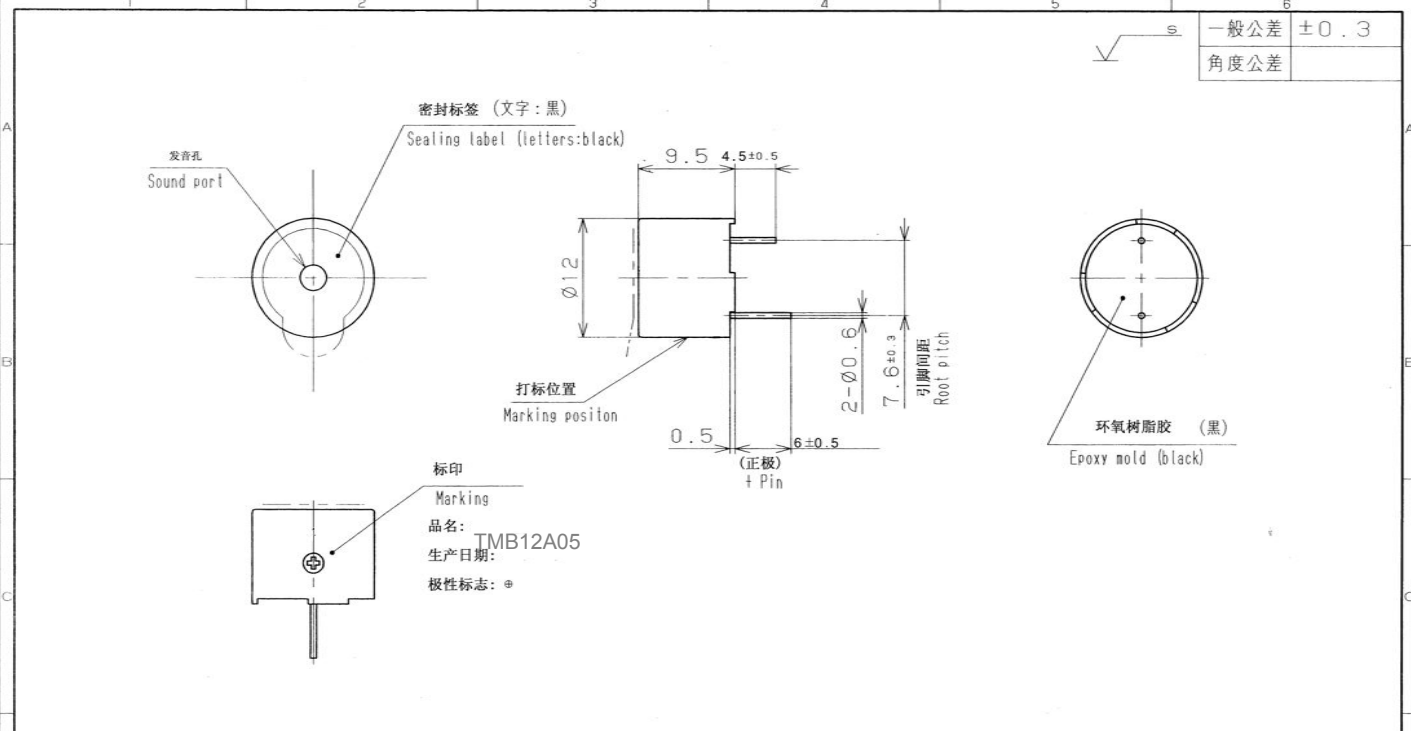
Basic State: Temp.(20±2°C),Humidity(60~70%RH),Air pressure(860~1060hPa)

&lt;标准驱动电路&gt;/&lt;Standard Drive Circuit&gt;

&lt;标标测试治具&gt;/&lt;Standard Test Fixture&gt;

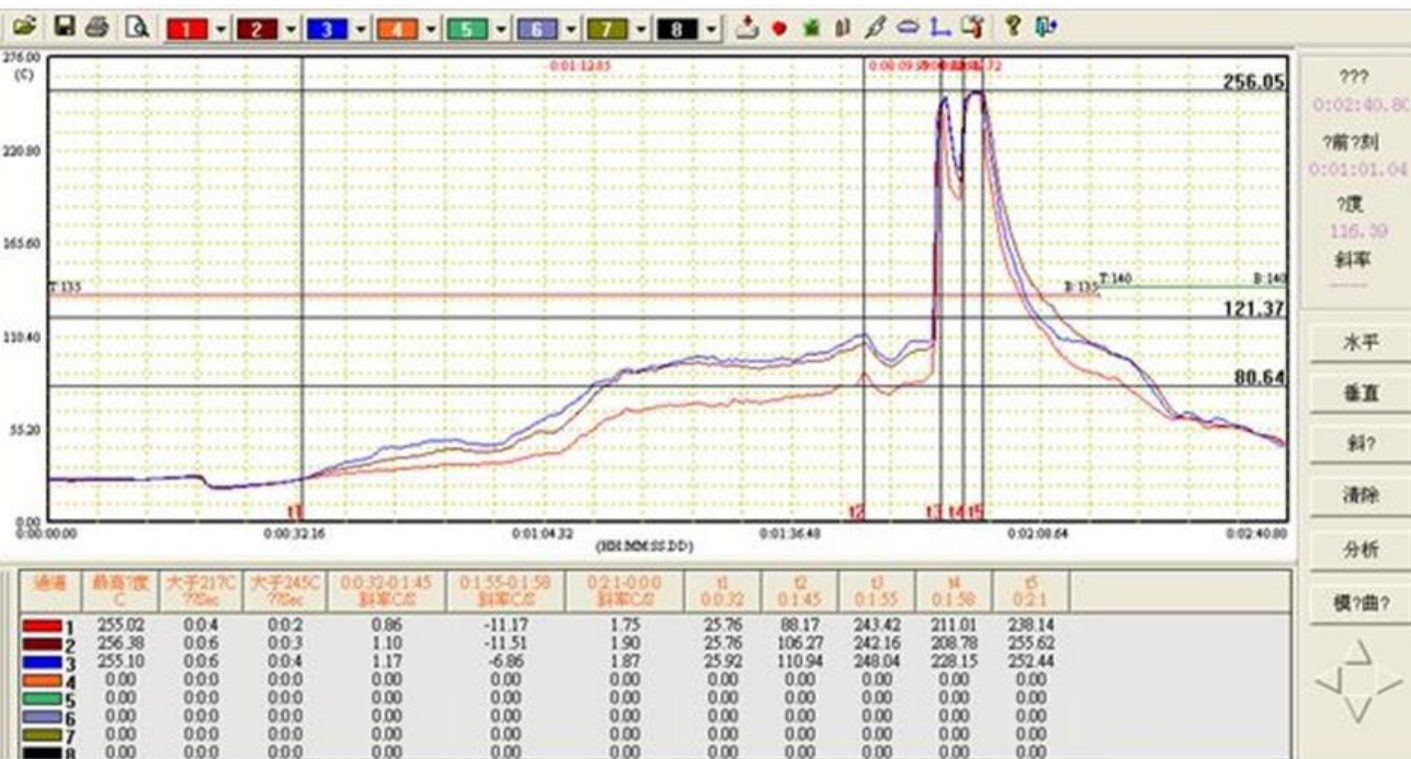


项目/Item	试验条件/Test condition	判断标准/Criteria	引用规格
1 高温保存试验 High temperature Preservation	+85℃环境下放置96小时 Exposure to +85℃ for 96 hrs.	经过测试,符合规格,没有任何不合格的外观和性能,除了是80分贝或以上(2300±300 Hz) After the test the part shall meet specifications without any degradation in appearance and performance except SPL. SPL shall be 80dB More. (at 2300±300 Hz)	
2 低温保存试验 Low temperature preservation	-40℃环境下放置96小时 Exposure to -40℃ for 96 hrs.		
3 耐温试验 Thermal Shock	 <p>10次周期 10 cycles</p>		
4 温湿度试验 Thermal, Humidity Shock	 <p>10 cycles</p>		
5 常温寿命试验 Ordinary Temp. Life	常温(25℃±10℃)电压5VDC连续测试96小时 Driving the sounder at 5VDC for 96hrs in the room temperature(25℃±10℃)		
6 高温寿命试验 High Temp. Life	高温(+85℃)电压5VDC连续测试2小时 Driving the sounder at 5VDC for 2hrs in the low temperature(+85℃)		
7 低温寿命试验 Low Temp. Life	低温(-40℃)电压5VDC连续测试2小时 Driving the sounder at 5VDC for 2hrs in the low temperature(-40℃)		
8 端子拉力试验 Lead strength	10N的拉力在端子上拉10±1秒 Pull load on the direction of the terminal axis for 10±1 sec.		
9 振动试验 Vibration	10~55~10Hz正弦波测试1分钟,振幅 1.52mm 最大91m/S <sup>2</sup> X, Y, Z三个方向每个2小时总计6小时 10~55~10Hz Sinewave, Sweep 1 min, Amplitude 1.52mm Max91m/S <sup>2</sup> X, Y, Z 3Direction 2hrs each, Total 6hrs		
10 自由掉落试验 Free drop	70cm高自由掉落到厚40mm的木板上,每个方向一次 Free drop, 70cm height, on wood board (t40mm) X, Y, Z 3Direction 1time each, total 3times.	排除弯曲的针 Exclude bending of Pin	
11 波峰焊耐热试验 Wave solderheat resistance test	262±10℃焊接温度。时间5±0.5sec Soldering into solderbath:Solder Temp. 262±10℃ Soaking Time: 5±0.5sec	经过测试,符合规格,没有任何不合格的外观和性能 After the test the part Shall meet specifications without any degradation in appearance and performance	
12 耐洗性试验 Washability	溶剂:去离子水,溶剂温度:55±5℃,时间:5±0.5分钟 Solvent:deionized water, Solvent temp:55±5℃ Soaking time:5±0.5minutes		
13 端子可焊性试验 Solderability	40℃,相对湿度90~95%RH放置48小时,370±5℃焊接温度。时间:6±0.5sec。 Pretreatment:40℃,90~95%RH*48hrs Soldering into solderbath:Solder Temp.370±5℃ Soaking Time: 6±0.5sec	端子95%必须覆盖着焊料 95% surface of lead pins must be covered with fresh solder and no soldering holes Should be found	



日期 DATE		变更号码 CHANGE NO.	变更内容 CHANGE CONTENTS	审批 APPROVED	张长华	材料 MATERIAL	PPO料	制造日期 DATE	出图日期
				检查 CHECKED	杨树银	加工 TREATMENT		品名 NAME	APPEARANCE DRWG
				设计 DESIGNED		表面处理 SURF. FIN.			产品名称
				制图 DRAWN		第三角法	尺度 SCALE 2/1 MM	品号 CODE NO.	
江苏华能电子有限公司 HUANENG Electronic Co., Ltd.									

波峰焊曲线图



- 1.PCB预热温度最高升温斜率2° C/sec
- 2.PCB预热温度范围80-120° C
- 3.PCB预热温度最高降温斜率6° C/sec
- 4.焊接时间(波峰1+波峰2)3-5 Sec.
- 5.锡缸焊料的温度范围250-260° C
- 6.运输速度1.4-1.5m/min